APPENDIX G
HISTORICAL DATA NOT USED IN RI

Table G-1a
Data Not Used in the RI - 1998 Landfill Site Inspection Soil Analytical Results
PCB Aroclors, Metals, Petroleum Hydrocarbons, Herbicides, and Pesticides
(Page 1 of 2)

Site ID	BK1-01	BK2-01	BK3-01	MW-01	PW1-01	TP1-01	TP2-01	TP4-01	TP5-01	TP5-01 DUP	TP6-01	TP6-02	TP7-01	TP8-01
Sample ID	BK1-SS-01	BK2-SS-01	BK3-SS-01	SB1-SS-01	PW1-SS-01	TP1-SS-01	TP2-SS-01	TP4-SS-01	TP5-SS-01	TP9-SS-01	TP6-SS-01	TP6-SS-02	TP7-SS-01	TP8-SS-01
Sample Date	8/18/1998	8/18/1998	8/18/1998	8/17/1998	8/19/1998	8/19/1998	8/19/1998	8/19/1998	8/20/1998	8/20/1998	8/20/1998	8/20/1998	8/20/1998	8/20/1998
Sample Depth (Feet bgs)	0.5	0.5	0.5	20	1	10	2	3.7	5	5	4	6.5	4.5	4
PCB Aroclors (µg/kg)														
Aroclor 1016	-	-	-	50.0 UJ	50.0 UJ	1,050 UJ	550 UJ	50.0 UJ	1,050 UJ	1,050 UJ	1,050 UJ	50.0 UJ	2,550 UJ	50.0 UJ
Aroclor 1221	-	-	-	50.0 UJ	50.0 UJ	1,050 UJ	550 UJ	50.0 UJ	1,050 UJ	1,050 UJ	1,050 UJ	50.0 UJ	2,550 UJ	50.0 UJ
Aroclor 1232	-	-	-	50.0 UJ	50.0 UJ	1,050 UJ	550 UJ	50.0 UJ	1,050 UJ	1,050 UJ	1,050 UJ	50.0 UJ	2,550 UJ	50.0 UJ
Aroclor 1242	-	-	-	50.0 UJ	50.0 UJ	1,050 UJ	550 UJ	50.0 UJ	1,050 UJ	1,050 UJ	1,050 UJ	50.0 UJ	2,550 UJ	50.0 UJ
Aroclor 1248	-	-	-	50.0 UJ	50.0 UJ	1,050 UJ	550 UJ	50.0 UJ	1,050 UJ	1,050 UJ	1,050 UJ	50.0 UJ	2,550 UJ	50.0 UJ
Aroclor 1254	-	-	-	50.0 UJ	50.0 UJ	1,050 UJ	550 UJ	50.0 UJ	1,050 UJ	1,050 UJ	1,050 UJ	50.0 UJ	2,550 UJ	50.0 UJ
Aroclor 1260	-	-	-	50.0 UJ	50.0 UJ	**2,250**	550 UJ	50.0 UJ	1,050 UJ	1,050 UJ	1,050 UJ	50.0 UJ	2,550 UJ	50.0 UJ
Aroclor 1262	-	-	-	50.0 UJ	50.0 UJ	1,050 UJ	550 UJ	50.0 UJ	1,050 UJ	1,050 UJ	1,050 UJ	50.0 UJ	2,550 UJ	50.0 UJ
Aroclor 1268	-	-	-	50.0 UJ	50.0 UJ	1,050 UJ	550 UJ	50.0 UJ	1,050 UJ	1,050 UJ	1,050 UJ	50.0 UJ	2,550 UJ	50.0 UJ
Total PCBs as Aroclors	-	-	-	50.0 UJ	50.0 UJ	**2,250**	550 UJ	50.0 UJ	1,050 UJ	1,050 UJ	1,050 UJ	50.0 UJ	2,550 UJ	50.0 UJ
Metals (mg/kg)														
Aluminum	**12,000**	**19,500**	**20,200**	-	-	**16,600**	-	**11,200**	**12,600**	**13,200**	**16,000**	-	-	**9,020**
Antimony	0.500 U	0.500 U	0.500 U	-	-	**4.49**	-	0.500 U	**0.874**	**1.16**	0.500 U	-	-	**3.05**
Arsenic	**2.77 J**	**3.24 J**	**2.92 J**	-	-	**9.73 J**	-	**2.18 J**	**3.04 J**	**2.11 J**	**1.75 J**	-	-	**5.35 J**
Barium	**77.0**	**95.5**	**139**	-	-	**567**	-	**84.6**	**136**	**98.3**	**87.6**	-	-	**156**
Beryllium	0.500 U	**0.554**	**0.622**	-	-	0.500 U	-	0.500 U	0.500 U	0.500 U	0.500 U	-	-	0.500 U
Cadmium	0.500 U	**0.575**	0.500 U	-	-	**195**	-	0.500 U	**4.54**	**3.55**	**7.92**	-	-	**5.03**
Calcium	**6,180**	**8,030**	**7,890**	-	-	**9,740**	-	**6,610**	**5,050**	**5,420**	**8,870**	-	-	**6,830**
Chromium	**11.9**	**19.2**	**21.3**	-	-	**60.1**	-	**9.12**	**14.0**	**12.6**	**9.34**	-	-	**13.5**
Cobalt	**11.4**	**18.9**	**17.5**	-	-	**17.2**	-	**8.28**	**9.02**	**7.93**	**7.92**	-	-	**10.7**
Copper	**45.0**	**49.9**	**53.6**	-	-	**1,620**	-	**28.5**	**55.1**	**44.7**	**53.0**	-	-	**204**
Iron	**18,900**	**25,600**	**28,300**	-	-	**52,700**	-	**21,500**	**18,100**	**22,300**	**22,400**	-	-	**16,900**
Lead	**14.2**	**18.7**	**8.67**	-	-	**7,140**	-	**189**	**193**	**151**	**1,120**	-	-	**403**
Magnesium	**7,090**	**11,700**	**15,900**	-	-	**5,180**	-	**7,070**	**5,860**	**5,660**	**7,840**	-	-	**5,840**
Manganese	**368**	**610**	**460**	-	-	**1,830**	-	**273**	**362**	**290**	**211**	-	-	**381**
Mercury	**0.101**	0.100 U	0.500 U	-	-	**1.61**	-	0.100 U	**1.66**	**3.52**	0.100 U	-	-	**3.50**
Nickel	**16.3**	**24.2**	**19.2**	-	-	**84.0**	-	**14.0**	**17.7**	**15.3**	**20.4**	-	-	**21.3**
Potassium	**204**	**962**	**764**	-	-	**1,180**	-	**865**	**1,100**	**1,020**	**1,020**	-	-	**826**
Selenium	**0.801**	0.500 U	0.500 U	-	-	0.500 U	-	0.500 U	0.500 U	0.500 U	0.500 U	-	-	0.500 U
Silver	0.500 U	0.500 U	0.500 U	-	-	**46.0**	-	0.500 U	0.500 U	0.500 U	0.500 U	-	-	**12.0**
Sodium	**295 J**	**393 J**	**239 J**	-	-	**471 J**	-	**585 J**	**404 J**	**344 J**	**570 J**	-	-	**433 J**
Thallium	0.500 U	0.500 U	0.500 U	-	-	0.500 U	-	0.500 U	0.500 U	0.500 U	0.500 U	-	-	0.500 U
Vanadium	**42.2**	**73.0**	**73.0**	-	-	**26.9**	-	**34.3**	**40.9**	**38.3**	**31.5**	-	-	**37.1**
Zinc	**53.6**	**60.4**	**60.4**	-	-	**8,650**	-	**57.9**	**114**	**85.7**	**130**	-	-	**381**
Petroleum Hydrocarbons (mg/kg)														
Diesel Range Organics	-	-	-	-	-	**920**	**132**	**27.4**	**9,780**	**8,700**	**1,880**	**81.9**	**1,900**	**202**
Residual Range Organics	-	-	-	-	-	**2,360**	**342**	**136**	**20,200**	**31,400**	**4,040**	**533**	**2,790**	**951**
Gasoline Range Organics	-	-	-	20.0 UJ	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Herbicides (µg/kg)														
2,4,5-T	-	-	-	20.0 UJ	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
2,4,5-TP (Silvex)	-	-	-	20.0 UJ	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
2,4-D	-	-	-	5.00 UJ	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2,4-DB	-	-	-	20.0 UJ	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Dalapon	-	-	-	80.0 UJ	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U	80.0 U
Dicamba	-	-	-	5.00 UJ	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dichloroprop	-	-	-	15.0 UJ	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U	15.0 U

Table G-1a
Data Not Used in the RI - 1998 Landfill Site Inspection Soil Analytical Results
PCB Aroclors, Metals, Petroleum Hydrocarbons, Herbicides, and Pesticides
(Page 2 of 2)

Site ID	BK1-01	BK2-01	BK3-01	MW-01	PW1-01	TP1-01	TP2-01	TP4-01	TP5-01	TP5-01 DUP	TP6-01	TP6-02	TP7-01	TP8-01
Sample ID	BK1-SS-01	BK2-SS-01	BK3-SS-01	SB1-SS-01	PW1-SS-01	TP1-SS-01	TP2-SS-01	TP4-SS-01	TP5-SS-01	TP9-SS-01	TP6-SS-01	TP6-SS-02	TP7-SS-01	TP8-SS-01
Sample Date	8/18/1998	8/18/1998	8/18/1998	8/17/1998	8/19/1998	8/19/1998	8/19/1998	8/19/1998	8/20/1998	8/20/1998	8/20/1998	8/20/1998	8/20/1998	8/20/1998
Sample Depth (Feet bgs)	0.5	0.5	0.5	20	1	10	2	3.7	5	5	4	6.5	4.5	4
Dinoseb	-	-	-	45.0 UJ	45.0 U	45.0 U	45.0 U	**51.2**	10.0 U	10.0 U	10.0 U	45.0 U	10.0 U	10.0 U
MCPA	-	-	-	750 UJ	750 U	750 U	750 U	750 U	750 U	750 U	750 U	750 U	750 U	750 U
MCPP	-	-	-	750 UJ	750 U	750 U	750 U	750 U	750 U	750 U	750 U	750 U	750 U	750 U
Pesticides (µg/kg)														
4,4'-DDD	-	-	-	1.00 UJ	2.29 UJ	**3,060**	11.0 UJ	1.00 UJ	21.0 UJ	21.0 UJ	21.0 UJ	1.00 UJ	51.0 UJ	1.00 UJ
4,4'-DDE	-	-	-	1.00 UJ	3.05 UJ	**1,830**	11.0 UJ	1.00 UJ	21.0 UJ	21.0 UJ	21.0 UJ	1.00 UJ	51.0 UJ	1.00 UJ
4,4'-DDT	-	-	-	1.00 UJ	**4.36 J**	**9,520 J**	11.0 UJ	1.00 UJ	21.0 UJ	21.0 UJ	21.0 UJ	1.00 UJ	51.0 UJ	1.00 UJ
Aldrin	-	-	-	1.00 UJ	1.00 UJ	21.0 UJ	11.0 UJ	1.00 UJ	21.0 UJ	21.0 UJ	21.0 UJ	1.00 UJ	51.0 UJ	1.00 UJ
BHC (alpha)	-	-	-	0.500 UJ	0.500 UJ	10.5 UJ	5.50 UJ	0.500 UJ	10.5 UJ	10.5 UJ	10.5 UJ	0.500 UJ	25.5 UJ	0.500 UJ
BHC (beta)	-	-	-	0.900 UJ	0.900 UJ	18.9 UJ	9.90 UJ	0.900 UJ	18.9 UJ	18.9 UJ	18.9 UJ	0.900 UJ	45.9 UJ	0.900 UJ
BHC (delta)	-	-	-	0.600 UJ	0.600 UJ	12.6 UJ	6.60 UJ	0.600 UJ	12.6 UJ	12.6 UJ	12.6 UJ	0.600 UJ	30.6 UJ	0.600 UJ
BHC (gamma) Lindane	-	-	-	1.00 UJ	1.00 UJ	21.0 UJ	11.0 UJ	1.00 UJ	21.0 UJ	21.0 UJ	21.0 UJ	1.00 UJ	51.0 UJ	1.00 UJ
Chlordane (alpha)	-	-	-	0.800 UJ	0.800 UJ	16.8 UJ	8.80 UJ	0.800 UJ	16.8 UJ	16.8 UJ	16.8 UJ	0.800 UJ	40.8 UJ	0.800 UJ
Chlordane (gamma)	-	-	-	0.700 UJ	0.700 UJ	14.7 UJ	7.70 UJ	0.700 UJ	14.7 UJ	14.7 UJ	14.7 UJ	0.700 UJ	35.7 UJ	0.700 UJ
Chlordane (technical)	-	-	-	1.00 UJ	1.00 UJ	21.0 UJ	11.0 UJ	1.00 UJ	21.0 UJ	21.0 UJ	21.0 UJ	1.00 UJ	51.0 UJ	1.00 UJ
Dieldrin	-	-	-	2.00 UJ	2.00 UJ	42.0 UJ	22.0 UJ	2.00 UJ	42.0 UJ	42.0 UJ	42.0 UJ	2.00 UJ	102 UJ	2.00 UJ
Endosulfan I	-	-	-	1.00 UJ	1.00 UJ	21.0 UJ	11.0 UJ	1.00 UJ	21.0 UJ	21.0 UJ	21.0 UJ	1.00 UJ	51.0 UJ	1.00 UJ
Endosulfan II	-	-	-	2.00 UJ	2.00 UJ	42.0 UJ	22.0 UJ	2.00 UJ	42.0 UJ	42.0 UJ	42.0 UJ	2.00 UJ	102 UJ	2.00 UJ
Endosulfan Sulfate	-	-	-	1.00 UJ	1.00 UJ	21.0 UJ	11.0 UJ	1.00 UJ	21.0 UJ	21.0 UJ	21.0 UJ	1.00 UJ	51.0 UJ	1.00 UJ
Endrin	-	-	-	2.00 UJ	2.00 UJ	42.0 UJ	22.0 UJ	2.00 UJ	42.0 UJ	42.0 UJ	42.0 UJ	2.00 UJ	102 UJ	2.00 UJ
Endrin Aldehyde	-	-	-	2.00 UJ	2.00 UJ	42.0 UJ	22.0 UJ	2.00 UJ	42.0 UJ	42.0 UJ	42.0 UJ	2.00 UJ	102 UJ	2.00 UJ
Heptachlor	-	-	-	1.00 UJ	1.00 UJ	21.0 UJ	11.0 UJ	1.00 UJ	21.0 UJ	21.0 UJ	21.0 UJ	1.00 UJ	51.0 UJ	1.00 UJ
Heptachlor Epoxide	-	-	-	1.00 UJ	1.00 UJ	21.0 UJ	11.0 UJ	1.00 UJ	21.0 UJ	21.0 UJ	21.0 UJ	1.00 UJ	**85.1 J**	1.00 UJ
Methoxychlor	-	-	-	4.00 UJ	4.00 UJ	84.0 UJ	44.0 UJ	4.00 UJ	84.0 UJ	84.0 UJ	84.0 UJ	4.00 UJ	204 UJ	4.00 UJ
Toxaphene	-	-	-	50.0 UJ	50.0 UJ	1,050 UJ	550 UJ	50.0 UJ	1,050 UJ	1,050 UJ	1,050 UJ	50.0 UJ	2,550 UJ	50.0 UJ

Notes:

µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.

J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-1b
Data Not Used in the RI - 1998 Landfill Site Inspection Soil Analytical Results
Volatile Organic Compounds
(Page 1 of 2)

Site ID	MW-01	PW1-01	TP1-01	TP2-01	TP4-01
Sample ID	SB1-SS-01	PW1-SS-01	TP1-SS-01	TP2-SS-01	TP4-SS-01
Sample Date	8/17/1998	8/19/1998	8/19/1998	8/19/1998	8/19/1998
Sample Depth (Feet bgs)	20	1	10	2	3.7
Volatile Organic Compounds (µg/kg)					
1,1,1,2-Tetrachloroethane	100 UJ	100 U	100 UJ	100 U	100 U
1,1,1-Trichloroethane (TCA)	100 UJ	100 U	100 UJ	100 U	100 U
1,1,2,2-Tetrachloroethane	100 UJ	100 U	100 UJ	100 U	100 U
1,1,2-Trichloroethane	100 UJ	100 U	100 UJ	100 U	100 U
1,1-Dichloroethane	100 UJ	100 U	100 UJ	100 U	100 U
1,1-Dichloroethene	100 UJ	100 U	100 UJ	100 U	100 U
1,1-Dichloropropene	100 UJ	100 U	100 UJ	100 U	100 U
1,2,3-Trichlorobenzene	100 UJ	100 U	100 UJ	100 U	100 U
1,2,3-Trichloropropane	100 UJ	100 U	100 UJ	100 U	100 U
1,2,4-Trichlorobenzene	100 UJ	100 U	100 UJ	100 U	100 U
1,2,4-Trimethylbenzene	100 UJ	100 U	100 UJ	100 U	100 U
1,2-Dibromo-3-chloropropane	1,000 UJ	1,000 U	1,000 UJ	1,000 U	1,000 U
1,2-Dibromoethane (EDB)	100 UJ	100 U	100 UJ	100 U	100 U
1,2-Dichlorobenzene	100 UJ	100 U	100 UJ	100 U	100 U
1,2-Dichloroethane (EDC)	100 UJ	100 U	100 UJ	100 U	100 U
1,2-Dichloropropane	100 UJ	100 U	100 UJ	100 U	100 U
1,3,5-Trimethylbenzene	100 UJ	100 U	100 UJ	100 U	100 U
1,3-Dichlorobenzene	100 UJ	100 U	100 UJ	100 U	100 U
1,3-Dichloropropane	100 UJ	100 U	100 UJ	100 U	100 U
1,4-Dichlorobenzene	100 UJ	100 U	100 UJ	100 U	100 U
2,2-Dichloropropane	100 UJ	100 U	100 UJ	100 U	100 U
2-Butanone (MEK)	2,000 UJ	2,000 U	2,000 UJ	2,000 U	2,000 U
2-Chlorotoluene	100 UJ	100 U	100 UJ	100 U	100 U
2-Hexanone	2,000 UJ	2,000 U	2,000 UJ	2,000 U	2,000 U
4-Chlorotoluene	100 UJ	100 U	100 UJ	100 U	100 U
4-Isopropyltoluene	100 UJ	100 U	100 UJ	100 U	100 U
4-Methyl-2-pentanone (MIBK)	2,000 UJ	2,000 U	2,000 UJ	2,000 U	2,000 U
Acetone	2,000 UJ	2,000 U	2,000 UJ	2,000 U	2,000 U
Benzene	100 UJ	100 U	100 UJ	100 U	100 U
Bromobenzene	100 UJ	100 U	100 UJ	100 U	100 U
Bromochloromethane	100 UJ	100 U	100 UJ	100 U	100 U
Bromodichloromethane	100 UJ	100 U	100 UJ	100 U	100 U
Bromoform	100 UJ	100 U	100 UJ	100 U	100 U
Bromomethane	100 UJ	100 U	100 UJ	100 U	100 U
Carbon Disulfide	100 UJ	100 U	100 UJ	100 U	100 U
Carbon Tetrachloride	100 UJ	100 U	100 UJ	100 U	100 U
Chlorobenzene	100 UJ	100 U	100 UJ	100 U	100 U
Chloroethane	100 UJ	100 U	100 UJ	100 U	100 U
Chloroform	100 UJ	100 U	100 UJ	100 U	100 U
Chloromethane	500 UJ	500 U	500 UJ	500 U	500 U
cis-1,2-Dichloroethene	100 UJ	100 U	100 UJ	100 U	100 U
cis-1,3-Dichloropropene	100 UJ	100 U	100 UJ	100 U	100 U
Dibromochloromethane	100 UJ	100 U	100 UJ	100 U	100 U
Dibromomethane	100 UJ	100 U	100 UJ	100 U	100 U
Dichlorodifluoromethane	100 UJ	100 U	100 UJ	100 U	100 U
Dichloromethane (Methylene Chloride)	100 UJ	100 U	1,000 UJ	100 U	100 U
Ethylbenzene	100 UJ	100 U	100 UJ	100 U	100 U
Hexachlorobutadiene	100 UJ	100 U	100 UJ	100 U	100 U
Isopropylbenzene	100 UJ	100 U	100 UJ	100 U	100 U
m,p-Xylenes	200 UJ	200 U	200 UJ	200 U	200 U
Naphthalene	100 UJ	100 U	100 UJ	100 U	100 U
n-Butylbenzene	100 UJ	100 U	100 UJ	100 U	100 U
n-Propylbenzene	100 UJ	100 U	100 UJ	100 U	100 U
o-Xylene	100 UJ	100 U	100 UJ	100 U	100 U
sec-Butylbenzene	100 UJ	100 U	100 UJ	100 U	100 U
Styrene	100 UJ	100 U	100 UJ	100 U	100 U
tert-Butylbenzene	100 UJ	100 U	100 UJ	100 U	100 U
Tetrachloroethene (PCE)	100 UJ	100 U	100 UJ	100 U	100 U
Toluene	100 UJ	100 U	100 UJ	100 U	100 U
trans-1,2-Dichloroethene	100 UJ	100 U	100 UJ	100 U	100 U
trans-1,3-Dichloropropene	100 UJ	100 U	100 UJ	100 U	100 U
Trichloroethene (TCE)	100 UJ	100 U	100 UJ	100 U	100 U
Trichlorofluoromethane	100 UJ	100 U	100 UJ	100 U	100 U
Vinyl Chloride	100 UJ	100 U	100 UJ	100 U	100 U

Notes:

µg/kg = microgram per kilogram
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MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
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Table G-1b
Data Not Used in the RI - 1998 Landfill Site Inspection Soil Analytical Results
Volatile Organic Compounds
(Page 2 of 2)

Site ID	TP5-01	TP5-01 DUP	TP6-01	TP6-02	TP7-01	TP8-01
Sample ID	TP5-SS-01	TP9-SS-01	TP6-SS-01	TP6-SS-02	TP7-SS-01	TP8-SS-01
Sample Date	8/20/1998	8/20/1998	8/20/1998	8/20/1998	8/20/1998	8/20/1998
Sample Depth (Feet bgs)	5	5	4	6.5	4.5	4
Volatile Organic Compounds (µg/kg)						
1,1,1,2-Tetrachloroethane	100 U	100 U	100 U	100 U	100 U	100 U
1,1,1-Trichloroethane (TCA)	100 U	100 U	100 U	100 U	100 U	100 U
1,1,2,2-Tetrachloroethane	100 U	100 U	100 U	100 U	100 U	100 U
1,1,2-Trichloroethane	100 U	100 U	100 U	100 U	100 U	100 U
1,1-Dichloroethane	**112**	100 U	100 U	100 U	100 U	100 U
1,1-Dichloroethene	100 U	100 U	100 U	100 U	100 U	100 U
1,1-Dichloropropene	100 U	100 U	100 U	100 U	100 U	100 U
1,2,3-Trichlorobenzene	100 U	100 U	100 U	100 U	100 U	100 U
1,2,3-Trichloropropane	100 U	100 U	100 U	100 U	100 U	100 U
1,2,4-Trichlorobenzene	100 U	100 U	100 U	100 U	100 U	100 U
1,2,4-Trimethylbenzene	**1,460**	**448**	100 U	100 U	100 U	100 U
1,2-Dibromo-3-chloropropane	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U
1,2-Dibromoethane (EDB)	100 U	100 U	100 U	100 U	100 U	100 U
1,2-Dichlorobenzene	100 U	100 U	100 U	100 U	100 U	100 U
1,2-Dichloroethane (EDC)	100 U	100 U	100 U	100 U	100 U	100 U
1,2-Dichloropropane	100 U	100 U	100 U	100 U	100 U	100 U
1,3,5-Trimethylbenzene	**570**	**189**	100 U	100 U	100 U	100 U
1,3-Dichlorobenzene	100 U	100 U	100 U	100 U	100 U	100 U
1,3-Dichloropropane	100 U	100 U	100 U	100 U	100 U	100 U
1,4-Dichlorobenzene	100 U	100 U	100 U	100 U	100 U	100 U
2,2-Dichloropropane	100 U	100 U	100 U	100 U	100 U	100 U
2-Butanone (MEK)	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U
2-Chlorotoluene	100 U	100 U	100 U	100 U	100 U	100 U
2-Hexanone	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U
4-Chlorotoluene	100 U	100 U	100 U	100 U	100 U	100 U
4-Isopropyltoluene	**314**	100 U	100 U	100 U	100 U	100 U
4-Methyl-2-pentanone (MIBK)	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U
Acetone	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U
Benzene	100 U	100 U	100 U	100 U	100 U	100 U
Bromobenzene	100 U	100 U	100 U	100 U	100 U	100 U
Bromochloromethane	100 U	100 U	100 U	100 U	100 U	100 U
Bromodichloromethane	100 U	100 U	100 U	100 U	100 U	100 U
Bromoform	100 U	100 U	100 U	100 U	100 U	100 U
Bromomethane	100 U	100 U	100 U	100 U	100 U	100 U
Carbon Disulfide	100 U	100 U	100 U	100 U	100 U	100 U
Carbon Tetrachloride	100 U	100 U	100 U	100 U	100 U	100 U
Chlorobenzene	100 U	100 U	100 U	100 U	100 U	100 U
Chloroethane	100 U	100 U	100 U	100 U	100 U	100 U
Chloroform	100 U	100 U	100 U	100 U	100 U	100 U
Chloromethane	500 U	500 U	500 U	500 U	500 U	500 U
cis-1,2-Dichloroethene	100 U	100 U	100 U	100 U	100 U	100 U
cis-1,3-Dichloropropene	100 U	100 U	100 U	100 U	100 U	100 U
Dibromochloromethane	100 U	100 U	100 U	100 U	100 U	100 U
Dibromomethane	100 U	100 U	100 U	100 U	100 U	100 U
Dichlorodifluoromethane	100 U	100 U	100 U	100 U	100 U	100 U
Dichloromethane (Methylene Chloride)	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U
Ethylbenzene	**228**	100 U	100 U	100 U	100 U	100 U
Hexachlorobutadiene	100 U	100 U	100 U	100 U	100 U	100 U
Isopropylbenzene	100 U	100 U	100 U	100 U	100 U	100 U
m,p-Xylenes	**631**	200 U	200 U	200 U	200 U	200 U
Naphthalene	**333**	**135**	**139**	100 U	100 U	100 U
n-Butylbenzene	**422**	**146**	100 U	100 U	100 U	100 U
n-Propylbenzene	**172**	100 U	100 U	100 U	100 U	100 U
o-Xylene	**269**	100 U	100 U	100 U	100 U	100 U
sec-Butylbenzene	**142**	100 U	100 U	100 U	100 U	100 U
Styrene	100 U	100 U	100 U	100 U	100 U	100 U
tert-Butylbenzene	100 U	100 U	100 U	100 U	100 U	100 U
Tetrachloroethene (PCE)	100 U	100 U	100 U	100 U	**2,120**	**1,340**
Toluene	**1,360**	**1,120**	100 U	100 U	100 U	100 U
trans-1,2-Dichloroethene	100 U	100 U	100 U	100 U	100 U	100 U
trans-1,3-Dichloropropene	100 U	100 U	100 U	100 U	100 U	100 U
Trichloroethene (TCE)	100 U	100 U	100 U	100 U	100 U	100 U
Trichlorofluoromethane	100 U	100 U	100 U	100 U	100 U	100 U
Vinyl Chloride	100 U	100 U	100 U	100 U	100 U	100 U

Notes:

µg/kg = microgram per kilogram
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-1c
Data Not Used in the RI - 1998 Landfill Site Inspection Soil Analytical Results
Semivolatile Organic Compounds
(Page 1 of 2)

Site ID	MW-01	PW1-01	TP1-01	TP2-01	TP4-01
Sample ID	SB1-SS-01	PW1-SS-01	TP1-SS-01	TP2-SS-01	TP4-SS-01
Sample Date	8/17/1998	8/19/1998	8/19/1998	8/19/1998	8/19/1998
Sample Depth (Feet bgs)	20	1	10	2	3.7
Semivolatile Organic Compounds (µg/kg)					
1,2,4-Trichlorobenzene	100 UJ	100 U	500 U	500 U	100 U
1,2-Dichlorobenzene	100 UJ	100 U	500 U	500 U	100 U
1,3-Dichlorobenzene	100 UJ	100 U	500 U	500 U	100 U
1,4-Dichlorobenzene	100 UJ	100 U	500 U	500 U	100 U
2,4,5-Trichlorophenol	500 UJ	500 U	2,500 U	2,500 U	500 U
2,4,6-Trichlorophenol	100 UJ	100 U	500 U	500 U	100 U
2,4-Dichlorophenol	100 UJ	100 U	500 U	500 U	100 U
2,4-Dimethylphenol	100 UJ	100 U	500 U	500 U	100 U
2,4-Dinitrophenol	500 UJ	500 U	2,500 U	2,500 U	500 U
2,4-Dinitrotoluene	100 UJ	100 U	500 U	500 U	100 U
2,6-Dinitrotoluene	100 UJ	100 U	500 U	500 U	100 U
2-Chloronaphthalene	100 UJ	100 U	500 U	500 U	100 U
2-Chlorophenol	100 UJ	100 U	500 U	500 U	100 U
2-Methylnaphthalene	100 UJ	100 U	500 U	500 U	100 U
2-Methylphenol	100 UJ	100 U	500 U	500 U	100 U
2-Nitroaniline	500 UJ	500 U	2,500 U	2,500 U	500 U
2-Nitrophenol	100 UJ	100 U	500 U	500 U	100 U
3-&4-Methylphenol	100 UJ	100 U	500 U	500 U	100 U
3,3'-Dichlorobenzidine	5,000 UJ	5,000 U	500 U	25,000 U	5,000 U
3-Nitroaniline	500 UJ	500 U	2,500 U	500 U	500 U
4,6-Dinitro-2-methylphenol	500 UJ	500 U	2,500 U	2,500 U	500 U
4-Bromophenyl Phenyl Ether	100 UJ	100 U	500 U	2,500 U	100 U
4-Chloro-3-methylphenol	100 UJ	100 U	500 U	500 U	100 U
4-Chloroaniline	100 UJ	100 U	500 U	500 U	100 U
4-Chlorophenyl Phenyl Ether	100 UJ	100 U	500 U	500 U	100 U
4-Nitroaniline	500 UJ	500 U	2,500 U	2,500 U	500 U
4-Nitrophenol	500 UJ	500 U	2,500 U	2,500 U	500 U
Acenaphthene	100 UJ	100 U	500 U	500 U	100 U
Acenaphthylene	100 UJ	100 U	500 U	500 U	100 U
Aniline	100 UJ	100 U	500 U	500 U	100 U
Anthracene	100 UJ	100 U	500 U	500 U	100 U
Benzo(a)anthracene	100 UJ	100 U	500 U	**1,720**	**111**
Benzo(a)pyrene	100 UJ	100 U	500 U	**2,050**	100 U
Benzo(b)fluoranthene	100 UJ	100 U	500 U	**2,880**	**132**
Benzo(g,h,i)perylene	100 UJ	100 U	500 U	**1,400**	100 U
Benzo(k)fluoranthene	100 UJ	100 U	500 U	**890**	100 U
Benzoic Acid	500 UJ	500 U	**2,500**	2,500 U	100 U
Benzyl Alcohol	100 UJ	100 U	500 U	500 U	100 U
Bis(2-chloroethoxy)methane	100 UJ	100 U	500 U	500 U	100 U
Bis(2-chloroethyl) Ether	100 UJ	100 U	500 U	500 U	100 U
Bis(2-chloroisopropyl) Ether	100 UJ	100 U	500 U	500 U	100 U
Bis(2-ethylhexyl) Phthalate	500 UJ	500 U	2,500 U	2,500 U	500 U
Butyl Benzyl Phthalate	100 UJ	100 U	500 U	500 U	100 U
Carbazole	500 UJ	500 U	2,500 U	2,500 U	500 U
Chrysene	100 UJ	100 U	500 U	**1,790**	**130**
Dibenz(a,h)anthracene	100 UJ	100 U	500 U	500 U	100 U
Dibenzofuran	100 UJ	100 U	500 U	500 U	100 U
Diethyl Phthalate	100 UJ	100 U	500 U	500 U	100 U
Dimethyl Phthalate	100 UJ	100 U	500 U	500 U	100 U
Di-n-butyl Phthalate	500 UJ	500 U	2,500 U	2,500 U	500 U
Di-n-octyl Phthalate	500 UJ	500 U	2,500 U	2,500 U	500 U
Fluoranthene	100 UJ	100 U	500 U	**2,480**	**164**
Fluorene	100 UJ	100 U	500 U	500 U	100 U
Hexachlorobenzene	100 UJ	100 U	500 U	500 U	100 U
Hexachlorobutadiene	100 UJ	100 U	500 U	500 U	100 U
Hexachlorocyclopentadiene	100 UJ	100 U	500 U	500 U	100 U
Hexachloroethane	100 UJ	100 U	500 U	500 U	100 U
Indeno(1,2,3-cd)pyrene	100 UJ	100 U	500 U	**1,560**	100 U
Isophorone	100 UJ	100 U	500 U	500 U	100 U
Naphthalene	100 UJ	100 U	500 U	500 U	100 U
Nitrobenzene	100 UJ	100 U	500 U	500 U	100 U
N-Nitrosodi-n-propylamine	100 UJ	100 U	500 U	500 U	100 U
N-Nitrosodiphenylamine	200 UJ	200 U	1,000 U	1,000 U	200 U
Pentachlorophenol	500 UJ	500 U	2,500 U	2,500 U	500 U
Phenanthrene	100 UJ	100 U	500 U	**709**	100 U
Phenol	100 UJ	100 U	500 U	500 U	100 U
Pyrene	100 UJ	100 U	500 U	**4,050**	**222**

Notes:

µg/kg = microgram per kilogram
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MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-1c
Data Not Used in the RI - 1998 Landfill Site Inspection Soil Analytical Results
Semivolatile Organic Compounds
(Page 2 of 2)

Site ID	TP5-01	TP5-01 DUP	TP6-01	TP6-02	TP7-01	TP8-01
Sample ID	TP5-SS-01	TP9-SS-01	TP6-SS-01	TP6-SS-02	TP7-SS-01	TP8-SS-01
Sample Date	8/20/1998	8/20/1998	8/20/1998	8/20/1998	8/20/1998	8/20/1998
Sample Depth (Feet bgs)	5	5	4	6.5	4.5	4
Semivolatile Organic Compounds (µg/kg)						
1,2,4-Trichlorobenzene	2,500 UJ	2,500 UJ	500 UJ	500 U	10,000 UJ	2,500 U
1,2-Dichlorobenzene	2,500 UJ	2,500 UJ	500 UJ	500 U	10,000 UJ	2,500 U
1,3-Dichlorobenzene	2,500 UJ	2,500 UJ	500 UJ	500 U	10,000 UJ	2,500 U
1,4-Dichlorobenzene	2,500 UJ	2,500 UJ	500 UJ	500 U	10,000 UJ	2,500 U
2,4,5-Trichlorophenol	12,500 UJ	12,500 UJ	25,000 UJ	2,500 U	50,000 UJ	12,500 U
2,4,6-Trichlorophenol	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
2,4-Dichlorophenol	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
2,4-Dimethylphenol	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
2,4-Dinitrophenol	12,500 UJ	12,500 UJ	25,000 UJ	2,500 U	50,000 UJ	12,500 U
2,4-Dinitrotoluene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
2,6-Dinitrotoluene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
2-Chloronaphthalene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
2-Chlorophenol	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
2-Methylnaphthalene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
2-Methylphenol	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
2-Nitroaniline	12,500 UJ	12,500 UJ	25,000 UJ	2,500 U	50,000 UJ	12,500 U
2-Nitrophenol	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
3-&4-Methylphenol	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
3,3'-Dichlorobenzidine	125,000 UJ	125,000 UJ	250,000 UJ	25,000 U	500,000 UJ	125,000 U
3-Nitroaniline	12,500 UJ	12,500 UJ	25,000 UJ	500 U	50,000 UJ	12,500 U
4,6-Dinitro-2-methylphenol	12,500 UJ	12,500 UJ	25,000 UJ	2,500 U	50,000 UJ	12,500 U
4-Bromophenyl Phenyl Ether	2,500 UJ	2,500 UJ	5,000 UJ	2,500 U	10,000 UJ	2,500 U
4-Chloro-3-methylphenol	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
4-Chloroaniline	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
4-Chlorophenyl Phenyl Ether	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
4-Nitroaniline	12,500 UJ	12,500 UJ	25,000 UJ	2,500 U	50,000 UJ	12,500 U
4-Nitrophenol	12,500 UJ	12,500 UJ	25,000 UJ	2,500 U	50,000 UJ	12,500 U
Acenaphthene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Acenaphthylene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Aniline	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Anthracene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	**11,000 J**	2,500 U
Benzo(a)anthracene	2,500 UJ	2,500 UJ	**6,310 J**	500 U	**84,300 J**	2,500 U
Benzo(a)pyrene	2,500 UJ	2,500 UJ	**6,030 J**	500 U	**103,000 J**	2,500 U
Benzo(b)fluoranthene	2,500 UJ	2,500 UJ	**7,610 J**	500 U	**134,000 J**	2,500 U
Benzo(g,h,i)perylene	2,500 UJ	2,500 UJ	**5,790 J**	500 U	**70,400 J**	2,500 U
Benzo(k)fluoranthene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	**53,400 J**	2,500 U
Benzoic Acid	12,500 UJ	12,500 UJ	25,000 UJ	2,500 U	50,000 UJ	12,500 U
Benzyl Alcohol	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Bis(2-chloroethoxy)methane	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Bis(2-chloroethyl) Ether	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Bis(2-chloroisopropyl) Ether	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Bis(2-ethylhexyl) Phthalate	12,500 UJ	12,500 UJ	25,000 UJ	2,500 U	**73,400 J**	12,500 U
Butyl Benzyl Phthalate	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Carbazole	12,500 UJ	12,500 UJ	25,000 UJ	2,500 U	50,000 UJ	12,500 U
Chrysene	2,500 UJ	2,500 UJ	**6,540 J**	500 U	**89,800 J**	2,500 U
Dibenz(a,h)anthracene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	**19,300 J**	2,500 U
Dibenzofuran	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Diethyl Phthalate	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Dimethyl Phthalate	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Di-n-butyl Phthalate	12,500 UJ	12,500 UJ	25,000 UJ	2,500 U	50,000 UJ	12,500 U
Di-n-octyl Phthalate	12,500 UJ	12,500 UJ	25,000 UJ	2,500 U	50,000 UJ	12,500 U
Fluoranthene	2,500 UJ	2,500 UJ	**10,500 J**	500 U	**136,000 J**	2,500 U
Fluorene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Hexachlorobenzene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Hexachlorobutadiene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Hexachlorocyclopentadiene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Hexachloroethane	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Indeno(1,2,3-cd)pyrene	2,500 UJ	2,500 UJ	**5,190 J**	500 U	**72,900 J**	2,500 U
Isophorone	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Naphthalene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Nitrobenzene	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
N-Nitrosodi-n-propylamine	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
N-Nitrosodiphenylamine	5,000 UJ	5,000 UJ	10,000 UJ	1,000 U	20,000 UJ	5,000 U
Pentachlorophenol	12,500 UJ	12,500 UJ	25,000 UJ	2,500 U	50,000 UJ	12,500 U
Phenanthrene	2,500 UJ	2,500 UJ	**12,800 J**	500 U	**37,500 J**	2,500 U
Phenol	2,500 UJ	2,500 UJ	5,000 UJ	500 U	10,000 UJ	2,500 U
Pyrene	2,500 UJ	2,500 UJ	**15,800 J**	500 U	**268,000 J**	2,500 U

Notes:

µg/kg = microgram per kilogram
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-1d
Data Not Used in the RI - 1998 Landfill Site Inspection Groundwater Analytical Results
PCB Aroclors, Metals, Petroleum Hydrocarbons, Herbicides, and Pesticides

Site ID	MW-02	MW-03	MW-04	MW-04 DUP
Sample ID	MW2-GW-01	MW3-GW-01	MW4-GW-01	MW5-GW-01
Sample Date	9/2/1998	9/1/1998	9/1/1998	9/1/1998
Sample Depth (Feet btc)	29.56	18.21	20.29	20.29
Total PCB Aroclors (µg/L)				
Aroclor 1016	0.100 U	0.100 U	0.100 U	0.100 U
Aroclor 1221	0.100 U	0.100 U	0.100 U	0.100 U
Aroclor 1232	0.100 U	0.100 U	0.100 U	0.100 U
Aroclor 1242	0.100 U	0.100 U	0.100 U	0.100 U
Aroclor 1248	0.100 U	0.100 U	0.100 U	0.100 U
Aroclor 1254	0.100 U	0.100 U	0.100 U	0.100 U
Aroclor 1260	0.100 U	0.100 U	0.100 U	0.100 U
Aroclor 1262	0.100 U	0.100 U	0.100 U	0.100 U
Aroclor 1268	0.100 U	0.100 U	0.100 U	0.100 U
Total PCBs as Aroclors	0.100 U	0.100 U	0.100 U	0.100 U
Total Metals (mg/L)				
Aluminum	**3.48**	**0.107**	**1.46**	**1.63**
Antimony	**0.00108**	0.00100 U	0.00100 U	0.00100 U
Arsenic	**0.00808**	0.00100 U	**0.00228**	**0.00261**
Barium	**0.128**	**0.0233**	**0.264**	**0.249**
Beryllium	0.00100 U	0.00100 U	0.00100 U	0.00100 U
Cadmium	0.00100 U	0.00100 U	0.00100 U	0.00100 U
Calcium	**4.51 J**	**20.7 J**	**72.6 J**	**72.9 J**
Chromium	**0.00351**	**0.00111**	**0.00350**	**0.00345**
Cobalt	**0.00163**	0.00100 U	**0.00553**	**0.00562**
Copper	**0.00567**	**0.00185**	**0.00760**	**0.00730**
Cyanide	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Iron	**4.34**	0.150 U	**11.0**	**8.88**
Lead	**0.00771**	0.00100 U	**0.0123**	**0.0108**
Magnesium	**1.17**	**6.49**	**16.4**	**16.7**
Manganese	**0.0987**	**0.348**	**2.49**	**2.68**
Mercury	0.00100 U	0.00100 U	0.00100 U	0.00100 U
Nickel	**0.00246**	**0.00247**	**0.00939**	**0.00902**
Potassium	**5.15**	**1.54**	**4.70**	**4.91**
Selenium	**0.00148**	0.00100 U	0.00100 U	0.00100 U
Silver	0.00100 U	0.00100 U	0.00100 U	0.00100 U
Sodium	**49.2**	**0.589**	**9.26**	**10.3**
Thallium	0.00100 U	0.00100 U	0.00100 U	0.00100 U
Vanadium	**0.0119**	0.00100 U	**0.00691**	**0.00663**
Zinc	**0.0268**	0.0100 U	**0.0237**	**0.0238**
Total Petroleum Hydrocarbons (mg/L)				
Diesel Range Organics	**0.502**	0.250 U	**0.332**	**0.340**
Residual Range Organics	0.500 U	0.500 U	0.500 U	0.500 U
Gasoline Range Organics	50.0 U	50.0 U	50.0 U	50.0 U
Total Herbicides (µgL)				
2,4,5-T	1.00 U	1.00 U	1.00 U	1.00 U
2,4,5-TP (Silvex)	1.00 U	1.00 U	1.00 U	1.00 U
2,4-D	0.500 U	0.500 U	0.500 U	0.500 U
2,4-DB	1.00 U	1.00 U	1.00 U	1.00 U
Dalapon	1.50 U	1.50 U	1.50 U	1.50 U
Dicamba	0.500 U	0.500 U	0.500 U	0.500 U
Dichloroprop	1.00 U	1.00 U	1.00 U	1.00 U
Dinoseb	1.00 U	1.00 U	1.00 U	1.00 U
MCPA	50.0 U	50.0 U	50.0 U	50.0 U
MCPP	50.0 U	50.0 U	50.0 U	50.0 U
Total Pesticides (µg/L)				
4,4'-DDD	0.0400 U	0.0400 U	0.0400 U	0.0400 U
4,4'-DDE	0.0300 U	0.0300 U	0.0300 U	0.0300 U
4,4'-DDT	0.270 U	0.270 U	0.270 U	0.270 U
Aldrin	0.0400 U	0.0400 U	0.0400 U	0.0400 U
BHC (alpha)	0.0200 U	0.0200 U	0.0200 U	0.0200 U
BHC (beta)	0.0300 U	0.0300 U	0.0300 U	0.0300 U
BHC (delta)	0.0200 U	0.0200 U	0.0200 U	0.0200 U
BHC (gamma) Lindane	0.0300 U	0.0300 U	0.0300 U	0.0300 U
Chlordane (alpha)	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Chlordane (gamma)	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Chlordane (technical)	0.150 U	0.150 U	0.150 U	0.150 U
Dieldrin	0.0700 U	0.0700 U	0.0700 U	0.0700 U
Endosulfan I	0.0300 U	0.0300 U	0.0300 U	0.0300 U
Endosulfan II	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Endosulfan Sulfate	0.0700 U	0.0700 U	0.0700 U	0.0700 U
Endrin	0.0800 U	0.0800 U	0.0800 U	0.0800 U
Endrin Aldehyde	0.0800 U	0.0800 U	0.0800 U	0.0800 U
Heptachlor	0.0300 U	0.0300 U	0.0300 U	0.0300 U
Heptachlor Epoxide	0.0300 U	0.0300 U	0.0300 U	0.0300 U
Methoxychlor	0.500 U	0.500 U	0.500 U	0.500 U
Toxaphene	1.50 U	1.50 U	1.50 U	1.50 U

Notes:

btc = below top of well casing
µg/L = microgram per liter
mg/L = milligram per liter
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.

J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-1e
Data Not Used in the RI - 1998 Landfill Site Inspection Groundwater Analytical Results
Volatile Organic Compounds

Site ID	MW-02	MW-03	MW-04	MW-04 DUP
Sample ID	MW2-GW-01	MW3-GW-01	MW4-GW-01	MW5-GW-01
Sample Date	9/2/1998	9/1/1998	9/1/1998	9/1/1998
Sample Depth (Feet btc)	29.56	18.21	20.29	20.29
Total Volatile Organic Compounds (µg/L)				
1,1,1,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane (TCA)	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloroethane	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U
1,2,3-Trichloropropane	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane	5.00 U	5.00 U	5.00 U	5.00 U
1,2-Dibromoethane (EDB)	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane (EDC)	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U
1,3,5-Trimethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U
1,3-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U
1,4-Dichlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U
2,2-Dichloropropane	1.00 U	1.00 U	1.00 U	1.00 U
2-Butanone (MEK)	10.0 U	10.0 U	10.0 U	10.0 U
2-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U
2-Hexanone	10.0 U	10.0 U	10.0 U	10.0 U
4-Chlorotoluene	1.00 U	1.00 U	1.00 U	1.00 U
4-Isopropyltoluene	1.00 U	1.00 U	1.00 U	1.00 U
4-Methyl-2-pentanone (MIBK)	10.0 U	10.0 U	10.0 U	10.0 U
Acetone	10.0 U	10.0 U	10.0 U	10.0 U
Benzene	1.00 U	1.00 U	1.00 U	1.00 U
Bromobenzene	1.00 U	1.00 U	1.00 U	1.00 U
Bromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane	1.00 U	1.00 U	1.00 U	1.00 U
Carbon Disulfide	1.00 U	1.00 U	1.00 U	1.00 U
Carbon Tetrachloride	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	1.00 U	1.00 U	1.00 U	1.00 U
Chloroethane	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	1.00 U	1.00 U	1.00 U	1.00 U
Chloromethane	5.00 U	5.00 U	5.00 U	5.00 U
cis-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U
Dibromochloromethane	1.00 U	1.00 U	1.00 U	1.00 U
Dibromomethane	1.00 U	1.00 U	1.00 U	1.00 U
Dichlorodifluoromethane	1.00 U	1.00 U	1.00 U	1.00 U
Dichloromethane (Methylene Chloride)	5.00 U	5.00 U	5.00 U	5.00 U
Ethylbenzene	1.00 U	1.00 U	1.00 U	1.00 U
Hexachlorobutadiene	1.00 U	1.00 U	1.00 U	1.00 U
Isopropylbenzene	1.00 U	1.00 U	1.00 U	1.00 U
m,p-Xylenes	2.00 U	2.00 U	2.00 U	2.00 U
Naphthalene	1.00 U	1.00 U	1.00 U	1.00 U
n-Butylbenzene	1.00 U	1.00 U	1.00 U	1.00 U
n-Propylbenzene	1.00 U	1.00 U	1.00 U	1.00 U
o-Xylene	1.00 U	1.00 U	1.00 U	1.00 U
sec-Butylbenzene	1.00 U	1.00 U	1.00 U	1.00 U
Styrene	1.00 U	1.00 U	1.00 U	1.00 U
tert-Butylbenzene	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene (PCE)	1.00 U	**6.62**	1.00 U	1.00 U
Toluene	1.00 U	1.00 U	**1.11**	1.00 U
trans-1,2-Dichloroethene	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene (TCE)	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	1.00 U	1.00 U	1.00 U	1.00 U
Vinyl Chloride	1.00 U	1.00 U	1.00 U	1.00 U

Notes:

btc = below top of well casing
µg/L = microgram per liter
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-1f
Data Not Used in the RI - 1998 Landfill Site Inspection Groundwater Analytical Results
Semivolatile Organic Compounds

Site ID	MW-02	MW-03	MW-04	MW-04 DUP
Sample ID	MW2-GW-01	MW3-GW-01	MW4-GW-01	MW5-GW-01
Sample Date	9/2/1998	9/1/1998	9/1/1998	9/1/1998
Sample Depth (Feet btc)	29.56	18.21	20.29	20.29
Semivolatile Organic Compounds (µg/L)				
1,2,4-Trichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U
1,2-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U
1,3-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U
1,4-Dichlorobenzene	5.00 U	5.00 U	5.00 U	5.00 U
2,4,5-Trichlorophenol	10.0 U	10.0 U	10.0 U	10.0 U
2,4,6-Trichlorophenol	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dichlorophenol	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dimethylphenol	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dinitrophenol	10.0 U	10.0 U	10.0 U	10.0 U
2,4-Dinitrotoluene	10.0 U	10.0 U	10.0 U	10.0 U
2,6-Dinitrotoluene	10.0 U	10.0 U	10.0 U	10.0 U
2-Chloronaphthalene	10.0 U	10.0 U	10.0 U	10.0 U
2-Chlorophenol	10.0 U	10.0 U	10.0 U	10.0 U
2-Methylnaphthalene	10.0 U	10.0 U	10.0 U	10.0 U
2-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U
2-Nitroaniline	20.0 U	20.0 U	20.0 U	20.0 U
2-Nitrophenol	5.00 U	5.00 U	5.00 U	5.00 U
3-&4-Methylphenol	10.0 U	10.0 U	10.0 U	10.0 U
3,3'-Dichlorobenzidine	20.0 U	20.0 U	20.0 U	20.0 U
3-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U
4,6-Dinitro-2-methylphenol	10.0 U	10.0 U	10.0 U	10.0 U
4-Bromophenyl Phenyl Ether	10.0 U	10.0 U	10.0 U	10.0 U
4-Chloro-3-methylphenol	10.0 U	10.0 U	10.0 U	10.0 U
4-Chloroaniline	5.00 U	5.00 U	5.00 U	5.00 U
4-Chlorophenyl Phenyl Ether	10.0 U	10.0 U	10.0 U	10.0 U
4-Nitroaniline	10.0 U	10.0 U	10.0 U	10.0 U
4-Nitrophenol	10.0 U	10.0 U	10.0 U	10.0 U
Acenaphthene	10.0 U	10.0 U	10.0 U	10.0 U
Acenaphthylene	10.0 U	10.0 U	10.0 U	10.0 U
Aniline	10.0 U	10.0 U	10.0 U	10.0 U
Anthracene	10.0 U	10.0 U	10.0 U	10.0 U
Benzo(a)anthracene	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(a)pyrene	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(b)fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(g,h,i)perylene	5.00 U	5.00 U	5.00 U	5.00 U
Benzo(k)fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U
Benzoic Acid	20.0 U	20.0 U	20.0 U	20.0 U
Benzyl Alcohol	10.0 U	10.0 U	10.0 U	10.0 U
Bis(2-chloroethoxy)methane	10.0 U	10.0 U	10.0 U	10.0 U
Bis(2-chloroethyl) Ether	10.0 U	10.0 U	10.0 U	10.0 U
Bis(2-chloroisopropyl) Ether	10.0 U	10.0 U	10.0 U	10.0 U
Bis(2-ethylhexyl) Phthalate	20.0 U	20.0 U	20.0 U	20.0 U
Butyl Benzyl Phthalate	5.00 U	5.00 U	5.00 U	5.00 U
Carbazole	10.0 U	10.0 U	10.0 U	10.0 U
Chrysene	5.00 U	5.00 U	5.00 U	5.00 U
Dibenz(a,h)anthracene	5.00 U	5.00 U	5.00 U	5.00 U
Dibenzofuran	10.0 U	10.0 U	10.0 U	10.0 U
Diethyl Phthalate	10.0 U	10.0 U	10.0 U	10.0 U
Dimethyl Phthalate	10.0 U	10.0 U	10.0 U	10.0 U
Di-n-butyl Phthalate	5.00 U	5.00 U	5.00 U	5.00 U
Di-n-octyl Phthalate	5.00 U	5.00 U	5.00 U	5.00 U
Fluoranthene	5.00 U	5.00 U	5.00 U	5.00 U
Fluorene	10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorobenzene	10.0 U	10.0 U	10.0 U	10.0 U
Hexachlorobutadiene	5.00 U	5.00 U	5.00 U	5.00 U
Hexachlorocyclopentadiene	5.00 U	5.00 U	5.00 U	5.00 U
Hexachloroethane	10.0 U	10.0 U	10.0 U	10.0 U
Indeno(1,2,3-cd)pyrene	5.00 U	5.00 U	5.00 U	5.00 U
Isophorone	10.0 U	10.0 U	10.0 U	10.0 U
Naphthalene	10.0 U	10.0 U	10.0 U	10.0 U
Nitrobenzene	10.0 U	10.0 U	10.0 U	10.0 U
N-Nitrosodi-n-propylamine	10.0 U	10.0 U	10.0 U	10.0 U
N-Nitrosodiphenylamine	10.0 U	10.0 U	10.0 U	10.0 U
Pentachlorophenol	10.0 U	10.0 U	10.0 U	10.0 U
Phenanthrene	10.0 U	10.0 U	10.0 U	10.0 U
Phenol	10.0 U	10.0 U	10.0 U	10.0 U
Pyrene	5.00 U	5.00 U	5.00 U	5.00 U

Notes:

btc = below top of well casing
µg/L = microgram per liter
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-2a
Data Not Used in the RI - 2001 In-Water Investigation
Sediment Analytical Results
PCB Aroclors, Metals, Petroleum Hydrocarbons, Herbicides, Pesticides, and General Chemistry Parameters
(Page 1 of 2)

Area	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal
Site ID	IW01	IW02	IW07	IW08	IW13
Sample ID	010502IW01SS	010502IW02SS	010502IW07SS	010502IW08SS	010503IW13SS
Sample Date	5/2/2001	5/2/2001	5/2/2001	5/2/2001	5/3/2001
PCB Aroclors (µg/kg dry)					
Aroclor 1016	10.0 U	12.0 U	10.0 U	14.0 U	13.0 U
Aroclor 1221	21.0 U	12.0 U	21.0 U	14.0 U	13.0 U
Aroclor 1232	10.0 U	12.0 U	10.0 U	14.0 U	13.0 U
Aroclor 1242	10.0 U	12.0 U	10.0 U	14.0 U	13.0 U
Aroclor 1248	10.0 U	12.0 U	10.0 U	14.0 U	13.0 U
Aroclor 1254	10.0 U	**200**	10.0 U	14.0 U	**350**
Aroclor 1260	10.0 U	12.0 U	10.0 U	14.0 U	13.0 U
Metals (mg/kg dry)					
Aluminum	**12,000**	-	**12,000**	-	-
Antimony	0.620 U	-	0.720 U	-	-
Arsenic	**4.30**	-	**2.40**	-	-
Barium	**95.0**	-	**74.0**	-	-
Beryllium	**0.230**	-	**0.240**	-	-
Cadmium	**0.730**	-	**0.620**	-	-
Calcium	**4,400**	-	**7,000**	-	-
Chromium	**17.0**	-	**18.0**	-	-
Cobalt	**9.60**	-	**17.0**	-	-
Copper	**27.0**	-	**50.0**	-	-
Iron	**21,000**	-	**30,000**	-	-
Lead	**7.90**	-	**6.20**	-	-
Magnesium	**6,000**	-	**12,000**	-	-
Manganese	**340**	-	**380**	-	-
Mercury	**0.0650 J**	-	**0.0510 J**	-	-
Nickel	**8.50**	-	**22.0**	-	-
Potassium	**950**	-	**500**	-	-
Selenium	**0.260 J**	-	**0.310 J**	-	-
Silver	**0.140**	-	**0.110 J**	-	-
Thallium	**0.150**	-	**0.170**	-	-
Vanadium	**45.0**	-	**49.0**	-	-
Zinc	**78.0**	-	**92.0**	-	-
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	63.0 U	-	62.0 U	-	-
Residual Range Organics	130 U	-	120 U	-	-
Gasoline Range Organics	25.0 U	-	25.0 U	-	-
Butyltins (µg/kg dry)					
Dibutyltin	-	-	-	-	-
Monobutyltin	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin	-	-	-	-	-
Herbicides (µg/kg dry)					
2,4,5-T	8.30 U	-	8.70 U	-	-
2,4,5-TP (Silvex)	8.30 U	-	8.70 U	-	-
2,4-D	8.30 U	-	8.70 U	-	-
2,4-DB	8.30 U	-	8.70 U	-	-
4-Nitrophenol	8.30 U	-	8.70 U	-	-
Dalapon	8.30 U	-	8.70 U	-	-
Dicamba	8.30 U	-	8.70 U	-	-
Dichloroprop	8.30 U	-	8.70 U	-	-
Dinoseb	8.30 U	-	8.70 U	-	-
MCPA	8.30 U	-	8.70 U	-	-
MCPP	8.30 U	-	8.70 U	-	-
Pentachlorophenol	8.30 U	-	8.70 U	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	2.00 U	-	2.10 U	-	-
4,4'-DDE	2.00 U	-	2.10 U	-	-
4,4'-DDT	**1.70 J**	-	2.10 U	-	-
Aldrin	1.00 U	-	1.00 U	-	-
BHC (alpha)	1.00 U	-	1.00 U	-	-
BHC (beta)	1.00 U	-	1.00 U	-	-
BHC (delta)	1.00 U	-	1.00 U	-	-
BHC (gamma) Lindane	1.00 U	-	1.00 U	-	-
Chlordane (technical)	10.0 U	-	10.0 U	-	-
Dieldrin	2.00 U	-	2.10 U	-	-
Endosulfan I	1.00 U	-	1.00 U	-	-
Endosulfan II	2.00 U	-	2.10 U	-	-
Endosulfan Sulfate	2.00 U	-	2.10 U	-	-
Endrin	2.00 U	-	2.10 U	-	-
Endrin Aldehyde	2.00 U	-	2.10 U	-	-
Endrin Ketone	2.00 U	-	2.10 U	-	-
Heptachlor	1.00 U	-	1.00 U	-	-
Heptachlor Epoxide	1.00 U	-	1.00 U	-	-
Methoxychlor	10.0 U	-	10.0 U	-	-
Toxaphene	100 U	-	100 U	-	-
General Chemistry Parameters and Grain Size(%)					
Carbon, Total Organic	**0.190**	**0.130**	**0.150**	**0.0390**	**0.130**
Gravel (12.5-4.75mm)	-	**38.3**	-	**54.2**	**44.6**
Sand (4.74-03063mm)	-	**61.4**	-	**44.4**	**52.8**
Clay/Silt (<0.063mm)	-	**0.290**	-	**1.37**	**2.60**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.

J = The reported value is an estimate.
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For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-2a
Data Not Used in the RI - 2001 In-Water Investigation
Sediment Analytical Results
PCB Aroclors, Metals, Petroleum Hydrocarbons, Herbicides, Pesticides, and General Chemistry Parameters

Area	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal
Site ID	IW14	IW14 DUP	IW16	IW17
Sample ID	010502IW14SS	010502IW15SS	010502IW16SS	010503IW17SS
Sample Date	5/3/2001	5/3/2001	5/3/2001	5/3/2001
PCB Aroclors (µg/kg dry)				
Aroclor 1016	10.0 U	10.0 U	10.0 U	12.0 U
Aroclor 1221	21.0 U	21.0 U	21.0 U	12.0 U
Aroclor 1232	10.0 U	10.0 U	10.0 U	12.0 U
Aroclor 1242	10.0 U	10.0 U	10.0 U	12.0 U
Aroclor 1248	10.0 U	10.0 U	10.0 U	12.0 U
Aroclor 1254	**510**	**570**	**44.0**	**1,100**
Aroclor 1260	10.0 U	10.0 U	10.0 U	12.0 U
Metals (mg/kg dry)				
Aluminum	**11,000**	**13,000**	**9,500**	-
Antimony	0.700 U	0.730 U	0.700 U	-
Arsenic	**2.40**	**2.70**	**4.30**	-
Barium	**88.0**	**95.0**	**83.0**	-
Beryllium	**0.270**	**0.300**	**0.210**	-
Cadmium	**1.00**	**1.00**	**0.700**	-
Calcium	**4,200**	**6,000**	**5,100**	-
Chromium	**16.0**	**22.0**	**20.0**	-
Cobalt	**8.60**	**13.0**	**12.0**	-
Copper	**27.0**	**37.0**	**32.0**	-
Iron	**18,000**	**24,000**	**25,000**	-
Lead	**9.30**	**9.00**	**12.0**	-
Magnesium	**4,600**	**8,200**	**6,500**	-
Manganese	**380**	**600**	**470**	-
Mercury	**0.0350 J**	0.0250 UJ	**0.0170 J**	-
Nickel	**7.60**	**11.0**	**11.0**	-
Potassium	**1,100**	**1,100**	**750**	-
Selenium	0.700 U	0.730 U	**0.200 J**	-
Silver	**0.160**	**0.180**	**0.130**	-
Thallium	**0.160**	**0.170**	**0.210**	-
Vanadium	**44.0**	**58.0**	**56.0**	-
Zinc	**73.0**	**89.0**	**91.0**	-
Petroleum Hydrocarbons (mg/kg dry)				
Diesel Range Organics	61.0 U	62.0 U	57.0 U	-
Residual Range Organics	120 U	120 U	110 U	-
Gasoline Range Organics	24.0 U	25.0 U	23.0 U	-
Butyltins (µg/kg dry)				
Dibutyltin	-	-	-	-
Monobutyltin	-	-	-	-
Tetrabutyltin	-	-	-	-
Tributyltin	-	-	-	-
Herbicides (µg/kg dry)				
2,4,5-T	8.60 UJ	8.90 UJ	7.70 U	-
2,4,5-TP (Silvex)	8.60 UJ	8.90 UJ	7.70 U	-
2,4-D	8.60 UJ	8.90 UJ	7.70 U	-
2,4-DB	8.60 UJ	8.90 UJ	7.70 U	-
4-Nitrophenol	8.60 UJ	8.90 UJ	7.70 U	-
Dalapon	8.60 UJ	8.90 UJ	7.70 U	-
Dicamba	8.60 UJ	8.90 UJ	7.70 U	-
Dichloroprop	8.60 UJ	8.90 UJ	7.70 U	-
Dinoseb	8.60 UJ	8.90 UJ	7.70 U	-
MCPA	8.60 UJ	8.90 UJ	7.70 U	-
MCPP	8.60 UJ	8.90 UJ	7.70 U	-
Pentachlorophenol	8.60 UJ	8.90 UJ	7.70 U	-
Pesticides (µg/kg dry)				
4,4'-DDD	2.10 U	2.20 U	**0.840 J**	-
4,4'-DDE	2.10 U	2.20 U	**0.500 J**	-
4,4'-DDT	2.10 U	2.20 U	1.80 U	-
Aldrin	1.00 U	1.10 U	0.910 U	-
BHC (alpha)	1.00 U	1.10 U	0.910 U	-
BHC (beta)	1.00 U	1.10 U	0.910 U	-
BHC (delta)	1.00 U	1.10 U	0.910 U	-
BHC (gamma) Lindane	1.00 U	1.10 U	0.910 U	-
Chlordane (technical)	10.0 U	11.0 U	9.10 U	-
Dieldrin	2.10 U	2.20 U	1.80 U	-
Endosulfan I	1.00 U	1.10 U	0.910 U	-
Endosulfan II	2.10 U	2.20 U	1.80 U	-
Endosulfan Sulfate	2.10 U	2.20 U	1.80 U	-
Endrin	2.10 U	2.20 U	1.80 U	-
Endrin Aldehyde	2.10 U	2.20 U	1.80 U	-
Endrin Ketone	2.10 U	2.20 U	1.80 U	-
Heptachlor	1.00 U	1.10 U	0.910 U	-
Heptachlor Epoxide	1.00 U	1.10 U	0.910 U	-
Methoxychlor	10.0 U	11.0 U	9.10 U	-
Toxaphene	100 U	110 U	91.0 U	-
General Chemistry Parameters and Gra				
Carbon, Total Organic	**0.380**	**0.290**	**0.150**	**0.240**
Gravel (12.5-4.75mm)	-	-	-	-
Sand (4.74-03063mm)	-	-	-	-
Clay/Silt (<0.063mm)	-	-	-	-

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.

J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-2b
Data Not Used in the RI - 2001 In-Water Investigation
Sediment Analytical Results
Semivolatile Organic Compounds

Area	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal
Site ID	IW01	IW07	IW14	IW14 DUP	IW16
Sample ID	010502IW01SS	010502IW07SS	010502IW14SS	010502IW15SS	010502IW16SS
Sample Date	5/2/2001	5/2/2001	5/3/2001	5/3/2001	5/3/2001
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
1,2-Dichlorobenzene	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
1,3-Dichlorobenzene	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
1,4-Dichlorobenzene	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
2,4,5-Trichlorophenol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
2,4,6-Trichlorophenol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
2,4-Dichlorophenol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
2,4-Dimethylphenol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
2,4-Dinitrophenol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
2,4-Dinitrotoluene	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
2,6-Dinitrotoluene	**9.50 J**	**9.50 J**	**12.0 J**	**8.70 J**	**10.0 J**
2-Chloronaphthalene	1.60 U	1.70 U	1.70 U	1.70 U	1.60 U
2-Chlorophenol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
2-Methylnaphthalene	8.00 U	8.50 U	8.40 U	8.70 U	**2.30 J**
2-Methylphenol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
2-Nitroaniline	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
2-Nitrophenol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
3,3'-Dichlorobenzidine	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
3-Nitroaniline	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
4,6-Dinitro-2-methylphenol	40.0 U	43.0 U	42.0 U	43.0 U	39.0 U
4-Bromophenyl Phenyl Ether	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
4-Chloro-3-methylphenol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
4-Chloroaniline	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
4-Chlorophenyl Phenyl Ether	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
4-Nitroaniline	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
4-Nitrophenol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Acenaphthene	1.60 U	1.70 U	1.70 U	1.70 U	**4.20**
Acenaphthylene	1.60 U	1.70 U	1.70 U	1.70 U	1.60 U
Anthracene	1.60 U	1.70 U	1.70 U	**2.40**	**12.0**
Benzidine	**15.0 J**	17.0 U	17.0 U	**68.0**	16.0 U
Benzo(a)anthracene	16.0 U	17.0 U	17.0 U	**7.30 J**	**59.0**
Benzo(a)pyrene	8.00 U	8.50 U	8.40 U	**5.40 J**	**78.0**
Benzo(b)fluoranthene	8.00 U	8.50 U	**2.90 J**	**12.0**	**87.0**
Benzo(g,h,i)perylene	8.00 U	8.50 U	8.40 U	**2.80 J**	**30.0**
Benzo(k)fluoranthene	1.60 U	1.70 U	1.70 U	1.70 U	**4.40**
Benzoic Acid	40.0 UJ	43.0 UJ	42.0 UJ	43.0 UJ	39.0 UJ
Benzyl Alcohol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Bis(2-chloroethoxy)methane	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Bis(2-chloroethyl) Ether	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Bis(2-chloroisopropyl) Ether	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Bis(2-ethylhexyl) Phthalate	42.0 U	190 U	140 U	43.0 U	57.0 U
Butyl Benzyl Phthalate	17.0 U	17.0 U	17.0 U	17.0 U	20.0 U
Carbazole	40.0 U	43.0 U	42.0 U	43.0 U	39.0 U
Chrysene	8.00 U	8.50 U	**2.30 J**	**7.10 J**	**58.0**
Dibenz(a,h)anthracene	8.00 U	8.50 U	8.40 U	8.70 U	7.80 U
Dibenzofuran	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Diethyl Phthalate	16.0 U	17.0 U	17.0 U	14.0 U	16.0 U
Dimethyl Phthalate	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Di-n-butyl Phthalate	30.0 U	85.0 U	84.0 U	87.0 U	78.0 U
Di-n-octyl Phthalate	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Fluoranthene	8.00 U	8.50 U	**4.70 J**	**18.0**	**98.0**
Fluorene	1.60 U	1.70 U	1.70 U	1.70 U	**3.30**
Hexachlorobenzene	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Hexachlorobutadiene	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Hexachlorocyclopentadiene	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Hexachloroethane	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Indeno(1,2,3-cd)pyrene	8.00 U	8.50 U	8.40 U	8.70 U	**29.0**
Isophorone	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Naphthalene	8.00 U	8.50 U	8.40 U	8.70 U	7.80 U
Nitrobenzene	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
N-Nitrosodimethylamine	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
N-Nitrosodi-n-propylamine	16.0 U	17.0 U	**42.0**	17.0 U	16.0 U
N-Nitrosodiphenylamine	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
p-cresol (4-Methylphenol)	16.0 U	**3.40 J**	**5.50 J**	**3.50 J**	16.0 U
Pentachlorophenol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Phenanthrene	8.00 U	8.50 U	8.40 U	**7.00 J**	**35.0**
Phenol	16.0 U	17.0 U	17.0 U	17.0 U	16.0 U
Pyrene	8.00 U	8.50 U	**5.20 J**	**19.0**	**100**

Notes:

µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.

J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-2c
Data Not Used in the RI - 2001 In-Water Investigation
Co-located Surface Water and Sediment Analytical Results

Area	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Goose Island Reference area	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal
Site ID	IW03	IW04	IW04 DUP	IW06	IW10	IW11	IW11 DUP
Sample ID	010502IW03WCS/SD	010502IW04WCS/SD	010502IW05WCS	010502IW06WCS/SD	010503IW10WCS/SD	010503IW11WCS/SD	010503IW12WSD
Sample Date	5/2/2001	5/2/2001	5/2/2001	5/2/2001	5/3/2001	5/3/2001	5/3/2001
Water - Dissolved Phase (µg/L)							
Aroclor 1242	0.0326 U	0.0321 U	0.0311 U	0.0320 U	0.0310 U	0.0299 U	-
Aroclor 1248	0.0326 U	0.0321 U	0.0311 U	0.0320 U	0.0310 U	0.0299 U	-
Aroclor 1254	**0.265**	**0.0380 J**	**0.0399**	0.0320 U	0.0310 U	**0.0300**	-
Aroclor 1260	0.0326 U	0.0321 U	0.0311 U	0.0320 U	0.0310 U	0.0299 U	-
Water - Particulate Phase (µg/L)							
Aroclor 1242	0.316 U	0.0316 U	0.0316 U	0.0316 U	0.0316 U	0.0316 U	-
Aroclor 1248	0.316 U	0.0316 U	0.0316 U	0.0316 U	0.0316 U	0.0316 U	-
Aroclor 1254	**7.28**	**0.624**	0.0320 U	**0.132**	0.0320 U	**0.240**	-
Aroclor 1260	0.316 U	0.0316 U	0.0316 U	0.0316 U	0.0316 U	0.0316 U	-
Sediment (µg/kg dry)							
Aroclor 1242	2.08 U	1.97 U	-	1.88 U	2.55 U	2.13 U	2.13 U
Aroclor 1248	2.08 U	1.97 U	-	1.88 U	2.55 U	2.13 U	2.13 U
Aroclor 1254	**23,900 J**	**77.1**	-	**92.0**	**17.5**	**1,240**	**417**
Aroclor 1260	2.08 U	1.97 U	-	1.88 U	2.55 U	2.13 U	2.13 U
Sediment General Chemistry Parameters (%)							
Carbon, Total Organic	**0.150**	**0.0800**	-	**0.190**	**0.470**	**0.420**	**0.230**

Notes:

µg/L = microgram per liter
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-2d
Data Not Used in the RI - 2001 In-Water Investigation
Tissue Analytical Results

Area	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Goose Island Reference area	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Goose Island Reference area	Forebay Pre-Equipment Removal
Site ID	IW02	IW08	IW10	IW13	IW13 DUP	IW02	IW02 DUP	IW08	IW10	IW13
Sample ID	010509IW27TS	010509IW28TS	010509IW29TS	010509IW26TS	010509IE30TS	010502IW23TS	010502IW24TS	010502IW09TS	010502IW21TS	010502IW22TS
Sample Date	5/3/2001	5/2/2001	5/3/2001	5/3/2001	5/3/2001	5/3/2001	5/3/2001	5/2/2001	5/3/2001	5/3/2001
Tissue Type	Crayfish	Crayfish	Crayfish	Crayfish	Crayfish	Clam	Clam	Clam	Clam	Clam
Percent Lipids	5.61	5.74	5.74	6.06	5.54	3.91	4.92	3.33	3.05	3.16
PCB Aroclors (µg/kg wet)										
Aroclor 1242	14.3 U	15.4 U	14.3 U	13.5 U	15.4 U	14.1 U	13.9 U	14.2 U	14.2 U	14.3 U
Aroclor 1248	14.3 U	15.4 U	14.3 U	13.5 U	15.4 U	14.1 U	13.9 U	14.2 U	14.2 U	14.3 U
Aroclor 1254	**11,900**	**75,600 J**	**268**	**2,670**	**3,970**	**345**	**451**	**604**	**23.8**	**344**
Aroclor 1260	14.3 U	15.4 U	14.3 U	13.5 U	15.4 U	14.1 U	13.9 U	14.2 U	14.2 U	14.3 U

Notes:

µg/kg = microgram per kilogram
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-2e
Data Not Used in the RI - 2001 In-Water Investigation
Sandblast Area Storm Drain System Analytical Results
PCB Aroclors, Metals, Petroleum Hydrocarbons, and Butyltins

Area	Sandblast	Sandblast	Sandblast	Sandblast	Sandblast	Sandblast	Sandblast	Sandblast
Site ID	SBDS-18	SBDS-19	SBDS-24	SBMS-1	SBMS-1 DUP	SBDS-18	SBDS-19	SBDS-19 DUP
Sample ID	010503SBDS18SD	010503SBDS19SD	010504SBDS24SD	010501SBMS1SD	010501SBMS2SD	010503SBDS18PW	010503SBDS19PW	010503SBDS20PW
Sample Date	5/3/2001	5/3/2001	5/4/2001	5/1/2001	5/1/2001	5/3/2001	5/3/2001	5/3/2001
Sample Medium	River Sediment at Outfall	River Sediment at Outfall	Catchbasin Solids	Catchbasin Solids	Catchbasin Solids	Sediment Pore Water	Sediment Pore Water	Sediment Pore Water
PCB Aroclors (µg/kg dry)								
Aroclor 1016	13.0 U	13.0 U	26.0 U	14.0 U	12.0 U	-	-	-
Aroclor 1221	13.0 U	13.0 U	26.0 U	14.0 U	12.0 U	-	-	-
Aroclor 1232	13.0 U	13.0 U	26.0 U	14.0 U	12.0 U	-	-	-
Aroclor 1242	13.0 U	13.0 U	26.0 U	14.0 U	12.0 U	-	-	-
Aroclor 1248	13.0 U	13.0 U	26.0 U	14.0 U	12.0 U	-	-	-
Aroclor 1254	13.0 U	13.0 U	26.0 U	14.0 U	12.0 U	-	-	-
Aroclor 1260	**17.0**	**95.0**	**18.0 J**	14.0 U	**57.0**	-	-	-
Metals (mg/kg dry)								
Aluminum	**11,000**	**6,200**	**16,000**	**9,500**	**7,000**	-	-	-
Antimony	0.920 U	0.970 U	1.50 U	**1.20**	**2.20**	-	-	-
Arsenic	**7.40**	**7.00**	**6.10**	**3.60**	**11.0**	-	-	-
Barium	**89.0**	**50.0**	**100**	**76.0**	**32.0**	-	-	-
Beryllium	**0.240**	**0.0860 J**	**0.380**	**0.140**	**0.110 J**	-	-	-
Cadmium	**1.10**	**1.30**	**1.40**	**1.60**	**1.10**	-	-	-
Calcium	**6,100**	**4,200**	**7,500**	**4,000**	**3,400**	-	-	-
Chromium	**74.0 J**	**980 J**	**130**	**87.0 J**	**310 J**	-	-	-
Cobalt	**12.0**	**25.0**	**18.0**	**11.0**	**10.0**	-	-	-
Copper	**110**	**40.0**	**200**	**43.0**	**36.0**	-	-	-
Iron	**26,000**	**32,000**	**37,000**	**28,000**	**24,000**	-	-	-
Lead	**230 J**	**130 J**	**250**	**630 J**	**240 J**	-	-	-
Magnesium	**6,300**	**33,000**	**9,000**	**6,000**	**11,000**	-	-	-
Manganese	**460 J**	**770 J**	**540**	**510 J**	**380**	-	-	-
Mercury	0.0220 U	**0.0210 J**	**0.0340 J**	**0.0630**	**0.170**	-	-	-
Nickel	**26.0**	**630**	**53.0**	**33.0**	**94.0**	-	-	-
Potassium	**1,000**	**340 J**	**1,100**	**450 J**	**300 J**	-	-	-
Selenium	0.770 U	**0.190 J**	1.50 U	0.720 U	**0.390 J**	-	-	-
Silver	**0.580**	**0.0990 J**	**0.420**	**0.260**	**0.110 J**	-	-	-
Thallium	**0.150**	**0.0720 J**	**0.540**	**0.0320 J**	**0.0470 J**	-	-	-
Vanadium	**51.0**	**21.0**	**94.0**	**50.0**	**30.0**	-	-	-
Zinc	**180**	**310**	**220**	**180**	**150**	-	-	-
Petroleum Hydrocarbons (mg/kg dry)								
Diesel Range Organics	**40**	**40**	**180**	**130**	**95**	-	-	-
Residual Range Organics	**410**	**170**	**1400**	**600**	**410**	-	-	-
Butyltins (µg/kg dry)						**Total Butyltins (µg/L)**		
Dibutyltin	**2.00 J**	**9.60**	**310**	2.70 U	2.60 U	**0.0820**	0.0200 U	0.0200 U
Monobutyltin	3.40 U	**6.10**	**110**	3.60 U	3.50 U	**0.570**	0.0200 U	0.0200 U
Tetrabutyltin	1.70 U	3.00 U	30.0 U	1.80 U	1.70 U	0.0400 U	0.0200 U	0.0200 U
Tributyltin	**12.0**	**15.0**	**680**	3.60 U	3.50 U	0.0400 U	0.0200 U	0.0200 U

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.

J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-2f
Data Not Used in the RI - 2001 In-Water Investigation
Sandblast Area Storm Drain System Analytical Results
Semivolatile Organic Compounds

Area	Sandblast	Sandblast	Sandblast	Sandblast	Sandblast
Site ID	SBDS-18	SBDS-19	SBDS-24	SBMS-1	SBMS-1 DUP
Sample ID	010501SBDS18SD	010501SBDS19SD	010501SBDS24SD	010501SBMS1SD	010501SBMS2SD
Sample Date	5/1/2001	5/1/2001	5/1/2001	5/1/2001	5/1/2001
Sample Date	River Sediment at Outfall	River Sediment at Outfall	Catchbasin Solids	Catchbasin Solids	Catchbasin Solids
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	170 U	17.0 U	340 U	180 U	170 U
1,2-Dichlorobenzene	170 U	17.0 U	340 U	180 U	170 U
1,3-Dichlorobenzene	170 U	17.0 U	340 U	180 U	170 U
1,4-Dichlorobenzene	170 U	17.0 U	340 U	180 U	170 U
2,4,5-Trichlorophenol	170 U	17.0 U	340 U	180 U	170 U
2,4,6-Trichlorophenol	170 U	17.0 U	340 U	180 U	170 U
2,4-Dichlorophenol	170 U	17.0 U	340 U	180 U	170 U
2,4-Dimethylphenol	170 U	17.0 U	340 U	180 U	170 U
2,4-Dinitrophenol	170 U	17.0 U	340 U	180 U	170 U
2,4-Dinitrotoluene	170 U	17.0 U	340 UJ	180 U	170 U
2,6-Dinitrotoluene	170 U	17.0 U	340 U	180 U	170 U
2-Chloronaphthalene	170 U	17.0 U	340 U	180 U	170 U
2-Chlorophenol	170 U	17.0 U	340 U	180 U	170 U
2-Methylnaphthalene	170 U	9.00 U	170 U	180 U	170 U
2-Methylphenol	170 U	17.0 U	340 U	180 U	170 U
2-Nitroaniline	170 U	17.0 U	340 U	180 U	170 U
2-Nitrophenol	170 U	17.0 U	340 U	180 U	170 U
3,3'-Dichlorobenzidine	170 U	17.0 U	340 U	180 U	170 U
3-Nitroaniline	170 U	17.0 U	340 U	180 U	170 U
4,6-Dinitro-2-methylphenol	420 U	44.0 U	850 UJ	450 U	420 U
4-Chloroaniline	170 U	17.0 U	340 UJ	180 U	170 U
4-Nitroaniline	170 U	17.0 U	340 U	180 U	170 U
4-Nitrophenol	170 U	17.0 U	340 U	180 U	170 U
Acenaphthene	**40.0 J**	**36.0**	170 U	**250**	**100**
Acenaphthylene	170 U	17.0 U	170 U	**31.0 J**	170 U
Anthracene	**110**	**66.0**	170 U	**290**	**96.0**
Benzidine	170 U	34.0 U	340 U	360 U	340 U
Benzo(a)anthracene	**240**	**250**	**140 J**	**1,000**	**390**
Benzo(a)pyrene	**290**	**400**	**170 J**	**1,400**	**610**
Benzo(b)fluoranthene	**330**	**490**	**190**	**1,700**	**670**
Benzo(g,h,i)perylene	**150**	**160**	**78.0 J**	**700**	**260**
Benzo(k)fluoranthene	170 U	**65.0**	**51.0 J**	**370**	**140**
Benzoic Acid	420 U	44.0 UJ	850 U	450 UJ	420 U
Benzyl Alcohol	170 U	17.0 U	340 U	180 U	170 U
Bis(2-chloroethoxy)methane	170 U	17.0 U	340 U	180 U	170 U
Bis(2-chloroethyl) Ether	170 U	17.0 U	340 U	180 U	170 U
Bis(2-chloroisopropyl) Ether	170 U	17.0 U	340 U	180 U	170 U
Bis(2-ethylhexyl) Phthalate	2,300 U	**440**	**9,500**	**3,800**	2,900 U
Butyl Benzyl Phthalate	170 U	27.0 U	340 U	180 U	170 U
Carbazole	**71.0 J**	**27.0 J**	850 U	**190 J**	**79.0 J**
Chrysene	**300**	**270**	**170**	**1,000**	**410**
Dibenz(a,h)anthracene	170 U	9.00 U	170 U	**180**	84.0 U
Dibenzofuran	83.0 U	**9.00 J**	340 U	**62.0 J**	**27.0 J**
Diethyl Phthalate	170 U	17.0 U	340 U	180 U	170 U
Dimethyl Phthalate	170 U	17.0 U	340 U	180 U	170 U
Di-n-butyl Phthalate	830 U	87.0 U	1,700 U	910 U	840 U
Di-n-octyl Phthalate	170 U	17.0 U	340 U	180 U	170 U
Fluoranthene	**530**	**490**	**290**	**2,100**	**860**
Fluorene	**56.0 J**	**24.0**	170 U	**160**	**51.0 J**
Hexachlorobenzene	170 U	17.0 U	340 UJ	180 U	170 U
Hexachlorobutadiene	170 U	17.0 U	340 U	180 U	170 U
Hexachlorocyclopentadiene	170 U	17.0 U	340 U	180 U	170 U
Hexachloroethane	170 U	17.0 U	340 U	180 U	170 U
Indeno(1,2,3-cd)pyrene	**80.0 J**	**150**	**34.0 J**	**640**	**200**
Isophorone	170 U	17.0 U	340 U	180 U	170 U
Naphthalene	170 U	**6.00 J**	170 U	**27.0 J**	84.0 U
Nitrobenzene	170 U	17.0 U	340 U	180 U	170 U
N-Nitrosodimethylamine	170 U	17.0 U	340 UJ	180 U	170 U
N-Nitrosodi-n-propylamine	170 U	40.0 U	340 U	180 U	170 U
N-Nitrosodiphenylamine	170 U	17.0 U	340 U	180 U	170 U
p-cresol (4-Methylphenol)	**58.0 J**	**72.0**	**370**	**85.0 J**	**69.0 J**
Pentachlorophenol	170 U	17.0 U	340 U	180 U	170 U
Phenanthrene	**480**	**190**	**110 J**	**1,100**	**480**
Phenol	170 U	17.0 U	340 U	180 U	170 U
Pyrene	**520**	**470**	**300**	**1,900**	**760**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.

J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-2g
Data Not Used in the RI - 2001 In-Water Investigation
Semi-Permeable Membrane Device (SPMD) Analytical Results

Area	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Goose Island Reference area
Site ID	RQ01	RQ02	RQ02 DUP	RQ05	IW10
Sample ID	010619RQ01	010619RQ02	010619RQ03	010619RQ05	010619RQ06
Sample Date	9/20/2001	9/20/2001	9/20/2001	9/20/2001	9/20/2001
PCB Aroclors (ng/SPMD)					
Aroclor 1242	32.6 U	32.6 U	32.6 U	32.6 U	32.6 U
Aroclor 1248	32.6 U	32.6 U	32.6 U	32.6 U	32.6 U
Aroclor 1254	32.6 U	32.6 U	32.6 U	32.6 U	32.6 U
Aroclor 1260	32.6 U	32.6 U	32.6 U	32.6 U	32.6 U

Notes:

ng/SPMD = nanograms per SPMD
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-3
Data Not Used in the RI - 2002 Trashboom Anchor Sediment Investigation
Analytical Results
(Page 1 of 2)

Area	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal
Site ID	TAF-05	TAF-06	TAF-07	TAF-08	TAF-09	TAF-10	TAF-11
Sample ID	020115TAF05SD	020115TAF06SD	020115TAF07SD	020115TAF08SD	020115TAF09SD	020115TAF010SD	020115TAF011SD
Sample Date	1/15/2002	1/15/2002	1/15/2002	1/15/2002	1/15/2002	1/15/2002	1/15/2002
PCB Aroclors (µg/kg dry)							
Aroclor 1016	1.3 U	1.6 U	2.2 U	1.3 U	1.2 U	1.4 U	1.4 U
Aroclor 1221	5.6 U	6.7 U	9.5 U	5.6 U	5.1 U	5.9 U	6.1 U
Aroclor 1232	4.5 U	5.4 U	7.6 U	4.5 U	4.0 U	4.7 U	4.9 U
Aroclor 1242	2.4 U	2.9 U	4.1 U	2.4 U	2.2 U	2.5 U	2.6 U
Aroclor 1248	5.9 U	7.1 U	10.1 U	6.0 U	5.4 U	6.3 U	6.5 U
Aroclor 1254	1.9 U	2.2 U	3.2 U	1.9 U	1.7 U	2.0 U	2.0 U
Aroclor 1260	1.9 U	2.2 U	3.2 U	1.9 U	1.7 U	2.0 U	2.0 U
Metals (mg/kg dry)							
Lead	**7.9**	**8.0**	**15.5**	**7.0**	**6.2**	**8.7**	**10.2**
Mercury	**0.0 J**	**0.0**	**0.2**	**0.1**	**0.1**	**0.0**	**0.4**
Petroleum Hydrocarbons (mg/kg dry)							
Diesel Range Organics	16.7 U	16.9 U	26.8 U	15.5 U	13.8 U	15.2 U	17.5 U
Residual Range Organics	33.5 U	33.9 U	53.6 U	31.0 U	27.5 U	30.5 U	**41.4 J**
Gasoline Range Organics	2.6 U	2.9 U	4.4 UJ	2.7 UJ	2.3 U	2.7 U	2.8 U
General Chemistry Parameters (mg/kg) and Grain Size (%)							
Carbon, Total Organic	**1580.0**	**4120.0**	**13300.0**	**8590.0**	**5300.0**	**7720.0**	**6290.0**
Gravel (>2.00 mm)	**3.4**	**15.0**	**12.1**	**18.9**	**18.6**	**44.1**	0.0 U
Sand (2.0 - 0.075mm)	**87.8**	**76.0**	**27.4**	**68.4**	**68.2**	**53.4**	**75.2**
Silt/Clay (< 0.075mm)	**8.3**	**9.1**	**57.6**	**12.4**	**12.8**	**2.4**	**24.9**

Notes:

µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
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J = The reported value is an estimate.

U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-3
Data Not Used in the RI - 2002 Trashboom Anchor Sediment Investigation
Analytical Results

Area	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal	Forebay Pre-Equipment Removal
Site ID	TAF-12	TAF-13	TSF-01	TSF-02	TSF-03	TSF-03 DUP
Sample ID	020115TAF012SD	020115TAF013SD	020112TSF01SD	020112TSF02SD	020112TSF03SD	020112TSF04SD
Sample Date	1/15/2002	1/15/2002	1/14/2002	1/14/2002	1/14/2002	1/14/2002
PCB Aroclors (µg/kg dry)						
Aroclor 1016	1.5 U	1.5 U	1.7 U	1.6 U	1.5 U	1.6 U
Aroclor 1221	6.5 U	6.4 U	7.4 U	6.9 U	6.4 U	6.9 U
Aroclor 1232	5.2 U	5.1 U	5.9 U	5.5 U	5.1 U	5.5 U
Aroclor 1242	2.8 U	2.7 U	3.2 U	2.9 U	2.7 U	3.0 U
Aroclor 1248	6.9 U	6.8 U	7.8 U	7.3 U	6.8 U	7.4 U
Aroclor 1254	2.1 U	2.1 U	2.5 U	2.3 U	2.1 U	2.3 U
Aroclor 1260	2.1 U	2.1 U	2.5 U	2.3 U	2.1 U	2.3 U
Metals (mg/kg dry)						
Lead	**11.3**	**16.0**	**13.6**	**14.1**	**16.6**	**11.7**
Mercury	**0.4**	**0.0**	**0.1 J**	**0.1 J**	**0.1 J**	**0.1 J**
Petroleum Hydrocarbons (mg/kg dry)						
Diesel Range Organics	16.8 U	17.5 U	20.0 U	18.1 U	18.1 U	18.2 U
Residual Range Organics	**39.4 J**	**60.4 J**	**72.3 J**	**38.2 J**	**43.6 J**	**195.0 X2**
Gasoline Range Organics	2.8 UJ	2.7 UJ	3.2 UJ	2.8 U	3.0 U	3.1 U
General Chemistry Parameters (mg/kg)						
Carbon, Total Organic	**12500.0**	**11300.0**	**12600.0**	**6110.0**	**13900.0**	**13700.0**
Gravel (>2.00 mm)	0.0 U	0.0 U	0.0 U	**0.6**	0.0 U	0.0 U
Sand (2.0 - 0.075mm)	**79.1**	**8.9**	**56.4**	**46.4**	**74.0**	**56.7**
Silt/Clay (< 0.075mm)	**20.8**	**90.5**	**43.6**	**52.5**	**25.4**	**42.7**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-4
Data Not Used in the RI - 2002 In-Water Equipment Removal
Water Quality Analytical Results

Site ID	Debris Pile 01	Debris Pile 01	Debris Pile 01	Debris Pile 01 DUP	Debris Pile 02	Debris Pile 02	Debris Pile 03
Sample ID	020227IW04WC	020228IW05WC	020304IW07WC	020228IW06WC	020223IW02WC	020226IW03WC	020220IW01WC
Sample Date	2/27/2002	2/28/2002	3/4/2002	2/28/2002	2/22/2002	2/26/2002	2/20/2002
Dissolved PCB Aroclors (µg/L)							
Aroclor 1016	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 UJ
Aroclor 1221	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00300 U	0.00200 U	0.00300 UJ
Aroclor 1232	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 UJ
Aroclor 1242	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 UJ
Aroclor 1248	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 UJ
Aroclor 1254	0.00100 U	0.00100 U	**0.0308**	0.00100 U	0.00100 U	0.00100 U	0.00100 UJ
Aroclor 1260	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 UJ
Particulate PCB Aroclors (µg/L)							
Aroclor 1016	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U
Aroclor 1221	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00300 U	0.00200 U	0.00300 U
Aroclor 1232	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U
Aroclor 1242	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U
Aroclor 1248	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U	0.00100 U
Aroclor 1254	0.00100 U	**0.0186 J**	**0.0218**	0.00100 U	0.00100 U	0.00100 U	0.00100 U
Aroclor 1260	0.00100 U	0.00100 U	0.00100 U	**0.0347 J**	0.00100 U	0.00100 U	0.00100 U
General Chemistry Parameters (mg/L)							
Carbon, Total Organic	**2.44 J**	**1.70 J**	**1.90 J**	**2.40 J**	**2.05 J**	**1.91 J**	-
Carbon, Dissolved Organic	**4.20 J**	**1.89 J**	**2.84 J**	**1.83 J**	**2.48 J**	**3.52 J**	**8.19 J**

Notes:
µg/L = microgram per liter
mg/L = milligram per liter
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-5
Data Not Used in the RI - 2002 U.S. Army Corp of Engineers Sediment Investigation
Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Reference Area at River Mile 147
Site ID	BF-03	BF-04	BF-07	BF-14
Sample ID	BF-BC-03	BF-BC-04	BF-BC-07	BF-BC-14
Sample Date	7/18/2002	7/18/2002	7/18/2002	7/18/2002
PCB Aroclors (µg/kg dry)				
Aroclor 1016	3.37 U	3.43 U	3.13 U	3.04 U
Aroclor 1221	14.4 U	14.7 U	13.4 U	13.0 U
Aroclor 1232	11.5 U	11.7 U	10.7 U	10.4 U
Aroclor 1242	6.16 U	6.27 U	5.71 U	5.55 U
Aroclor 1248	15.3 U	15.6 U	14.2 U	13.8 U
Aroclor 1254	4.78 U	4.87 U	**19.2 J**	4.30 U
Aroclor 1260	4.78 U	4.87 U	4.43 U	4.30 U
Metals (mg/kg dry)				
Aluminum	**11,400**	-	**9,870**	-
Antimony	**0.407 J**	-	**0.400 J**	-
Arsenic	**4.57**	-	**2.42**	-
Barium	**152**	-	**118**	-
Beryllium	**0.396 J**	-	**0.372 J**	-
Cadmium	**0.207 J**	-	**0.0605 J**	-
Calcium	**7,150**	-	**5,560**	-
Chromium	**20.3**	-	**17.0**	-
Cobalt	**11.6**	-	**9.87**	-
Copper	**37.2**	-	**25.5**	-
Iron	**23,800**	-	**20,700**	-
Lead	**12.0**	**13.1**	**8.31**	**13.0**
Magnesium	**5,960**	-	**5,100**	-
Manganese	**510**	-	**399**	-
Mercury	**0.0674**	**0.136**	**0.0451**	**0.0739**
Nickel	**18.5**	-	**15.4**	-
Potassium	**1,000**	-	**845**	-
Selenium	0.518 U	-	0.554 U	-
Silver	**0.162 J**	-	**0.115 J**	-
Sodium	**345**	-	**263 J**	-
Thallium	**0.334 J**	-	**0.187 J**	-
Vanadium	**59.9**	-	**51.3**	-
Zinc	**111**	-	**84.4**	-
Semivolatile Organic Compounds (µg/kg dry)				
1,2,4-Trichlorobenzene	9.83 U	-	8.87 U	-
1,2-Dichlorobenzene	9.83 U	-	8.87 U	-
1,3-Dichlorobenzene	9.83 U	-	8.87 U	-
1,4-Dichlorobenzene	9.83 U	-	8.87 U	-
2,4-Dimethylphenol	9.83 U	-	8.87 U	-
2-Methylnaphthalene	2.46 U	-	2.22 U	-
2-Methylphenol	9.83 U	-	8.87 U	-
Acenaphthene	0.983 U	-	**0.923**	-
Acenaphthylene	0.983 U	-	0.887 U	-
Anthracene	0.983 U	-	**1.02**	-
Benzo(a)anthracene	**1.12**	-	**7.99**	-
Benzo(a)pyrene	0.983 U	-	**5.81**	-
Benzo(g,h,i)perylene	0.983 U	-	**4.42**	-
Benzofluoranthenes, Total	**3.47**	-	**9.27**	-
Benzoic Acid	49.1 U	-	44.4 U	-
Benzyl Alcohol	9.83 U	-	8.87 U	-
Bis(2-ethylhexyl) Phthalate	**28.0**	-	**20.2**	-
Butyl Benzyl Phthalate	9.83 U	-	8.87 U	-
Chrysene	**1.19**	-	**9.64**	-
Dibenz(a,h)anthracene	0.983 U	-	0.887 U	-
Dibenzofuran	9.83 U	-	8.87 U	-
Diethyl Phthalate	9.83 U	-	8.87 U	-
Dimethyl Phthalate	9.83 U	-	8.87 U	-
Di-n-butyl Phthalate	9.83 U	-	8.87 U	-
Di-n-octyl Phthalate	9.83 U	-	8.87 U	-
Fluoranthene	**2.08**	-	**13.6**	-
Fluorene	**1.38**	-	0.887 U	-
Hexachlorobenzene	9.83 U	-	8.87 U	-
Hexachlorobutadiene	9.83 U	-	8.87 U	-
Hexachloroethane	9.83 U	-	8.87 U	-
Indeno(1,2,3-cd)pyrene	0.983 U	-	**4.09**	-
Naphthalene	2.46 U	-	2.22 U	-
N-Nitrosodiphenylamine	9.83 U	-	8.87 U	-
p-cresol (4-Methylphenol)	19.7 U	-	17.7 U	-
Pentachlorophenol	9.83 U	-	8.87 U	-
Phenanthrene	0.983 U	-	**4.57**	-
Phenol	**11.9**	-	8.87 U	-
Pyrene	**1.77**	-	**15.4**	-
General Chemistry Parameters (mg/kg dry)				
Carbon, Total Organic	**6,270**	**7,120**	**3,660**	**5,200**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-5
Data Not Used in the RI - 2002 U.S. Army Corp of Engineers Sediment Investigation
Analytical Results

Area	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147
Site ID	BF-15	BF-16	BF-17	BF-26
Sample ID	BF-BC-15	BF-BC-16	BF-BC-17	BF-BC-26
Sample Date	7/18/2002	7/18/2002	7/18/2002	7/18/2002
PCB Aroclors (µg/kg dry)				
Aroclor 1016	4.52 U	4.31 U	4.16 U	2.72 U
Aroclor 1221	19.3 U	18.4 U	17.8 U	11.6 U
Aroclor 1232	15.4 U	14.7 U	14.2 U	9.30 U
Aroclor 1242	8.25 U	7.87 U	7.60 U	4.97 U
Aroclor 1248	20.5 U	19.6 U	18.9 U	12.4 U
Aroclor 1254	6.41 U	6.11 U	5.90 U	3.86 U
Aroclor 1260	6.41 U	6.11 U	5.90 U	3.86 U
Metals (mg/kg dry)				
Aluminum	-	-	**11,900**	**9,500**
Antimony	-	-	**0.806 J**	**0.342 J**
Arsenic	-	-	**5.51**	**5.77**
Barium	-	-	**153**	**199**
Beryllium	-	-	**0.482 J**	**0.373 J**
Cadmium	-	-	**0.520 J**	**0.0649 J**
Calcium	-	-	**5,510**	**6,500**
Chromium	-	-	**21.5**	**15.7**
Cobalt	-	-	**12.4**	**14.5**
Copper	-	-	**28.3**	**33.7**
Iron	-	-	**26,100**	**25,200**
Lead	**17.0**	**14.9**	**16.3**	**8.85**
Magnesium	-	-	**5,170**	**6,980**
Manganese	-	-	**716**	**499**
Mercury	**0.197**	**0.117**	**0.188**	**0.0498**
Nickel	-	-	**19.1**	**18.7**
Potassium	-	-	**1,550**	**878**
Selenium	-	-	0.727 U	0.462 U
Silver	-	-	**0.221 J**	**0.109 J**
Sodium	-	-	**366 J**	**275**
Thallium	-	-	**0.270 J**	**0.220 J**
Vanadium	-	-	**68.9**	**49.2**
Zinc	-	-	**147**	**103**
Semivolatile Organic Compounds (µg/kg dry)				
1,2,4-Trichlorobenzene	-	-	12.1 U	7.49 U
1,2-Dichlorobenzene	-	-	12.1 U	7.49 U
1,3-Dichlorobenzene	-	-	12.1 U	7.49 U
1,4-Dichlorobenzene	-	-	12.1 U	7.49 U
2,4-Dimethylphenol	-	-	12.1 U	7.49 U
2-Methylnaphthalene	-	-	3.03 U	1.87 U
2-Methylphenol	-	-	12.1 U	7.49 U
Acenaphthene	-	-	1.21 U	0.749 U
Acenaphthylene	-	-	1.21 U	0.749 U
Anthracene	-	-	**1.23**	0.749 U
Benzo(a)anthracene	-	-	**6.82**	0.749 U
Benzo(a)pyrene	-	-	**7.29**	0.749 U
Benzo(g,h,i)perylene	-	-	**6.63**	0.749 U
Benzofluoranthenes, Total	-	-	**14.3**	1.50 U
Benzoic Acid	-	-	60.6 U	37.5 U
Benzyl Alcohol	-	-	12.1 U	7.49 U
Bis(2-ethylhexyl) Phthalate	-	-	**24.2**	**8.70**
Butyl Benzyl Phthalate	-	-	**37.0**	**9.90**
Chrysene	-	-	**8.57**	0.749 U
Dibenz(a,h)anthracene	-	-	1.21 U	0.749 U
Dibenzofuran	-	-	12.1 U	7.49 U
Diethyl Phthalate	-	-	12.1 U	7.49 U
Dimethyl Phthalate	-	-	12.1 U	7.49 U
Di-n-butyl Phthalate	-	-	12.1 U	7.49 U
Di-n-octyl Phthalate	-	-	12.1 U	7.49 U
Fluoranthene	-	-	**13.9**	**1.21**
Fluorene	-	-	**1.27**	0.749 U
Hexachlorobenzene	-	-	12.1 U	7.49 U
Hexachlorobutadiene	-	-	12.1 U	7.49 U
Hexachloroethane	-	-	12.1 U	7.49 U
Indeno(1,2,3-cd)pyrene	-	-	**4.77**	0.749 U
Naphthalene	-	-	3.03 U	1.87 U
N-Nitrosodiphenylamine	-	-	12.1 U	7.49 U
p-cresol (4-Methylphenol)	-	-	24.2 U	15.0 U
Pentachlorophenol	-	-	12.1 U	7.49 U
Phenanthrene	-	-	**5.36**	0.749 U
Phenol	-	-	12.1 U	7.49 U
Pyrene	-	-	**9.76**	**3.75**
General Chemistry Parameters (mg/kg dry)				
Carbon, Total Organic	**16,000**	**13,600**	**12,900**	**2,210**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	DP-118	DP-120	DP-121	DP-122	DP-123
Sample ID	030402DP118SD	030402DP120SD	030403DP121SD	030304DP122SD	030304DP123SD
Sample Date	4/3/2003	4/3/2003	4/3/2003	3/4/2003	3/4/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Aroclor 1221	0.200 U	0.200 U	0.200 U	0.210 U	0.200 U
Aroclor 1232	0.510 U	0.510 U	0.510 U	0.520 U	0.520 U
Aroclor 1242	0.630 U	0.630 U	0.630 U	0.640 U	0.630 U
Aroclor 1248	0.550 U	0.550 U	0.550 U	0.560 U	0.560 U
Aroclor 1254	0.530 U	0.530 U	**1.50**	0.530 U	0.530 U
Aroclor 1260	0.340 U	0.340 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**11,800**	**16,800**	**25,500**	**13,400**	**14,700**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**126**	**131**	**230**	**129**	**111**
Beryllium	**0.200**	**0.300**	**0.400**	**0.300**	**0.200**
Cadmium	**0.600**	**0.600**	**0.700**	**0.700**	0.300 U
Calcium	-	-	-	-	-
Chromium	**14.8**	**15.1**	**27.0**	**16.2**	**14.5**
Cobalt	-	-	-	-	-
Copper	**18.5**	**28.0**	**42.2**	**22.9**	**20.2**
Iron	-	-	-	-	-
Lead	**11.6**	**10.3**	**11.0**	**13.0**	**6.80**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**15.0**	**15.0**	**23.0**	**18.0**	**28.0**
Potassium	-	-	-	-	-
Selenium	0.300 U	0.300 U	0.400 U	0.400 U	0.300 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	**0.300**	0.200 U	**0.300**	0.200 U	0.100 U
Vanadium	-	-	-	-	-
Zinc	**119**	**110**	**156**	**125**	**77.3**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.70 U	1.50 U	1.70 U	1.90 U	1.50 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	DP-118	DP-120	DP-121	DP-122	DP-123
Sample ID	030402DP118SD	030402DP120SD	030403DP121SD	030304DP122SD	030304DP123SD
Sample Date	4/3/2003	4/3/2003	4/3/2003	3/4/2003	3/4/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	2.80 U	2.50 U	2.80 U	3.20 U	2.50 U
Acenaphthylene	1.90 U	1.70 U	1.90 U	2.20 U	1.70 U
Aniline	-	-	-	-	-
Anthracene	1.90 U	1.60 U	1.90 U	2.10 U	1.70 U
Benzo(a)anthracene	**43.0**	2.40 U	2.70 U	3.10 U	2.40 U
Benzo(a)pyrene	**51.0**	2.30 U	2.70 U	3.10 U	2.40 U
Benzo(b)fluoranthene	**52.0**	2.50 U	2.80 U	3.20 U	2.50 U
Benzo(g,h,i)perylene	**26.0**	1.90 U	2.20 U	2.50 U	2.00 U
Benzo(k)fluoranthene	**35.0**	3.20 U	3.70 U	4.20 U	3.30 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	10.0 U	12.0 U	11.0 U	22.0 U	9.10 U
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	**52.0**	2.70 U	3.00 U	3.50 U	2.70 U
Dibenz(a,h)anthracene	**13.0**	2.50 U	2.90 U	3.30 U	2.60 U
Dibenzofuran	2.40 U	2.10 U	2.40 U	2.80 U	2.20 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	**71.0**	2.10 U	2.30 U	2.70 U	2.10 U
Fluorene	1.90 U	1.60 U	1.90 U	2.20 U	1.70 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	**22.0**	2.10 U	2.40 U	2.80 U	2.20 U
Isophorone	-	-	-	-	-
Naphthalene	1.80 U	1.60 U	1.80 U	2.10 U	1.60 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	**14.0**	1.90 U	2.20 U	2.50 U	2.00 U
Phenol	-	-	-	-	-
Pyrene	**56.0**	1.90 U	2.20 U	**13.0**	2.00 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.830**	**0.710**	**1.40**	**1.00**	**0.960**
Solids, Total	**58.0**	**71.9**	**53.0**	**55.4**	**68.1**
Gravel	**8.65 J**	**0.000 J**	**24.1 J**	**0.126 J**	**0.371 J**
Sand, Coarse	**4.33 J**	**4.85 J**	**6.41 J**	**0.0900 J**	**2.32 J**
Sand, Medium	**1.18 J**	**23.9 J**	**13.3 J**	**1.31 J**	**40.2 J**
Sand, Fine	**30.6 J**	**41.2 J**	**36.0 J**	**43.8 J**	**51.9 J**
Sand	**36.1 J**	**69.9 J**	**55.6 J**	**45.2 J**	**94.4 J**
Silt	**50.7 J**	**26.3 J**	**15.1 J**	**48.4 J**	**4.15 J**
Clay	**4.47 J**	**3.72 J**	**5.17 J**	**6.30 J**	**1.09 J**
Fines	**55.2 J**	**30.1 J**	**20.3 J**	**54.7 J**	**5.25 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	DP-124	DP-125	DP-127	DP-127	DP-128
Sample ID	030304DP124SD	030401DP125SD	030304DP127SD	030304DP132SD	030304DP128SD
Sample Date	3/4/2003	4/1/2003	3/4/2003	3/4/2003	3/4/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Aroclor 1221	0.210 U	0.210 U	0.200 U	0.200 U	0.200 U
Aroclor 1232	0.520 U	0.520 U	0.520 U	0.510 U	0.500 U
Aroclor 1242	0.640 U	0.640 U	0.630 U	0.620 U	0.620 U
Aroclor 1248	0.560 U	0.560 U	0.560 U	0.550 U	0.550 U
Aroclor 1254	**7.30**	0.530 U	0.530 U	0.530 U	0.490 U
Aroclor 1260	0.340 U	0.340 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**14,500**	**20,800**	**14,500**	**13,500**	**10,400**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**128**	**159**	**135**	**135**	**117**
Beryllium	**0.300**	**0.300**	**0.400**	**0.300**	**0.200**
Cadmium	**0.900**	0.300 U	**0.900**	**0.500**	0.300 U
Calcium	-	-	-	-	-
Chromium	**17.4**	**23.0**	**17.0**	**15.6**	**14.2**
Cobalt	-	-	-	-	-
Copper	**24.0**	**47.3**	**25.9**	**21.8**	**15.9**
Iron	-	-	-	-	-
Lead	**16.4**	**5.90**	**15.0**	**11.8**	**11.0**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**15.0**	**20.0**	**18.0**	**18.0**	**16.0**
Potassium	-	-	-	-	-
Selenium	0.400 U	0.300 U	0.400 U	0.300 U	0.300 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	**0.200**	**0.300**	**0.400**	**0.400**	**0.300**
Vanadium	-	-	-	-	-
Zinc	**126**	**76.6**	**145**	**126**	**123**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.90 U	1.50 U	2.20 U	1.70 U	1.60 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	DP-124	DP-125	DP-127	DP-127	DP-128
Sample ID	030304DP124SD	030401DP125SD	030304DP127SD	030304DP132SD	030304DP128SD
Sample Date	3/4/2003	4/1/2003	3/4/2003	3/4/2003	3/4/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	3.20 U	2.60 U	3.70 U	2.80 U	2.70 U
Acenaphthylene	2.10 U	1.70 U	2.50 U	1.90 U	1.80 U
Aniline	-	-	-	-	-
Anthracene	2.10 U	1.70 U	2.40 U	1.80 U	1.80 U
Benzo(a)anthracene	**18.0**	2.50 U	3.50 U	2.70 U	2.60 U
Benzo(a)pyrene	**22.0**	2.40 U	3.50 U	**19.0**	2.60 U
Benzo(b)fluoranthene	**27.0**	2.60 U	3.70 U	**21.0**	2.70 U
Benzo(g,h,i)perylene	**15.0**	2.00 U	2.80 U	**12.0**	2.10 U
Benzo(k)fluoranthene	**19.0**	3.40 U	4.80 U	**20.0**	3.60 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	17.0 U	19.0 U	18.0 U	16.0 U	22.0 U
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	**33.0**	2.80 U	4.00 U	**14.0**	2.90 U
Dibenz(a,h)anthracene	3.20 U	2.60 U	3.80 U	2.80 U	2.80 U
Dibenzofuran	2.70 U	2.20 U	3.20 U	2.40 U	2.40 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	**32.0**	2.10 U	3.10 U	2.30 U	2.30 U
Fluorene	2.10 U	1.70 U	2.50 U	1.80 U	1.80 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	**14.0**	2.20 U	3.10 U	**12.0**	2.30 U
Isophorone	-	-	-	-	-
Naphthalene	2.00 U	1.70 U	2.40 U	1.80 U	1.80 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	**18.0**	2.00 U	2.80 U	2.10 U	2.10 U
Phenol	-	-	-	-	-
Pyrene	**30.0**	2.00 U	2.80 U	2.10 U	2.10 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**1.20**	**1.00**	**1.20**	**0.690**	**0.340**
Solids, Total	**48.1**	**58.8**	**47.9**	**68.6**	**71.1**
Gravel	**2.04 J**	**41.7 J**	**0.000 J**	**0.000 J**	**0.219 J**
Sand, Coarse	**1.79 J**	**23.7 J**	**0.000 J**	**0.000 J**	**0.843 J**
Sand, Medium	**9.36 J**	**14.1 J**	**0.812 J**	**1.26 J**	**4.80 J**
Sand, Fine	**52.6 J**	**15.6 J**	**26.8 J**	**82.3 J**	**89.7 J**
Sand	**63.7 J**	**53.5 J**	**27.6 J**	**83.6 J**	**95.3 J**
Silt	**27.5 J**	**4.08 J**	**59.7 J**	**13.1 J**	**2.42 J**
Clay	**6.74 J**	**0.761 J**	**12.7 J**	**3.35 J**	**2.03 J**
Fines	**34.2 J**	**4.84 J**	**72.4 J**	**16.4 J**	**4.45 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
(Page 5 of 44)

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	DP-128 DUP	DP-129	DP-130	DP-130	GI-111
Sample ID	030304DP131SD	030321DP129SD	030305DP130SD	030305DP135SD	030304GI111SD
Sample Date	3/4/2003	3/21/2003	3/5/2003	3/5/2003	3/4/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	1.00 U	0.200 U	0.220 U	0.200 U	0.200 U
Aroclor 1221	1.20 U	0.200 U	0.210 U	0.200 U	0.200 U
Aroclor 1232	0.540 U	0.520 U	0.530 U	0.520 U	0.520 U
Aroclor 1242	0.630 U	0.640 U	0.650 U	0.630 U	0.630 U
Aroclor 1248	0.420 U	0.560 U	0.580 U	0.560 U	0.560 U
Aroclor 1254	1.20 U	**2.90**	0.530 U	0.530 U	**1.00 J**
Aroclor 1260	1.00 U	0.340 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**11,000**	**21,500**	**15,100**	**11,600**	**16,600**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**127**	**185**	**142**	**122**	**153**
Beryllium	**0.200**	0.500 U	**0.400**	**0.200**	**0.400**
Cadmium	**0.400**	**1.00**	**1.10**	**0.300**	**0.900**
Calcium	-	-	-	-	-
Chromium	**14.4**	**24.0**	**18.0**	**13.6**	**19.0**
Cobalt	-	-	-	-	-
Copper	**18.4**	**38.0**	**27.7**	**18.5**	**30.1**
Iron	-	-	-	-	-
Lead	**11.0**	**21.0**	**16.0**	**11.7**	**14.0**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**16.0**	**24.0**	**18.0**	**17.0**	**18.0**
Potassium	-	-	-	-	-
Selenium	0.300 U	1.00 U	0.400 U	0.300 U	0.400 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	**0.300**	**0.500 Z**	**0.400**	**0.300**	**0.200**
Vanadium	-	-	-	-	-
Zinc	**120**	**167**	**148**	**122**	**139**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.70 U	2.50 U	2.30 U	1.80 U	2.10 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
(Page 6 of 44)

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	DP-128 DUP	DP-129	DP-130	DP-130	GI-111
Sample ID	030304DP131SD	030321DP129SD	030305DP130SD	030305DP135SD	030304GI111SD
Sample Date	3/4/2003	3/21/2003	3/5/2003	3/5/2003	3/4/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	2.80 U	4.10 U	3.90 U	3.00 U	3.50 U
Acenaphthylene	1.90 U	2.80 U	2.60 U	2.00 U	2.40 U
Aniline	-	-	-	-	-
Anthracene	1.90 U	2.70 U	2.50 U	2.00 U	2.30 U
Benzo(a)anthracene	2.70 U	4.00 U	3.70 U	**24.0**	3.40 U
Benzo(a)pyrene	2.70 U	3.90 U	3.70 U	**29.0**	3.30 U
Benzo(b)fluoranthene	2.80 U	4.10 U	3.90 U	**29.0**	15.0 U
Benzo(g,h,i)perylene	2.20 U	3.20 U	3.00 U	**22.0**	2.70 U
Benzo(k)fluoranthene	3.70 U	5.40 U	5.00 U	**25.0**	4.60 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	16.0 U	45.0 U	37.0 U	18.0 U	18.0 U
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	3.10 U	4.50 U	4.20 U	**35.0**	3.80 U
Dibenz(a,h)anthracene	2.90 U	4.30 U	4.00 U	3.10 U	3.60 U
Dibenzofuran	2.50 U	3.60 U	3.30 U	2.60 U	3.00 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	2.40 U	3.50 U	3.20 U	**42.0**	2.90 U
Fluorene	1.90 U	2.80 U	2.60 U	2.00 U	2.40 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	2.40 U	3.60 U	3.30 U	**20.0**	3.00 U
Isophorone	-	-	-	-	-
Naphthalene	1.80 U	2.70 U	2.50 U	1.90 U	2.30 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	2.20 U	3.20 U	3.00 U	**17.0**	2.70 U
Phenol	-	-	-	-	-
Pyrene	2.20 U	3.20 U	3.00 U	**31.0**	2.70 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.560**	**1.10**	**1.40**	**2.10**	**1.60**
Solids, Total	**68.2**	**30.8**	**45.6**	**62.2**	**36.9**
Gravel	**0.000 J**	**1.63 J**	**0.000 J**	**0.000 J**	**0.000 J**
Sand, Coarse	**0.0377 J**	**2.15 J**	**0.000 J**	**0.000 J**	**0.408 J**
Sand, Medium	**0.962 J**	**2.64 J**	**0.872 J**	**0.872 J**	**1.46 J**
Sand, Fine	**73.5 J**	**10.4 J**	**11.1 J**	**11.1 J**	**20.1 J**
Sand	**74.5 J**	**15.2 J**	**12.0 J**	**12.0 J**	**21.9 J**
Silt	**19.8 J**	**71.8 J**	**72.9 J**	**72.9 J**	**67.2 J**
Clay	**5.66 J**	**11.4 J**	**15.1 J**	**15.1 J**	**10.8 J**
Fines	**25.5 J**	**83.2 J**	**88.0 J**	**88.0 J**	**78.1 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	GI-111	GI-112	GI-115	S1-29	S1-30
Sample ID	030304GI133SD	030402GI112SD	030304GI115SD	030325S129SD	030321S130SD
Sample Date	3/4/2003	4/3/2003	3/4/2003	3/25/2003	3/21/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Aroclor 1221	0.200 U	0.200 U	0.210 U	0.200 U	0.200 U
Aroclor 1232	0.520 U	0.510 U	0.520 U	0.500 U	0.480 U
Aroclor 1242	0.630 U	0.620 U	0.640 U	0.620 U	0.600 U
Aroclor 1248	0.560 U	0.550 U	0.560 U	0.550 U	0.540 U
Aroclor 1254	**0.900 J**	0.530 U	0.530 U	**110**	**12.0**
Aroclor 1260	0.340 U	0.340 U	0.340 U	0.340 U	**8.10**
Metals (mg/kg dry)					
Aluminum	**13,700**	**18,600**	**17,200**	**11,400**	**19,600**
Antimony	-	-	-	R	**0.900 J**
Arsenic	-	-	-	**5.50**	**5.30**
Barium	**137**	**197**	**154**	**99.0**	**163**
Beryllium	**0.300**	**0.300**	**0.400**	**0.200**	**0.500**
Cadmium	**0.800**	**0.600**	**1.10**	0.300 U	0.700 U
Calcium	-	-	-	**5,660**	**6,500**
Chromium	**16.7**	**17.0**	**20.0**	**17.6**	**36.0**
Cobalt	-	-	-	**8.50**	**12.0**
Copper	**23.7**	**33.3**	**30.6**	**24.4**	**30.4**
Iron	-	-	-	**28,400**	**28,300**
Lead	**13.9**	**10.0**	**16.0**	**35.0**	**19.0**
Magnesium	-	-	-	**3,540**	**5,910**
Manganese	-	-	-	**293**	**773**
Mercury	-	-	-	0.0300 U	**0.120**
Nickel	**16.0**	**26.0**	**19.0**	**14.0**	**23.0**
Potassium	-	-	-	**570**	**2,060**
Selenium	0.300 U	0.400 U	0.500 U	0.300 U	0.700 U
Silver	-	-	-	0.400 U	1.00 U
Sodium	-	-	-	**650**	**680**
Thallium	**0.300**	0.200 U	0.300 U	**0.200**	**0.900**
Vanadium	-	-	-	**53.6**	**66.0**
Zinc	**133**	**103**	**156**	**69.1**	**168**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	2.00 U	**9.60**
Residual Range Organics	-	-	-	**11.0 L**	**38.0 O**
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	5.80 U	5.90 U
Monobutyltin trichloride	-	-	-	5.80 U	5.90 U
Tetrabutyltin	-	-	-	5.80 U	5.90 U
Tributyltin chloride	-	-	-	5.80 U	5.90 U
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	0.0860 U	0.115 U
4,4'-DDE	-	-	-	14.0 U	2.00 U
4,4'-DDT	-	-	-	0.132 U	0.191 U
Aldrin	-	-	-	0.0340 U	0.103 U
BHC (alpha)	-	-	-	0.0520 U	0.0470 U
BHC (beta)	-	-	-	0.0570 U	0.0430 U
BHC (delta)	-	-	-	0.0420 U	0.0490 U
BHC (gamma) Lindane	-	-	-	0.0400 U	0.0430 U
Chlordane (alpha)	-	-	-	1.50 U	0.0590 U
Chlordane (gamma)	-	-	-	0.0360 U	0.980 U
Dieldrin	-	-	-	11.0 U	0.0820 U
Endosulfan I	-	-	-	0.0520 U	0.0470 U
Endosulfan II	-	-	-	0.118 U	0.119 U
Endosulfan Sulfate	-	-	-	5.30 U	0.0980 U
Endrin	-	-	-	0.0570 U	0.0900 U
Endrin Aldehyde	-	-	-	9.10 U	0.197 U
Endrin Ketone	-	-	-	0.195 U	0.137 U
Heptachlor	-	-	-	0.0420 U	0.0820 U
Heptachlor Epoxide	-	-	-	0.0420 U	0.0490 U
Methoxychlor	-	-	-	0.573 U	0.644 U
Toxaphene	-	-	-	4.29 U	4.88 U
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	4.80 U	4.90 U
1,2-Dichlorobenzene	-	-	-	5.00 U	5.10 U
1,3-Dichlorobenzene	-	-	-	4.60 U	4.70 U
1,4-Dichlorobenzene	-	-	-	5.00 U	5.10 U
2,4,5-Trichlorophenol	-	-	-	7.70 U	7.90 U
2,4,6-Trichlorophenol	-	-	-	6.60 U	6.70 U
2,4-Dichlorophenol	-	-	-	9.60 U	9.80 U
2,4-Dimethylphenol	-	-	-	9.30 U	9.40 U
2,4-Dinitrophenol	-	-	-	98.0 U	100 U
2,4-Dinitrotoluene	-	-	-	5.20 U	5.30 U
2,6-Dinitrotoluene	-	-	-	4.80 U	4.90 U
2-Chloronaphthalene	-	-	-	5.60 U	5.70 U
2-Chlorophenol	-	-	-	6.40 U	6.50 U
2-Methylnaphthalene	1.80 U	1.50 U	2.10 U	4.80 U	4.90 U
2-Methylphenol	-	-	-	6.60 U	6.70 U
2-Nitroaniline	-	-	-	13.0 U	13.0 U
2-Nitrophenol	-	-	-	9.40 U	9.60 U

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	GI-111	GI-112	GI-115	S1-29	S1-30
Sample ID	030304GI133SD	030402GI112SD	030304GI115SD	030325S129SD	030321S130SD
Sample Date	3/4/2003	4/3/2003	3/4/2003	3/25/2003	3/21/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	33.0 U	34.0 U
3-Nitroaniline	-	-	-	11.0 U	11.0 U
4,6-Dinitro-2-methylphenol	-	-	-	160 U	170 U
4-Bromophenyl Phenyl Ether	-	-	-	6.20 U	6.30 U
4-Chloro-3-methylphenol	-	-	-	9.10 U	9.20 U
4-Chloroaniline	-	-	-	14.0 U	14.0 U
4-Chlorophenyl Phenyl Ether	-	-	-	9.60 U	9.80 U
4-Nitroaniline	-	-	-	13.0 U	13.0 U
4-Nitrophenol	-	-	-	18.0 U	18.0 U
Acenaphthene	3.10 U	2.50 U	3.50 U	5.00 U	5.10 U
Acenaphthylene	2.10 U	1.70 U	2.40 U	4.40 U	4.50 U
Aniline	-	-	-	6.00 U	6.10 U
Anthracene	2.00 U	1.70 U	2.30 U	4.60 U	4.70 U
Benzo(a)anthracene	2.90 U	2.40 U	3.40 U	**9.80 J**	**13.0 J**
Benzo(a)pyrene	2.90 U	2.40 U	3.30 U	**12.0 J**	3.90 U
Benzo(b)fluoranthene	3.10 U	2.50 U	3.50 U	**12.0 J**	8.10 U
Benzo(g,h,i)perylene	2.40 U	2.00 U	2.70 U	**13.0 J**	5.30 U
Benzo(k)fluoranthene	4.00 U	3.30 U	4.60 U	**13.0 J**	11.0 U
Benzoic Acid	-	-	-	160 U	160 U
Benzyl Alcohol	-	-	-	19.0 U	20.0 U
Bis(2-chloroethoxy)methane	-	-	-	4.60 U	4.70 U
Bis(2-chloroethyl) Ether	-	-	-	6.60 U	6.70 U
Bis(2-chloroisopropyl) Ether	-	-	-	5.60 U	5.70 U
Bis(2-ethylhexyl) Phthalate	18.0 U	26.0 U	13.0 U	18.0 U	**330**
Butyl Benzyl Phthalate	-	-	-	4.80 U	4.90 U
Carbazole	-	-	-	4.60 U	4.70 U
Chrysene	3.30 U	2.70 U	3.80 U	**15.0 J**	**16.0 J**
Dibenz(a,h)anthracene	3.10 U	2.60 U	3.60 U	5.60 U	5.70 U
Dibenzofuran	2.60 U	2.20 U	3.00 U	4.80 U	4.90 U
Diethyl Phthalate	-	-	-	**21.0**	8.70 U
Dimethyl Phthalate	-	-	-	5.00 U	5.10 U
Di-n-butyl Phthalate	-	-	-	**15.0 J**	5.70 U
Di-n-octyl Phthalate	-	-	-	7.90 U	8.10 U
Fluoranthene	2.60 U	2.10 U	2.90 U	**15.0 J**	**19.0 J**
Fluorene	2.00 U	1.70 U	2.30 U	6.60 U	6.70 U
Hexachlorobenzene	-	-	-	5.40 U	5.50 U
Hexachlorobutadiene	-	-	-	6.60 U	6.70 U
Hexachlorocyclopentadiene	-	-	-	29.0 U	29.0 U
Hexachloroethane	-	-	-	7.30 U	7.50 U
Indeno(1,2,3-cd)pyrene	2.60 U	2.20 U	3.00 U	**10.0 J**	5.90 U
Isophorone	-	-	-	6.20 U	6.30 U
Naphthalene	2.00 U	1.60 U	2.30 U	5.00 U	5.10 U
Nitrobenzene	-	-	-	5.80 U	5.90 U
N-Nitrosodimethylamine	-	-	-	39.0 U	40.0 U
N-Nitrosodi-n-propylamine	-	-	-	6.90 U	7.10 U
N-Nitrosodiphenylamine	-	-	-	6.70 U	6.90 U
p-cresol (4-Methylphenol)	-	-	-	6.60 U	6.70 U
Pentachlorophenol	-	-	-	42.0 U	43.0 U
Phenanthrene	2.40 U	1.90 U	2.70 U	4.40 U	4.50 U
Phenol	-	-	-	6.40 U	6.50 U
Pyrene	2.40 U	2.00 U	2.70 U	**14.0 J**	**17.0 J**
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.940**	**0.840**	**1.40**	**0.240**	**2.10**
Solids, Total	**62.9**	**69.5**	**46.1**	**71.7**	**26.7**
Gravel	**0.000 J**	**30.0 J**	**0.000 J**	**5.00**	**0.000**
Sand, Coarse	**0.000 J**	**29.9 J**	**0.0656 J**	**7.00**	**0.100**
Sand, Medium	**1.20 J**	**9.97 J**	**1.53 J**	**63.3**	**1.00**
Sand, Fine	**39.0 J**	**10.8 J**	**56.9 J**	**14.3**	**14.2**
Sand	**40.2 J**	**50.8 J**	**58.4 J**	**84.6**	**15.3**
Silt	**52.9 J**	**16.6 J**	**35.0 J**	**10.0**	**59.7**
Clay	**6.82 J**	**2.71 J**	**6.56 J**	**0.400**	**25.0**
Fines	**59.8 J**	**19.3 J**	**41.6 J**	**10.4**	**84.7**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S1-31	S1-32	S1-33	S1-34	S1-35
Sample ID	030319S131SD	030321S132SD	030314S133SD	030328S134SD	030313S135SD
Sample Date	3/19/2003	3/21/2003	3/14/2003	3/28/2003	3/13/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	1.00 U	0.200 U	0.200 U	51.1 U	0.0200 U
Aroclor 1221	1.02 U	0.210 U	0.200 U	50.9 U	0.0200 U
Aroclor 1232	2.61 U	0.480 U	0.520 U	135 U	0.0500 U
Aroclor 1242	3.10 U	0.600 U	0.630 U	160 U	0.0600 U
Aroclor 1248	**140**	0.540 U	0.560 U	134 U	0.700 U
Aroclor 1254	**140**	**21.0**	**99.0**	**36,000**	**1.70**
Aroclor 1260	19.0 U	**35.0**	4.13 U	1,102 U	0.280 U
Metals (mg/kg dry)					
Aluminum	**15,600**	**10,500**	**17,200**	**9,190**	**19,900**
Antimony	R	R	R	R	R
Arsenic	**5.80**	**2.00**	**4.20**	**1.70**	**3.00**
Barium	**108**	**98.2**	**136**	**75.8**	**181**
Beryllium	0.400 U	0.300 U	**0.400**	0.100 U	**0.300**
Cadmium	0.900 U	0.500 U	0.400 U	**0.200**	0.300 U
Calcium	**6,310**	**5,100**	**6,440**	**5,230**	**7,900**
Chromium	**26.0**	**117**	**19.0**	**11.7**	**24.7**
Cobalt	**11.0**	**11.0**	**9.40**	**7.80**	**11.8**
Copper	**44.7**	**21.1**	**27.4**	**24.7**	**38.5**
Iron	**94,900**	**18,900**	**25,100**	**21,400**	**31,300**
Lead	**19.9**	**31.0**	**12.0**	**3.10**	**8.70**
Magnesium	**8,640**	**6,580**	**5,760**	**8,000**	**9,140**
Manganese	**626**	**278**	**508**	**384**	**423**
Mercury	**0.0600**	**0.0700**	**0.0900**	0.0300 U	**0.0700**
Nickel	**26.0**	**47.0**	**16.0**	**13.0**	**20.0**
Potassium	**750**	**930**	**1,460**	**480**	**1,250**
Selenium	**0.400**	0.500 U	0.300 U	0.200 U	0.300 U
Silver	1.00 U	0.800 U	0.500 U	0.400 U	0.500 U
Sodium	**620**	**640**	**650**	**540**	**810**
Thallium	**0.200**	**0.300**	**0.300**	**0.200**	0.200 U
Vanadium	**56.0**	**41.6**	**60.5**	**41.7**	**76.9**
Zinc	**100**	**129**	**116**	**70.1**	**92.0**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	**9.30**	**28.0**	2.20 U	**47.0**	2.40 U
Residual Range Organics	**31.0 L**	**60.0 L**	**11.0 O**	5.00 U	**19.0 O**
Butyltins (µg/kg dry)					
Dibutyltin dichloride	5.80 U	5.80 U	5.80 U	5.80 U	5.80 U
Monobutyltin trichloride	5.80 U	5.80 U	5.80 U	5.80 U	5.80 U
Tetrabutyltin	5.80 U	5.80 U	5.80 U	5.80 U	5.80 U
Tributyltin chloride	5.80 U	5.80 U	5.80 U	5.80 U	5.80 U
Pesticides (µg/kg dry)					
4,4'-DDD	0.568 U	0.116 U	0.0880 U	1.75 U	0.0880 U
4,4'-DDE	1.05 U	0.215 U	24.0 U	410 U	**1.20 J**
4,4'-DDT	0.943 U	0.193 U	0.135 U	2.68 U	0.134 U
Aldrin	0.510 U	0.104 U	0.0350 U	0.700 U	0.0350 U
BHC (alpha)	0.231 U	0.0470 U	0.0530 U	1.05 U	0.0530 U
BHC (beta)	0.212 U	0.0430 U	0.0590 U	1.17 U	0.0580 U
BHC (delta)	0.240 U	0.0490 U	0.0430 U	0.855 U	0.0430 U
BHC (gamma) Lindane	9.50 U	0.0430 U	0.0410 U	0.816 U	0.0410 U
Chlordane (alpha)	0.289 U	0.0590 U	2.20 U	45.0 U	0.0290 U
Chlordane (gamma)	0.548 U	0.112 U	0.0370 U	0.738 U	0.0370 U
Dieldrin	0.404 U	0.0830 U	18.0 U	330 U	0.0580 U
Endosulfan I	0.231 U	0.0470 U	0.0530 U	1.05 U	0.0530 U
Endosulfan II	0.587 U	0.120 U	0.122 U	2.41 U	0.121 U
Endosulfan Sulfate	0.481 U	0.0990 U	0.165 U	3.26 U	0.164 U
Endrin	0.442 U	0.0910 U	0.0590 U	1.17 U	0.0580 U
Endrin Aldehyde	0.972 U	0.199 U	13.0 U	250 U	0.111 U
Endrin Ketone	0.673 U	0.138 U	0.200 U	3.96 U	0.199 U
Heptachlor	0.404 U	0.0830 U	0.0430 U	0.855 U	0.0430 U
Heptachlor Epoxide	4.80 U	0.0490 U	0.0430 U	0.855 U	0.0430 U
Methoxychlor	3.17 U	0.651 U	0.588 U	11.7 U	0.584 U
Toxaphene	24.0 U	4.93 U	4.41 U	87.4 U	4.38 U
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	4.80 U	4.90 U	4.80 U	4.80 U	4.90 U
1,2-Dichlorobenzene	5.00 U	5.10 U	5.00 U	5.00 U	5.10 U
1,3-Dichlorobenzene	4.60 U	4.70 U	4.60 U	4.60 U	4.70 U
1,4-Dichlorobenzene	5.00 U	5.10 U	5.00 U	5.00 U	5.10 U
2,4,5-Trichlorophenol	7.70 U	7.90 U	7.70 U	7.70 U	7.80 U
2,4,6-Trichlorophenol	6.50 U	6.70 U	6.60 U	6.60 U	6.70 U
2,4-Dichlorophenol	9.60 U	9.80 U	9.70 U	9.70 U	9.80 U
2,4-Dimethylphenol	9.20 U	9.40 U	9.30 U	9.30 U	9.40 U
2,4-Dinitrophenol	97.0 U	99.0 U	98.0 U	98.0 U	99.0 U
2,4-Dinitrotoluene	5.20 U	5.30 U	5.20 U	5.20 U	5.30 U
2,6-Dinitrotoluene	4.80 U	4.90 U	4.80 U	4.80 U	4.90 U
2-Chloronaphthalene	5.60 U	5.70 U	5.60 U	5.60 U	5.70 U
2-Chlorophenol	6.30 U	6.50 U	6.40 U	6.40 U	6.50 U
2-Methylnaphthalene	4.80 U	4.90 U	4.80 U	4.80 U	4.90 U
2-Methylphenol	6.50 U	6.70 U	6.60 U	6.60 U	6.70 U
2-Nitroaniline	13.0 U	13.0 U	13.0 U	13.0 U	13.0 U
2-Nitrophenol	9.40 U	9.60 U	9.50 U	9.50 U	9.60 U

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S1-31	S1-32	S1-33	S1-34	S1-35
Sample ID	030319S131SD	030321S132SD	030314S133SD	030328S134SD	030313S135SD
Sample Date	3/19/2003	3/21/2003	3/14/2003	3/28/2003	3/13/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	33.0 U	34.0 U	33.0 U	33.0 U	34.0 U
3-Nitroaniline	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U
4,6-Dinitro-2-methylphenol	160 U	170 U	160 U	160 U	170 U
4-Bromophenyl Phenyl Ether	6.10 U	6.30 U	6.20 U	6.20 U	6.30 U
4-Chloro-3-methylphenol	9.00 U	9.20 U	9.10 U	9.10 U	9.20 U
4-Chloroaniline	14.0 U	14.0 U	14.0 U	14.0 U	14.0 U
4-Chlorophenyl Phenyl Ether	9.60 U	9.80 U	9.70 U	9.70 U	9.80 U
4-Nitroaniline	12.0 U	13.0 U	13.0 U	13.0 U	13.0 U
4-Nitrophenol	17.0 U	18.0 U	18.0 U	18.0 U	18.0 U
Acenaphthene	5.00 U	5.10 U	5.00 U	5.00 U	5.10 U
Acenaphthylene	4.40 U	4.50 U	4.40 U	4.50 U	4.50 U
Aniline	6.00 U	6.10 U	6.00 U	6.00 U	6.10 U
Anthracene	4.60 U	4.70 U	4.60 U	4.60 U	4.70 U
Benzo(a)anthracene	**21.0**	**57.0**	5.00 U	5.00 U	5.10 U
Benzo(a)pyrene	**17.0 J**	**38.0**	3.90 U	3.90 U	3.90 U
Benzo(b)fluoranthene	**20.0**	**48.0**	7.90 U	7.90 U	8.00 U
Benzo(g,h,i)perylene	5.20 U	**22.0**	5.20 U	5.20 U	5.30 U
Benzo(k)fluoranthene	**18.0 J**	**46.0**	11.0 U	11.0 U	11.0 U
Benzoic Acid	160 U	160 U	160 U	160 U	160 U
Benzyl Alcohol	19.0 U	20.0 U	19.0 U	19.0 U	20.0 U
Bis(2-chloroethoxy)methane	4.60 U	4.70 U	4.60 U	4.60 U	4.70 U
Bis(2-chloroethyl) Ether	6.50 U	6.70 U	6.60 U	6.60 U	6.70 U
Bis(2-chloroisopropyl) Ether	5.60 U	5.70 U	5.60 U	5.60 U	5.70 U
Bis(2-ethylhexyl) Phthalate	**48.0**	**3,600**	18.0 U	18.0 U	**35.0**
Butyl Benzyl Phthalate	4.80 U	4.90 U	4.80 U	4.80 U	4.90 U
Carbazole	4.60 U	4.70 U	4.60 U	4.60 U	4.70 U
Chrysene	**28.0**	**82.0**	6.00 U	6.00 U	6.10 U
Dibenz(a,h)anthracene	5.60 U	5.70 U	5.60 U	5.60 U	5.70 U
Dibenzofuran	4.80 U	4.90 U	4.80 U	4.80 U	4.90 U
Diethyl Phthalate	8.40 U	8.60 U	8.50 U	8.50 U	8.60 U
Dimethyl Phthalate	5.00 U	5.10 U	5.00 U	5.00 U	5.10 U
Di-n-butyl Phthalate	5.60 U	5.70 U	5.60 U	5.60 U	5.70 U
Di-n-octyl Phthalate	7.90 U	8.10 U	7.90 U	7.90 U	8.00 U
Fluoranthene	**37.0**	**90.0**	5.80 U	5.80 U	5.90 U
Fluorene	6.50 U	6.70 U	6.60 U	6.60 U	6.70 U
Hexachlorobenzene	5.40 U	5.50 U	5.40 U	5.40 U	5.50 U
Hexachlorobutadiene	6.50 U	6.70 U	6.60 U	6.60 U	6.70 U
Hexachlorocyclopentadiene	28.0 U	29.0 U	29.0 U	29.0 U	29.0 U
Hexachloroethane	7.30 U	7.50 U	7.30 U	7.40 U	7.40 U
Indeno(1,2,3-cd)pyrene	5.80 U	**24.0**	5.80 U	5.80 U	5.90 U
Isophorone	6.10 U	6.30 U	6.20 U	6.20 U	6.30 U
Naphthalene	5.00 U	5.10 U	5.00 U	5.00 U	5.10 U
Nitrobenzene	5.80 U	5.90 U	5.80 U	5.80 U	5.90 U
N-Nitrosodimethylamine	39.0 U	40.0 U	39.0 U	39.0 U	40.0 U
N-Nitrosodi-n-propylamine	6.90 U	7.10 U	7.00 U	7.00 U	7.00 U
N-Nitrosodiphenylamine	6.70 U	6.90 U	6.80 U	6.80 U	6.80 U
p-cresol (4-Methylphenol)	6.50 U	**18.0 J**	6.60 U	6.60 U	6.70 U
Pentachlorophenol	42.0 U	43.0 U	42.0 U	42.0 U	43.0 U
Phenanthrene	**26.0**	**37.0**	4.40 U	4.50 U	4.50 U
Phenol	6.30 U	6.50 U	6.40 U	6.40 U	6.50 U
Pyrene	**37.0**	**89.0**	10.0 U	10.0 U	10.0 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.400**	**1.40**	**1.40**	**0.200**	**0.220**
Solids, Total	**67.8**	**29.7**	**55.0**	**76.6**	**65.7**
Gravel	**86.5**	**0.500**	**6.70**	**50.1**	**1.50**
Sand, Coarse	**10.3**	**1.80**	**9.20**	**31.3**	**4.40**
Sand, Medium	**2.10**	**6.90**	**16.0**	**16.1**	**36.2**
Sand, Fine	**0.600**	**25.8**	**41.8**	**1.50**	**36.4**
Sand	**13.0**	**34.5**	**67.0**	**48.9**	**77.0**
Silt	**0.400**	**57.6**	**24.7**	**0.700**	**19.4**
Clay	**0.100**	**7.40**	**1.50**	**0.300**	**2.20**
Fines	**0.500**	**65.0**	**26.2**	**1.00**	**21.6**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S1-36	S1-37	S1-38	S1-39	S1-40
Sample ID	030328S136SD	030326S137SD	030320S138SD	030314S139SD	030314S140SD
Sample Date	3/28/2003	3/26/2003	3/20/2003	3/14/2003	3/14/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	41.3 U	0.220 U	0.200 U	1.02 U	0.200 U
Aroclor 1221	41.0 U	0.210 U	0.210 U	1.03 U	0.200 U
Aroclor 1232	106 U	0.530 U	0.480 U	2.61 U	0.510 U
Aroclor 1242	130 U	0.640 U	0.600 U	3.20 U	0.630 U
Aroclor 1248	114 U	0.560 U	0.540 U	2.82 U	0.550 U
Aroclor 1254	**22,000**	**31.0**	**22.0**	**420**	**94.0**
Aroclor 1260	758 U	0.340 U	5.70 U	13.8 U	3.44 U
Metals (mg/kg dry)					
Aluminum	**10,200**	**8,460**	**20,600**	**19,000**	**23,200**
Antimony	**0.300 J**	R	R	R	R
Arsenic	**2.00**	**1.10**	**5.70**	**4.10**	**3.70**
Barium	**75.2**	**39.8**	**187**	**166**	**189**
Beryllium	0.100 U	0.100 U	**0.400**	**0.400**	**0.400**
Cadmium	0.300 U	0.300 U	**0.700**	0.400 U	0.300 U
Calcium	**5,710**	**5,150**	**8,080**	**7,060**	**8,470**
Chromium	**17.6**	**12.7**	**29.0**	**22.0**	**23.5**
Cobalt	**11.7**	**6.70**	**13.9**	**11.3**	**11.6**
Copper	**41.9**	**26.7**	**32.2**	**41.5**	**39.2**
Iron	**27,900**	**18,300**	**32,100**	**29,500**	**32,600**
Lead	**23.0**	**2.90**	**18.0**	**15.0**	**9.90**
Magnesium	**8,860**	**8,120**	**6,720**	**6,750**	**9,620**
Manganese	**455**	**248**	**589**	**668**	**495**
Mercury	0.0300 U	0.0300 U	**0.160**	**0.120**	**0.0800**
Nickel	**20.0**	**12.0**	**23.0**	**28.0**	**19.0**
Potassium	**410**	**400**	**2,080**	**1,630**	**1,530**
Selenium	0.300 U	0.300 U	0.600 U	0.400 U	0.300 U
Silver	0.400 U	0.400 U	0.800 U	0.600 U	0.500 U
Sodium	**540**	**610**	**990**	**730**	**900**
Thallium	**0.200**	**0.100**	**0.600**	**0.300**	**0.200**
Vanadium	**55.1**	**31.4**	**83.7**	**72.1**	**73.3**
Zinc	**76.0**	**75.5**	**196**	**143**	**105**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	**9.80**	1.80 U	2.80 U	2.60 U	2.30 U
Residual Range Organics	**13.0 L**	5.00 U	**18.0 O**	**16.0 O**	5.00 U
Butyltins (µg/kg dry)					
Dibutyltin dichloride	5.90 U	5.90 U	5.90 U	5.90 U	5.80 U
Monobutyltin trichloride	5.90 U	5.90 U	5.90 U	5.90 U	5.80 U
Tetrabutyltin	5.90 U	5.90 U	5.90 U	5.90 U	5.80 U
Tributyltin chloride	5.90 U	5.90 U	5.90 U	5.90 U	5.80 U
Pesticides (µg/kg dry)					
4,4'-DDD	1.76 U	0.0870 U	0.116 U	0.886 U	0.0880 U
4,4'-DDE	510 U	0.0760 U	0.214 U	54.0 U	0.0760 U
4,4'-DDT	2.70 U	0.134 U	0.192 U	1.36 U	0.134 U
Aldrin	0.706 U	0.0350 U	0.104 U	0.354 U	0.0350 U
BHC (alpha)	1.06 U	0.0520 U	0.0470 U	0.531 U	0.0530 U
BHC (beta)	1.18 U	0.0580 U	0.0430 U	0.591 U	0.0580 U
BHC (delta)	0.862 U	0.0430 U	0.0490 U	0.433 U	0.0430 U
BHC (gamma) Lindane	0.823 U	0.0410 U	0.0430 U	0.413 U	0.0410 U
Chlordane (alpha)	54.0 U	0.0290 U	0.0590 U	0.295 U	0.0290 U
Chlordane (gamma)	0.745 U	0.0370 U	0.112 U	0.374 U	0.0370 U
Dieldrin	420 U	0.0580 U	0.0820 U	0.591 U	0.0580 U
Endosulfan I	1.06 U	0.0520 U	0.0470 U	0.531 U	0.0530 U
Endosulfan II	2.43 U	0.121 U	0.120 U	1.22 U	0.121 U
Endosulfan Sulfate	3.29 U	0.163 U	0.0980 U	23.0 U	0.164 U
Endrin	1.18 U	0.0580 U	0.0900 U	0.591 U	0.0580 U
Endrin Aldehyde	320 U	0.111 U	0.198 U	30.0 U	0.111 U
Endrin Ketone	4.00 U	0.198 U	0.137 U	2.01 U	0.199 U
Heptachlor	0.862 U	0.0430 U	0.0820 U	0.433 U	0.0430 U
Heptachlor Epoxide	0.862 U	0.0430 U	0.0490 U	0.433 U	0.0430 U
Methoxychlor	11.8 U	0.583 U	0.647 U	5.91 U	0.584 U
Toxaphene	88.2 U	4.37 U	4.90 U	44.3 U	4.38 U
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	4.90 U	4.90 U	4.90 U	4.90 U	4.90 U
1,2-Dichlorobenzene	5.10 U	5.10 U	5.10 U	5.10 U	5.10 U
1,3-Dichlorobenzene	4.70 U	4.70 U	4.70 U	4.70 U	4.70 U
1,4-Dichlorobenzene	5.10 U	5.10 U	5.10 U	5.10 U	5.10 U
2,4,5-Trichlorophenol	7.90 U	7.80 U	7.90 U	7.90 U	7.80 U
2,4,6-Trichlorophenol	6.70 U	6.60 U	6.70 U	6.70 U	6.60 U
2,4-Dichlorophenol	9.90 U	9.70 U	9.80 U	9.90 U	9.70 U
2,4-Dimethylphenol	9.50 U	9.30 U	9.40 U	9.50 U	9.30 U
2,4-Dinitrophenol	100 U	98.0 U	99.0 U	100 U	98.0 U
2,4-Dinitrotoluene	5.30 U	5.20 U	5.30 U	5.30 U	5.20 U
2,6-Dinitrotoluene	4.90 U	4.90 U	4.90 U	4.90 U	4.90 U
2-Chloronaphthalene	5.70 U	5.60 U	5.70 U	5.70 U	5.60 U
2-Chlorophenol	6.50 U	6.40 U	6.50 U	6.50 U	6.40 U
2-Methylnaphthalene	4.90 U	4.90 U	4.90 U	4.90 U	4.90 U
2-Methylphenol	6.70 U	6.60 U	6.70 U	6.70 U	6.60 U
2-Nitroaniline	13.0 U	13.0 U	13.0 U	13.0 U	13.0 U
2-Nitrophenol	9.70 U	9.50 U	9.60 U	9.70 U	9.50 U

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S1-36	S1-37	S1-38	S1-39	S1-40
Sample ID	030328S136SD	030326S137SD	030320S138SD	030314S139SD	030314S140SD
Sample Date	3/28/2003	3/26/2003	3/20/2003	3/14/2003	3/14/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	34.0 U	34.0 U	34.0 U	34.0 U	34.0 U
3-Nitroaniline	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U
4,6-Dinitro-2-methylphenol	170 U	160 U	170 U	170 U	170 U
4-Bromophenyl Phenyl Ether	6.30 U	6.20 U	6.30 U	6.30 U	6.20 U
4-Chloro-3-methylphenol	9.30 U	9.10 U	9.20 U	9.30 U	9.10 U
4-Chloroaniline	14.0 U	14.0 U	14.0 U	14.0 U	14.0 U
4-Chlorophenyl Phenyl Ether	9.90 U	9.70 U	9.80 U	9.90 U	9.70 U
4-Nitroaniline	13.0 U	13.0 U	13.0 U	13.0 U	13.0 U
4-Nitrophenol	18.0 U	18.0 U	18.0 U	18.0 U	18.0 U
Acenaphthene	**36.0**	5.10 U	5.10 U	5.10 U	5.10 U
Acenaphthylene	4.50 U	4.50 U	4.50 U	4.50 U	4.50 U
Aniline	6.10 U	6.00 U	6.10 U	6.10 U	6.00 U
Anthracene	**25.0**	4.70 U	4.70 U	4.70 U	4.70 U
Benzo(a)anthracene	**95.0**	5.10 U	5.10 U	5.10 U	5.10 U
Benzo(a)pyrene	**88.0**	3.90 U	3.90 U	3.90 U	3.90 U
Benzo(b)fluoranthene	**91.0**	8.00 U	8.10 U	8.10 U	8.00 U
Benzo(g,h,i)perylene	**76.0**	5.20 U	5.30 U	5.30 U	5.20 U
Benzo(k)fluoranthene	**100 J**	11.0 U	11.0 U	**22.0**	11.0 U
Benzoic Acid	160 U	160 U	160 U	160 U	160 U
Benzyl Alcohol	20.0 U	19.0 U	20.0 U	20.0 U	19.0 U
Bis(2-chloroethoxy)methane	4.70 U	4.70 U	4.70 U	4.70 U	4.70 U
Bis(2-chloroethyl) Ether	6.70 U	6.60 U	6.70 U	6.70 U	6.60 U
Bis(2-chloroisopropyl) Ether	5.70 U	5.60 U	5.70 U	5.70 U	5.60 U
Bis(2-ethylhexyl) Phthalate	19.0 U	18.0 U	**220**	**29.0**	18.0 U
Butyl Benzyl Phthalate	4.90 U	4.90 U	4.90 U	4.90 U	4.90 U
Carbazole	**18.0 J**	4.70 U	4.70 U	4.70 U	4.70 U
Chrysene	**110**	6.00 U	6.10 U	**20.0**	6.00 U
Dibenz(a,h)anthracene	**25.0**	5.60 U	5.70 U	5.70 U	5.60 U
Dibenzofuran	4.90 U	4.90 U	4.90 U	4.90 U	4.90 U
Diethyl Phthalate	8.70 U	8.50 U	8.60 U	8.70 U	8.60 U
Dimethyl Phthalate	5.10 U	5.10 U	5.10 U	5.10 U	5.10 U
Di-n-butyl Phthalate	5.70 U	5.60 U	5.70 U	5.70 U	5.60 U
Di-n-octyl Phthalate	8.10 U	8.00 U	8.10 U	8.10 U	8.00 U
Fluoranthene	**190**	5.80 U	5.90 U	5.90 U	5.80 U
Fluorene	**14.0 J**	6.60 U	6.70 U	6.70 U	6.60 U
Hexachlorobenzene	5.50 U	5.40 U	5.50 U	5.50 U	5.40 U
Hexachlorobutadiene	6.70 U	6.60 U	6.70 U	6.70 U	6.60 U
Hexachlorocyclopentadiene	29.0 U	29.0 U	29.0 U	29.0 U	29.0 U
Hexachloroethane	7.50 U	7.40 U	7.50 U	7.50 U	7.40 U
Indeno(1,2,3-cd)pyrene	**76.0**	5.80 U	5.90 U	5.90 U	5.80 U
Isophorone	6.30 U	6.20 U	6.30 U	6.30 U	6.20 U
Naphthalene	5.10 U	5.10 U	5.10 U	5.10 U	5.10 U
Nitrobenzene	5.90 U	5.80 U	5.90 U	5.90 U	5.80 U
N-Nitrosodimethylamine	40.0 U	39.0 U	40.0 U	40.0 U	39.0 U
N-Nitrosodi-n-propylamine	7.10 U	7.00 U	7.10 U	7.10 U	7.00 U
N-Nitrosodiphenylamine	6.90 U	6.80 U	6.90 U	6.90 U	6.80 U
p-cresol (4-Methylphenol)	6.70 U	6.60 U	6.70 U	6.70 U	6.60 U
Pentachlorophenol	43.0 U	42.0 U	43.0 U	43.0 U	42.0 U
Phenanthrene	**140**	4.50 U	4.50 U	4.50 U	4.50 U
Phenol	6.50 U	6.40 U	6.50 U	6.50 U	6.40 U
Pyrene	**170**	10.0 U	10.0 U	10.0 U	10.0 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.170**	**0.0940**	**1.40**	**1.20**	**0.500**
Solids, Total	**77.8**	**73.6**	**46.6**	**56.9**	**64.3**
Gravel	**45.0**	**60.3**	**0.000**	**12.6**	**10.2**
Sand, Coarse	**13.9**	**29.1**	**0.300**	**7.00**	**4.10**
Sand, Medium	**32.9**	**10.0**	**2.00**	**22.1**	**27.8**
Sand, Fine	**6.90**	**0.300**	**54.5**	**34.3**	**30.9**
Sand	**53.7**	**39.4**	**56.8**	**63.4**	**62.8**
Silt	**0.700**	**0.200**	**31.4**	**22.8**	**24.8**
Clay	**0.700**	**0.000**	**11.9**	**1.10**	**2.10**
Fines	**1.40**	**0.200**	**43.3**	**23.9**	**26.9**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S1-41	S1-41 DUP	S1-42	S1-43	S1-44
Sample ID	030313S141SD	030313S1139SD	030313S142SD	030321S143SD	030321S144SD
Sample Date	3/13/2003	3/13/2003	3/13/2003	3/21/2003	3/21/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	1.04 U	0.200 U	0.200 U	1.02 U	1.04 U
Aroclor 1221	1.03 U	0.200 U	0.200 U	1.03 U	1.03 U
Aroclor 1232	2.61 U	0.520 U	0.520 U	2.61 U	2.61 U
Aroclor 1242	3.20 U	0.180 U	0.630 U	3.20 U	3.20 U
Aroclor 1248	2.82 U	0.560 U	0.560 U	2.82 U	2.82 U
Aroclor 1254	**410**	**33.0 J**	**9.50**	8.90 U	**35.0**
Aroclor 1260	19.6 U	2.27 U	0.340 U	**140**	**380**
Metals (mg/kg dry)					
Aluminum	**18,300**	**16,300**	**25,800**	**5,360**	**16,200**
Antimony	R	R	R	**0.600 J**	R
Arsenic	**2.90**	**3.40**	**3.10**	**32.0**	**4.40**
Barium	**156**	**147**	**134**	**49.2**	**144**
Beryllium	**0.400**	0.400 U	**0.400**	0.100 U	**0.300**
Cadmium	**0.400**	0.900 U	0.300 U	0.300 U	0.500 U
Calcium	**6,930**	**6,240**	**8,410**	**4,260**	**6,310**
Chromium	**19.7**	**18.0**	**25.0**	**620**	**25.0**
Cobalt	**10.9**	**10.0**	**15.7**	**14.8**	**10.7**
Copper	**54.9**	**13,100**	**51.5**	**47.9**	**24.6**
Iron	**28,300**	**25,600**	**33,800**	**21,500**	**23,700**
Lead	**50.0**	**20.3**	**19.4**	**121**	**16.0**
Magnesium	**6,390**	**5,580**	**10,400**	**21,100**	**5,160**
Manganese	**464**	**486**	**537**	**432**	**429**
Mercury	**0.160**	**0.110**	**0.0700**	0.0200 U	**0.170**
Nickel	**25.0**	**20.0**	**23.0**	**520**	**19.0**
Potassium	**1,370**	**1,530**	**1,110**	**280**	**1,630**
Selenium	0.400 U	0.300 U	0.300 U	0.300 U	0.500 U
Silver	0.500 U	**2.00**	0.500 U	0.400 U	0.700 U
Sodium	**690**	**710**	**790**	**410**	**750**
Thallium	**0.300**	**0.400**	0.200 U	**0.300**	**0.400**
Vanadium	**67.3**	**61.0**	**85.8**	**19.3**	**60.2**
Zinc	**154**	**1,420**	**83.0**	**187**	**146**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	2.60 U	**5.10**	2.40 U	**23.0**	3.90 U
Residual Range Organics	**25.0 O**	**32.0**	**38.0 A**	**74.0 L**	**14.0 O**
Butyltins (µg/kg dry)					
Dibutyltin dichloride	5.90 U	5.90 U	5.80 U	**4.60 J**	5.90 U
Monobutyltin trichloride	5.90 U	5.90 U	5.80 U	5.80 U	5.90 U
Tetrabutyltin	5.90 U	5.90 U	5.80 U	5.80 U	5.90 U
Tributyltin chloride	5.90 U	5.90 U	5.80 U	**13.0**	5.90 U
Pesticides (µg/kg dry)					
4,4'-DDD	0.0900 U	0.0880 U	0.0870 U	0.115 U	0.117 U
4,4'-DDE	9.20 U	5.20 U	0.0760 U	0.212 U	0.216 U
4,4'-DDT	0.137 U	0.135 U	0.134 U	0.191 U	0.194 U
Aldrin	0.0360 U	0.0350 U	0.0350 U	0.103 U	0.105 U
BHC (alpha)	0.0540 U	0.0530 U	0.0520 U	0.0470 U	0.0480 U
BHC (beta)	0.0600 U	0.0590 U	0.0580 U	0.0430 U	0.0440 U
BHC (delta)	0.0440 U	0.0430 U	0.0430 U	0.0490 U	0.0500 U
BHC (gamma) Lindane	0.0420 U	0.0410 U	0.0410 U	0.0430 U	0.0440 U
Chlordane (alpha)	0.0300 U	0.0290 U	0.0290 U	0.0580 U	0.0590 U
Chlordane (gamma)	0.0380 U	0.0370 U	0.0370 U	0.111 U	0.113 U
Dieldrin	6.20 U	3.50 U	0.0580 U	0.0820 U	0.0830 U
Endosulfan I	0.0540 U	0.0530 U	0.0520 U	0.0470 U	0.0480 U
Endosulfan II	0.123 U	0.121 U	0.120 U	0.119 U	0.121 U
Endosulfan Sulfate	4.50 U	0.164 U	0.163 U	0.0970 U	0.0990 U
Endrin	0.0600 U	0.0590 U	0.0580 U	0.0890 U	0.0910 U
Endrin Aldehyde	5.10 U	2.60 U	0.111 U	0.196 U	0.200 U
Endrin Ketone	0.203 U	0.200 U	0.198 U	0.136 U	0.139 U
Heptachlor	0.0440 U	0.0430 U	0.0430 U	0.0820 U	0.0830 U
Heptachlor Epoxide	0.0440 U	0.0430 U	0.0430 U	0.0490 U	0.0500 U
Methoxychlor	0.597 U	0.587 U	0.582 U	0.642 U	0.653 U
Toxaphene	4.48 U	4.40 U	4.37 U	4.86 U	4.95 U
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	5.00 U	4.90 U	4.90 U	4.80 U	4.90 U
1,2-Dichlorobenzene	5.20 U	5.00 U	5.10 U	5.00 U	5.10 U
1,3-Dichlorobenzene	4.80 U	4.70 U	4.70 U	4.70 U	4.70 U
1,4-Dichlorobenzene	5.20 U	5.00 U	5.10 U	5.00 U	5.10 U
2,4,5-Trichlorophenol	7.90 U	7.80 U	7.80 U	7.80 U	7.90 U
2,4,6-Trichlorophenol	6.70 U	6.60 U	6.60 U	6.60 U	6.70 U
2,4-Dichlorophenol	9.90 U	9.70 U	9.80 U	9.70 U	9.90 U
2,4-Dimethylphenol	9.50 U	9.30 U	9.40 U	9.30 U	9.50 U
2,4-Dinitrophenol	100 U	98.0 U	99.0 U	98.0 U	100 U
2,4-Dinitrotoluene	5.40 U	5.20 U	5.30 U	5.20 U	5.30 U
2,6-Dinitrotoluene	5.00 U	4.90 U	4.90 U	4.80 U	4.90 U
2-Chloronaphthalene	5.80 U	5.60 U	5.70 U	5.60 U	5.70 U
2-Chlorophenol	6.50 U	6.40 U	6.40 U	6.40 U	6.50 U
2-Methylnaphthalene	5.00 U	4.90 U	4.90 U	4.80 U	4.90 U
2-Methylphenol	6.70 U	6.60 U	6.60 U	6.60 U	6.70 U
2-Nitroaniline	13.0 U	13.0 U	13.0 U	13.0 U	13.0 U
2-Nitrophenol	9.70 U	9.50 U	9.60 U	9.50 U	9.70 U

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S1-41	S1-41 DUP	S1-42	S1-43	S1-44
Sample ID	030313S141SD	030313S1139SD	030313S142SD	030321S143SD	030321S144SD
Sample Date	3/13/2003	3/13/2003	3/13/2003	3/21/2003	3/21/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	34.0 U	34.0 U	34.0 U	34.0 U	34.0 U
3-Nitroaniline	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U
4,6-Dinitro-2-methylphenol	170 U	160 U	170 U	160 U	170 U
4-Bromophenyl Phenyl Ether	6.30 U	6.20 U	6.20 U	6.20 U	6.30 U
4-Chloro-3-methylphenol	9.30 U	9.10 U	9.20 U	9.10 U	9.30 U
4-Chloroaniline	14.0 U	14.0 U	14.0 U	14.0 U	14.0 U
4-Chlorophenyl Phenyl Ether	9.90 U	9.70 U	9.80 U	9.70 U	9.90 U
4-Nitroaniline	13.0 U	13.0 U	13.0 U	13.0 U	13.0 U
4-Nitrophenol	18.0 U	18.0 U	18.0 U	18.0 U	18.0 U
Acenaphthene	5.20 U	5.00 U	5.10 U	**20.0**	5.10 U
Acenaphthylene	4.60 U	4.50 U	4.50 U	4.50 U	4.50 U
Aniline	6.20 U	6.00 U	20.0 U	6.00 U	6.10 U
Anthracene	4.80 U	4.70 U	4.70 U	**140**	4.70 U
Benzo(a)anthracene	**15.0 J**	**34.0**	**22.0**	**890**	**13.0 J**
Benzo(a)pyrene	**36.0**	**30.0**	**20.0**	**420**	3.90 U
Benzo(b)fluoranthene	**15.0 J**	**34.0**	**29.0**	**510**	8.10 U
Benzo(g,h,i)perylene	5.40 U	5.20 U	5.30 U	**100**	5.30 U
Benzo(k)fluoranthene	**16.0 J**	**40.0**	**130 J**	**420**	11.0 U
Benzoic Acid	160 U	160 U	160 U	160 U	160 U
Benzyl Alcohol	20.0 U	19.0 U	20.0 U	19.0 U	20.0 U
Bis(2-chloroethoxy)methane	4.80 U	4.70 U	4.70 U	4.70 U	4.70 U
Bis(2-chloroethyl) Ether	6.70 U	6.60 U	6.60 U	6.60 U	6.70 U
Bis(2-chloroisopropyl) Ether	5.80 U	5.60 U	5.70 U	5.60 U	5.70 U
Bis(2-ethylhexyl) Phthalate	**44.0**	**36.0**	**86.0**	**3,800**	**570**
Butyl Benzyl Phthalate	5.00 U	4.90 U	4.90 U	4.80 U	4.90 U
Carbazole	4.80 U	4.70 U	4.70 U	**120**	4.70 U
Chrysene	**41.0**	**36.0**	**27.0**	**1,200**	**15.0 J**
Dibenz(a,h)anthracene	5.80 U	5.60 U	5.70 U	**42.0**	5.70 U
Dibenzofuran	5.00 U	4.90 U	4.90 U	4.80 U	4.90 U
Diethyl Phthalate	8.70 U	8.50 U	8.60 U	8.50 U	8.70 U
Dimethyl Phthalate	5.20 U	5.00 U	5.10 U	5.00 U	5.10 U
Di-n-butyl Phthalate	5.80 U	5.60 U	5.70 U	**87.0**	5.70 U
Di-n-octyl Phthalate	8.10 U	8.00 U	8.00 U	7.90 U	8.10 U
Fluoranthene	**51.0**	**40.0**	**36.0**	**1,700**	**18.0 J**
Fluorene	6.70 U	6.60 U	6.60 U	6.60 U	6.70 U
Hexachlorobenzene	5.60 U	5.40 U	5.50 U	5.40 U	5.50 U
Hexachlorobutadiene	6.70 U	6.60 U	6.60 U	6.60 U	6.70 U
Hexachlorocyclopentadiene	29.0 U	29.0 U	29.0 U	29.0 U	29.0 U
Hexachloroethane	7.50 U	7.40 U	7.40 U	7.40 U	7.50 U
Indeno(1,2,3-cd)pyrene	6.00 U	5.80 U	5.90 U	**140**	5.90 U
Isophorone	6.30 U	6.20 U	6.20 U	6.20 U	6.30 U
Naphthalene	5.20 U	5.00 U	5.10 U	5.00 U	5.10 U
Nitrobenzene	6.00 U	5.80 U	5.90 U	5.80 U	5.90 U
N-Nitrosodimethylamine	40.0 U	39.0 U	40.0 U	39.0 U	40.0 U
N-Nitrosodi-n-propylamine	7.10 U	7.00 U	7.00 U	7.00 U	7.10 U
N-Nitrosodiphenylamine	6.90 U	6.80 U	6.80 U	6.80 U	6.90 U
p-cresol (4-Methylphenol)	6.70 U	6.60 U	**36.0**	6.60 U	6.70 U
Pentachlorophenol	43.0 U	42.0 U	43.0 U	42.0 U	43.0 U
Phenanthrene	4.60 U	4.50 U	4.50 U	**510**	4.50 U
Phenol	6.50 U	6.40 U	6.40 U	6.40 U	6.50 U
Pyrene	**44.0**	**38.0**	**32.0**	**2,000**	**19.0 J**
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.800**	**1.30**	**0.280**	**0.400**	**1.20**
Solids, Total	**61.5**	**57.6**	**70.8**	**75.2**	**42.3**
Gravel	**2.60**	**3.20**	**4.90**	**1.50**	**0.400**
Sand, Coarse	**5.00**	**6.80**	**14.6**	**3.60**	**0.300**
Sand, Medium	**3.50**	**2.90**	**29.6**	**63.3**	**2.30**
Sand, Fine	**35.0**	**38.9**	**21.0**	**17.2**	**32.4**
Sand	**43.5**	**48.6**	**65.2**	**84.1**	**35.0**
Silt	**49.7**	**43.0**	**28.2**	**13.1**	**49.7**
Clay	**4.10**	**5.10**	**1.70**	**1.30**	**14.8**
Fines	**53.8**	**48.1**	**29.9**	**14.4**	**64.5**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S1-44 DUP	S1-45	S1-46	S1-47	S1-48
Sample ID	030321S1141SD	030325S145SD	030325S146SD	030319S147SD	030319S148SD
Sample Date	3/21/2003	3/25/2003	3/25/2003	3/19/2003	3/19/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.200 U	0.200 U	1.02 U	1.02 U	1.02 U
Aroclor 1221	0.210 U	0.200 U	1.02 U	1.02 U	1.03 U
Aroclor 1232	0.480 U	0.510 U	2.61 U	2.61 U	2.61 U
Aroclor 1242	0.170 U	0.620 U	3.20 U	3.20 U	3.20 U
Aroclor 1248	0.540 U	0.550 U	2.82 U	2.82 U	2.82 U
Aroclor 1254	**24.0**	**150**	**22,000**	**2,400**	**2,900**
Aroclor 1260	**9.20**	0.340 U	379 U	65.5 U	62.0 U
Metals (mg/kg dry)					
Aluminum	**17,000**	**24,400**	**14,600**	**16,300**	**13,800**
Antimony	R	R	R	R	R
Arsenic	**4.00**	**3.10**	**5.50**	**6.80**	**3.30**
Barium	**152**	**75.8**	**121**	**130**	**126**
Beryllium	**0.400**	**0.400**	**0.300**	**0.300**	**0.200**
Cadmium	0.600 U	0.400 U	**0.600**	0.300 U	0.300 U
Calcium	**6,420**	**11,800**	**6,430**	**6,940**	**5,620**
Chromium	**26.0**	**31.7**	**18.9**	**22.8**	**25.9**
Cobalt	**10.9**	**22.9**	**9.80**	**10.4**	**9.70**
Copper	**27.6**	**46.1**	**35.9**	**31.5**	**28.0**
Iron	**25,800**	**38,900**	**30,100**	**32,000**	**23,800**
Lead	**14.0**	**8.10**	**16.5**	**35.0**	**10.4**
Magnesium	**5,350**	**16,600**	**7,670**	**6,830**	**5,900**
Manganese	**624**	**630**	**370**	**501**	**344**
Mercury	**0.160**	0.0400 U	**0.0300**	**0.100**	0.0300 U
Nickel	**20.0**	**47.0**	**17.0**	**18.0**	**16.0**
Potassium	**1,730**	**640**	**870**	**1,130**	**770**
Selenium	0.600 U	0.400 U	0.300 U	0.300 U	0.300 U
Silver	0.900 U	0.600 U	0.400 U	0.500 U	0.400 U
Sodium	**690**	**1,700**	**690**	**770**	**530**
Thallium	**0.400**	**0.300**	**0.400**	**0.300**	**0.200**
Vanadium	**63.5**	**89.9**	**51.8**	**65.5**	**62.5**
Zinc	**157**	**83.0**	**98.6**	**123**	**75.4**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	**6.20**	2.30 U	**6.50**	2.30 U	**9.60**
Residual Range Organics	**19.0**	5.00 U	**14.0 L**	**11.0 O**	**14.0 O**
Butyltins (µg/kg dry)					
Dibutyltin dichloride	5.90 U	5.80 U	5.80 U	5.90 U	5.80 U
Monobutyltin trichloride	5.90 U	5.80 U	5.80 U	5.90 U	5.80 U
Tetrabutyltin	5.90 U	5.80 U	5.80 U	5.90 U	5.80 U
Tributyltin chloride	5.90 U	5.80 U	5.80 U	5.90 U	5.80 U
Pesticides (µg/kg dry)					
4,4'-DDD	0.116 U	0.0870 U	43.6 U	0.114 U	0.465 U
4,4'-DDE	2.00 U	0.0750 U	7,100 U	1.90 U	7.90 U
4,4'-DDT	0.192 U	0.133 U	66.8 U	0.190 U	0.772 U
Aldrin	0.104 U	0.0350 U	17.4 U	0.103 U	0.417 U
BHC (alpha)	0.0470 U	0.0520 U	26.2 U	0.0470 U	0.189 U
BHC (beta)	0.0430 U	0.0580 U	29.1 U	0.0430 U	0.173 U
BHC (delta)	0.0490 U	0.0420 U	21.3 U	0.0480 U	0.197 U
BHC (gamma) Lindane	0.0430 U	0.0400 U	20.3 U	0.0430 U	0.173 U
Chlordane (alpha)	0.0590 U	0.0290 U	740 U	0.970 U	3.90 U
Chlordane (gamma)	0.112 U	0.0370 U	18.4 U	0.110 U	0.449 U
Dieldrin	0.0820 U	0.0580 U	5,800 U	1.90 U	7.90 U
Endosulfan I	0.0470 U	0.0520 U	26.2 U	0.0470 U	0.189 U
Endosulfan II	0.120 U	0.119 U	60.1 U	0.118 U	0.481 U
Endosulfan Sulfate	0.0980 U	0.162 U	2,300 U	0.0970 U	7.90 U
Endrin	0.0900 U	0.0580 U	29.1 U	0.0890 U	9.90 U
Endrin Aldehyde	0.198 U	0.110 U	4,000 U	1.90 U	7.90 U
Endrin Ketone	0.137 U	0.196 U	98.8 U	0.136 U	0.551 U
Heptachlor	0.0820 U	0.0420 U	21.3 U	0.0810 U	0.331 U
Heptachlor Epoxide	0.0490 U	0.0420 U	21.3 U	0.0480 U	0.197 U
Methoxychlor	0.648 U	0.578 U	291 U	0.640 U	2.60 U
Toxaphene	4.91 U	4.33 U	2,180 U	4.84 U	19.7 U
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	4.90 U	4.80 U	4.90 U	4.80 U	4.80 U
1,2-Dichlorobenzene	5.10 U	5.00 U	5.10 U	5.00 U	5.00 U
1,3-Dichlorobenzene	4.70 U	4.60 U	4.70 U	4.70 U	4.60 U
1,4-Dichlorobenzene	5.10 U	5.00 U	5.10 U	5.00 U	5.00 U
2,4,5-Trichlorophenol	7.80 U	7.70 U	7.80 U	7.80 U	7.70 U
2,4,6-Trichlorophenol	6.60 U	6.60 U	6.70 U	6.60 U	6.60 U
2,4-Dichlorophenol	9.70 U	9.70 U	9.80 U	9.70 U	9.70 U
2,4-Dimethylphenol	9.30 U	9.30 U	9.40 U	9.30 U	9.30 U
2,4-Dinitrophenol	99.0 U	98.0 U	99.0 U	98.0 U	98.0 U
2,4-Dinitrotoluene	5.30 U	5.20 U	5.30 U	5.20 U	5.20 U
2,6-Dinitrotoluene	4.90 U	4.80 U	4.90 U	4.80 U	4.80 U
2-Chloronaphthalene	5.60 U	5.60 U	5.70 U	5.60 U	5.60 U
2-Chlorophenol	6.40 U	6.40 U	6.50 U	6.40 U	6.40 U
2-Methylnaphthalene	4.90 U	4.80 U	4.90 U	4.80 U	4.80 U
2-Methylphenol	6.60 U	6.60 U	6.70 U	6.60 U	6.60 U
2-Nitroaniline	13.0 U	13.0 U	13.0 U	13.0 U	13.0 U
2-Nitrophenol	9.50 U	9.50 U	9.60 U	9.50 U	9.50 U

Table G-6a
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Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S1-44 DUP	S1-45	S1-46	S1-47	S1-48
Sample ID	030321S1141SD	030325S145SD	030325S146SD	030319S147SD	030319S148SD
Sample Date	3/21/2003	3/25/2003	3/25/2003	3/19/2003	3/19/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	34.0 U	33.0 U	34.0 U	34.0 U	34.0 U
3-Nitroaniline	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U
4,6-Dinitro-2-methylphenol	170 U	160 U	170 U	160 U	160 U
4-Bromophenyl Phenyl Ether	6.20 U	6.20 U	6.30 U	6.20 U	6.20 U
4-Chloro-3-methylphenol	9.20 U	9.10 U	9.20 U	9.10 U	9.10 U
4-Chloroaniline	14.0 U	14.0 U	14.0 U	14.0 U	14.0 U
4-Chlorophenyl Phenyl Ether	9.70 U	9.70 U	9.80 U	9.70 U	9.70 U
4-Nitroaniline	13.0 U	13.0 U	13.0 U	13.0 U	13.0 U
4-Nitrophenol	18.0 U	18.0 U	18.0 U	18.0 U	18.0 U
Acenaphthene	5.10 U	5.00 U	5.10 U	5.00 U	5.00 U
Acenaphthylene	4.50 U	4.40 U	4.50 U	4.50 U	4.50 U
Aniline	6.00 U	6.00 U	6.10 U	6.00 U	6.00 U
Anthracene	4.70 U	4.60 U	4.70 U	4.70 U	4.60 U
Benzo(a)anthracene	**15.0 J**	**26.0**	**28.0**	**13.0 J**	**23.0**
Benzo(a)pyrene	3.90 U	**25.0**	**26.0**	**12.0 J**	**25.0**
Benzo(b)fluoranthene	**15.0 J**	**31.0**	**26.0**	**14.0 J**	**26.0**
Benzo(g,h,i)perylene	5.30 U	**18.0 J**	**17.0 J**	5.20 U	5.20 U
Benzo(k)fluoranthene	**16.0 J**	**30.0**	**24.0**	**14.0 J**	**26.0**
Benzoic Acid	160 U	160 U	160 U	160 U	**300**
Benzyl Alcohol	19.0 U	19.0 U	20.0 U	**22.0**	19.0 U
Bis(2-chloroethoxy)methane	4.70 U	4.60 U	4.70 U	4.70 U	4.60 U
Bis(2-chloroethyl) Ether	6.60 U	6.60 U	6.70 U	6.60 U	6.60 U
Bis(2-chloroisopropyl) Ether	5.60 U	5.60 U	5.70 U	5.60 U	5.60 U
Bis(2-ethylhexyl) Phthalate	**920**	18.0 U	**68.0**	**27.0**	**58.0**
Butyl Benzyl Phthalate	4.90 U	4.80 U	4.90 U	4.80 U	4.80 U
Carbazole	4.70 U	4.60 U	4.70 U	4.70 U	4.60 U
Chrysene	**23.0**	**35.0**	**34.0**	**18.0 J**	**33.0**
Dibenz(a,h)anthracene	5.60 U	5.60 U	5.70 U	5.60 U	5.60 U
Dibenzofuran	4.90 U	4.80 U	4.90 U	4.80 U	4.80 U
Diethyl Phthalate	8.60 U	8.50 U	8.60 U	8.50 U	8.50 U
Dimethyl Phthalate	5.10 U	5.00 U	5.10 U	5.00 U	5.00 U
Di-n-butyl Phthalate	5.60 U	5.60 U	**76.0**	**45.0**	5.60 U
Di-n-octyl Phthalate	8.00 U	7.90 U	8.00 U	8.00 U	7.90 U
Fluoranthene	**39.0**	**52.0**	**54.0**	**23.0**	**47.0**
Fluorene	6.60 U	6.60 U	6.70 U	6.60 U	6.60 U
Hexachlorobenzene	5.50 U	5.40 U	5.50 U	5.40 U	5.40 U
Hexachlorobutadiene	6.60 U	6.60 U	6.70 U	6.60 U	6.60 U
Hexachlorocyclopentadiene	29.0 U	29.0 U	29.0 U	29.0 U	29.0 U
Hexachloroethane	7.40 U	7.30 U	7.50 U	7.40 U	7.40 U
Indeno(1,2,3-cd)pyrene	5.80 U	**17.0 J**	**18.0 J**	5.80 U	5.80 U
Isophorone	6.20 U	6.20 U	6.30 U	6.20 U	6.20 U
Naphthalene	5.10 U	5.00 U	5.10 U	5.00 U	5.00 U
Nitrobenzene	5.80 U	5.80 U	5.90 U	5.80 U	5.80 U
N-Nitrosodimethylamine	40.0 U	39.0 U	40.0 U	97.0 U	39.0 U
N-Nitrosodi-n-propylamine	7.00 U	7.00 U	7.10 U	7.00 U	7.00 U
N-Nitrosodiphenylamine	6.80 U	6.80 U	6.90 U	6.80 U	6.80 U
p-cresol (4-Methylphenol)	6.60 U	6.60 U	6.70 U	6.60 U	6.60 U
Pentachlorophenol	42.0 U	42.0 U	43.0 U	42.0 U	42.0 U
Phenanthrene	**24.0**	**21.0**	**31.0**	**14.0 J**	**38.0**
Phenol	6.40 U	6.40 U	6.50 U	6.40 U	6.40 U
Pyrene	**31.0**	**49.0**	**57.0**	**22.0**	**44.0**
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**2.00**	**0.280**	**1.50**	**1.30**	**1.00**
Solids, Total	**29.6**	**69.3**	**57.0**	**63.5**	**46.5**
Gravel	**0.000**	**68.6**	**48.8**	**21.7**	**6.60**
Sand, Coarse	**0.300**	**10.1**	**27.0**	**2.50**	**7.00**
Sand, Medium	**1.50**	**15.4**	**14.9**	**15.3**	**53.3**
Sand, Fine	**27.3**	**5.20**	**5.00**	**30.3**	**26.9**
Sand	**29.1**	**30.7**	**46.9**	**48.1**	**87.2**
Silt	**52.2**	**0.500**	**3.50**	**26.1**	**4.40**
Clay	**18.7**	**0.200**	**0.700**	**4.20**	**1.70**
Fines	**70.9**	**0.700**	**4.20**	**30.3**	**6.10**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S1-49	S1-50	S1-50 DUP	S1-51	S1-52
Sample ID	030328S149SD	030328S150SD	030328S1142SD	030326S151SD	030324S152SD
Sample Date	3/28/2003	3/28/2003	3/28/2003	3/26/2003	3/24/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	1.00 U	1,120 U	1,101 U	0.200 U	0.200 U
Aroclor 1221	1.00 U	1,115 U	1,099 U	0.200 U	0.200 U
Aroclor 1232	2.52 U	2,902 U	2,805 U	0.520 U	0.510 U
Aroclor 1242	3.10 U	3,500 U	967 U	0.630 U	0.630 U
Aroclor 1248	2.69 U	3,090 U	2,956 U	0.560 U	0.550 U
Aroclor 1254	**25.0**	**690,000**	**520,000**	**24.0**	**15.0**
Aroclor 1260	1.72 U	24,457 U	17,568 U	0.340 U	**5.80**
Metals (mg/kg dry)					
Aluminum	**12,100**	**11,100**	**12,000**	**9,620**	**15,400**
Antimony	R	**0.400 J**	R	R	R
Arsenic	**5.00**	**11.4**	**8.00**	**0.700**	**2.60**
Barium	**113**	**166**	**163**	**50.0**	**144**
Beryllium	**0.200**	**0.300**	**0.300**	0.100 U	**0.300**
Cadmium	0.300 U	0.300 U	0.300 U	0.300 U	0.400 U
Calcium	**5,070**	**5,310**	**6,470**	**5,650**	**7,570**
Chromium	**20.0**	**25.1**	**20.4**	**13.5**	**22.0**
Cobalt	**11.1**	**13.6**	**13.3**	**8.30**	**12.2**
Copper	**34.9**	**53.9**	**62.4**	**30.6**	**22.5**
Iron	**28,600**	**33,300**	**30,500**	**22,000**	**22,500**
Lead	**9.90**	**98.0**	**25.0**	**3.70**	**12.0**
Magnesium	**6,680**	**4,590**	**5,500**	**8,990**	**6,570**
Manganese	**202**	**240**	**234**	**262**	**322**
Mercury	0.0300 U	0.0300 U	0.0300 U	0.0300 U	**0.100**
Nickel	**17.0**	**27.0**	**26.0**	**12.0**	**21.0**
Potassium	**750**	**740**	**750**	**570**	**1,200**
Selenium	0.300 U	0.300 U	0.300 U	0.300 U	0.400 U
Silver	0.500 U	0.400 U	0.400 U	0.400 U	0.600 U
Sodium	**530**	**480**	**620**	**630**	**1,090**
Thallium	**0.200**	**0.400**	**0.200**	0.100 U	**0.500**
Vanadium	**48.8**	**49.8**	**51.7**	**43.1**	**53.9**
Zinc	**66.0**	**158**	**153**	**57.5**	**134**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	**12.0**	**810**	**220**	2.00 U	**14.0**
Residual Range Organics	**43.0 L**	**240 A**	**110**	5.00 U	**42.0 O**
Butyltins (µg/kg dry)					
Dibutyltin dichloride	5.80 U	14.0 U	26.0 U	5.80 U	5.90 U
Monobutyltin trichloride	5.80 U	14.0 U	26.0 U	5.80 U	5.90 U
Tetrabutyltin	5.80 U	14.0 U	26.0 U	5.80 U	5.90 U
Tributyltin chloride	5.80 U	14.0 U	26.0 U	5.80 U	5.90 U
Pesticides (µg/kg dry)					
4,4'-DDD	0.0870 U	87.4 U	177 U	0.0870 U	0.0870 U
4,4'-DDE	16.0 U	9,400 U	9,300 U	0.0750 U	0.0760 U
4,4'-DDT	0.134 U	134 U	272 U	0.133 U	0.134 U
Aldrin	0.0350 U	35.0 U	70.9 U	0.0350 U	0.0350 U
BHC (alpha)	0.0520 U	52.4 U	106 U	0.0520 U	0.0520 U
BHC (beta)	0.0580 U	58.3 U	118 U	0.0580 U	0.0580 U
BHC (delta)	0.0430 U	42.7 U	86.6 U	0.0420 U	0.0430 U
BHC (gamma) Lindane	0.0410 U	40.8 U	82.7 U	0.0400 U	0.0410 U
Chlordane (alpha)	1.60 U	1,100 U	59.1 U	0.0290 U	0.0290 U
Chlordane (gamma)	0.0370 U	36.9 U	74.8 U	0.0370 U	0.0370 U
Dieldrin	13.0 U	58.3 U	118 U	0.0580 U	0.0580 U
Endosulfan I	0.0520 U	52.4 U	106 U	0.0520 U	0.0520 U
Endosulfan II	0.120 U	120 U	244 U	0.119 U	0.120 U
Endosulfan Sulfate	0.163 U	163 U	331 U	0.162 U	0.163 U
Endrin	0.0580 U	58.3 U	118 U	0.0580 U	0.0580 U
Endrin Aldehyde	9.00 U	5,800 U	5,600 U	0.110 U	0.111 U
Endrin Ketone	0.197 U	198 U	402 U	0.196 U	0.198 U
Heptachlor	0.0430 U	42.7 U	86.6 U	0.0420 U	0.0430 U
Heptachlor Epoxide	0.0430 U	42.7 U	86.6 U	0.0420 U	0.0430 U
Methoxychlor	0.581 U	583 U	1,180 U	0.577 U	0.582 U
Toxaphene	4.36 U	4,370 U	8,860 U	4.33 U	4.36 U
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	4.80 U	11.0 U	22.0 U	4.80 U	4.80 U
1,2-Dichlorobenzene	5.00 U	12.0 U	23.0 U	5.00 U	5.00 U
1,3-Dichlorobenzene	4.60 U	11.0 U	21.0 U	4.60 U	4.60 U
1,4-Dichlorobenzene	5.00 U	12.0 U	23.0 U	5.00 U	5.00 U
2,4,5-Trichlorophenol	7.60 U	18.0 U	36.0 U	7.60 U	7.70 U
2,4,6-Trichlorophenol	6.50 U	15.0 U	30.0 U	6.50 U	6.60 U
2,4-Dichlorophenol	9.50 U	23.0 U	45.0 U	9.50 U	9.70 U
2,4-Dimethylphenol	9.20 U	22.0 U	43.0 U	9.20 U	9.30 U
2,4-Dinitrophenol	97.0 U	230 U	450 U	97.0 U	98.0 U
2,4-Dinitrotoluene	5.20 U	12.0 U	24.0 U	5.20 U	5.20 U
2,6-Dinitrotoluene	4.80 U	11.0 U	22.0 U	4.80 U	4.80 U
2-Chloronaphthalene	5.50 U	13.0 U	26.0 U	5.50 U	5.60 U
2-Chlorophenol	6.30 U	15.0 U	29.0 U	6.30 U	6.40 U
2-Methylnaphthalene	4.80 U	11.0 U	22.0 U	4.80 U	4.80 U
2-Methylphenol	6.50 U	15.0 U	30.0 U	6.50 U	6.60 U
2-Nitroaniline	13.0 U	31.0 U	61.0 U	13.0 U	13.0 U
2-Nitrophenol	9.40 U	22.0 U	44.0 U	9.40 U	9.50 U

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S1-49	S1-50	S1-50 DUP	S1-51	S1-52
Sample ID	030328S149SD	030328S150SD	030328S1142SD	030326S151SD	030324S152SD
Sample Date	3/28/2003	3/28/2003	3/28/2003	3/26/2003	3/24/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	33.0 U	78.0 U	150 U	33.0 U	33.0 U
3-Nitroaniline	10.0 U	25.0 U	49.0 U	11.0 U	11.0 U
4,6-Dinitro-2-methylphenol	160 U	380 U	760 U	160 U	160 U
4-Bromophenyl Phenyl Ether	6.10 U	14.0 U	29.0 U	6.10 U	6.20 U
4-Chloro-3-methylphenol	9.00 U	21.0 U	42.0 U	9.00 U	9.10 U
4-Chloroaniline	14.0 U	32.0 U	63.0 U	14.0 U	14.0 U
4-Chlorophenyl Phenyl Ether	9.50 U	23.0 U	45.0 U	9.50 U	9.70 U
4-Nitroaniline	12.0 U	29.0 U	58.0 U	12.0 U	13.0 U
4-Nitrophenol	17.0 U	41.0 U	81.0 U	17.0 U	18.0 U
Acenaphthene	5.00 U	**53.0**	23.0 U	5.00 U	5.00 U
Acenaphthylene	4.40 U	10.0 U	21.0 U	4.40 U	4.40 U
Aniline	5.90 U	14.0 U	28.0 U	5.90 U	6.00 U
Anthracene	4.60 U	**96.0**	21.0 U	4.60 U	4.60 U
Benzo(a)anthracene	**11.0 J**	**1,200**	**110**	5.00 U	**28.0**
Benzo(a)pyrene	**12.0 J**	**1,300**	18.0 U	3.80 U	**24.0**
Benzo(b)fluoranthene	**11.0 J**	**1,400**	**100**	7.80 U	**26.0**
Benzo(g,h,i)perylene	5.20 U	**870**	24.0 U	5.20 U	**13.0 J**
Benzo(k)fluoranthene	11.0 U	**1,300 J**	**130**	11.0 U	**26.0**
Benzoic Acid	160 U	370 U	740 U	160 U	160 U
Benzyl Alcohol	19.0 U	45.0 U	89.0 U	19.0 U	19.0 U
Bis(2-chloroethoxy)methane	4.60 U	11.0 U	21.0 U	4.60 U	4.60 U
Bis(2-chloroethyl) Ether	6.50 U	15.0 U	30.0 U	6.50 U	6.60 U
Bis(2-chloroisopropyl) Ether	5.50 U	13.0 U	26.0 U	5.50 U	5.60 U
Bis(2-ethylhexyl) Phthalate	18.0 U	**180**	85.0 U	18.0 U	**420**
Butyl Benzyl Phthalate	4.80 U	11.0 U	22.0 U	4.80 U	4.80 U
Carbazole	4.60 U	**76.0 J**	21.0 U	4.60 U	4.60 U
Chrysene	**13.0 J**	**1,400**	**140**	5.90 U	**38.0**
Dibenz(a,h)anthracene	5.50 U	**320**	26.0 U	5.50 U	5.60 U
Dibenzofuran	4.80 U	11.0 U	22.0 U	4.80 U	4.80 U
Diethyl Phthalate	8.40 U	20.0 U	39.0 U	8.40 U	8.50 U
Dimethyl Phthalate	5.00 U	12.0 U	23.0 U	5.00 U	5.00 U
Di-n-butyl Phthalate	5.50 U	13.0 U	26.0 U	5.50 U	5.60 U
Di-n-octyl Phthalate	7.80 U	19.0 U	37.0 U	7.80 U	7.90 U
Fluoranthene	**22.0**	**920**	120 U	5.70 U	**60.0**
Fluorene	6.50 U	**29.0 J**	30.0 U	6.50 U	6.60 U
Hexachlorobenzene	5.30 U	13.0 U	25.0 U	5.30 U	5.40 U
Hexachlorobutadiene	6.50 U	15.0 U	30.0 U	6.50 U	6.60 U
Hexachlorocyclopentadiene	28.0 U	67.0 U	130 U	28.0 U	29.0 U
Hexachloroethane	7.30 U	17.0 U	34.0 U	7.30 U	7.30 U
Indeno(1,2,3-cd)pyrene	5.70 U	**960**	27.0 U	5.70 U	**16.0 J**
Isophorone	6.10 U	14.0 U	29.0 U	6.10 U	6.20 U
Naphthalene	5.00 U	12.0 U	23.0 U	5.00 U	5.00 U
Nitrobenzene	5.70 U	14.0 U	27.0 U	5.70 U	5.80 U
N-Nitrosodimethylamine	39.0 U	92.0 U	180 U	39.0 U	39.0 U
N-Nitrosodi-n-propylamine	6.90 U	16.0 U	32.0 U	6.90 U	6.90 U
N-Nitrosodiphenylamine	6.70 U	16.0 U	31.0 U	6.70 U	6.80 U
p-cresol (4-Methylphenol)	**180**	15.0 U	30.0 U	6.50 U	6.60 U
Pentachlorophenol	42.0 U	99.0 U	190 U	42.0 U	42.0 U
Phenanthrene	**15.0 J**	**450**	**120**	4.40 U	**29.0**
Phenol	**24.0**	15.0 U	29.0 U	6.30 U	6.40 U
Pyrene	**19.0**	**940**	120 U	9.90 U	**56.0**
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.300**	**0.370**	**0.490**	**0.130**	**2.30**
Solids, Total	**70.4**	**71.0**	**73.1**	**71.4**	**41.9**
Gravel	**68.2**	**27.7**	**36.1**	**37.0**	**0.400**
Sand, Coarse	**14.8**	**16.5**	**19.2**	**27.6**	**0.600**
Sand, Medium	**13.9**	**43.8**	**34.9**	**29.9**	**2.00**
Sand, Fine	**2.40**	**9.40**	**8.50**	**4.60**	**37.0**
Sand	**31.1**	**69.7**	**62.6**	**62.1**	**39.6**
Silt	**0.300**	**1.60**	**1.00**	**0.600**	**52.7**
Clay	**0.300**	**0.900**	**0.300**	**0.500**	**7.20**
Fines	**0.600**	**2.50**	**1.30**	**1.10**	**59.9**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S2-53	S2-54	S2-55	S2-56	S2-56 DUP
Sample ID	030318S253SD	030318S254SD	030319S255SD	030401S256SD	030401S2144SD
Sample Date	3/18/2003	3/18/2003	3/19/2003	4/1/2003	4/1/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	1.02 U	0.200 U	57.0 U	59.0 U	14.4 U
Aroclor 1221	1.03 U	0.200 U	57.4 U	57.4 U	14.3 U
Aroclor 1232	2.61 U	0.510 U	145 U	145 U	36.8 U
Aroclor 1242	3.20 U	0.630 U	180 U	180 U	12.6 U
Aroclor 1248	2.82 U	0.550 U	161 U	161 U	39.0 U
Aroclor 1254	**1,500**	**65.0**	**3,200**	**3,000 J**	**26,000 J**
Aroclor 1260	1.76 U	0.340 U	96.5 U	99.9 U	24.5 U
Metals (mg/kg dry)					
Aluminum	**16,300**	**16,100**	**12,200**	**13,400**	**13,300**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**155**	**86.8**	**128**	**96.7**	**104**
Beryllium	**0.300**	**0.200**	**0.200**	**0.200**	**0.200**
Cadmium	0.300 U	0.300 U	0.300 U	0.300 U	0.300 U
Calcium	-	-	-	-	-
Chromium	**23.6**	**19.7**	**23.0**	**31.6 J**	**18.9 J**
Cobalt	-	-	-	-	-
Copper	**41.5**	**31.9**	**28.4**	**34.7**	**37.4**
Iron	-	-	-	-	-
Lead	**6.10**	**21.0**	**31.0**	**7.30**	**7.10**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**20.0**	**20.0**	**18.0**	**21.0**	**20.0**
Potassium	-	-	-	-	-
Selenium	0.300 U	0.200 U	0.300 U	0.300 U	0.300 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	0.100 U	**0.300**	**0.300**	**0.200**	**0.300**
Vanadium	-	-	-	-	-
Zinc	**81.5**	**92.2**	**81.5**	**80.3**	**72.9**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.50 U	1.30 U	1.50 U	1.50 U	1.50 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S2-53	S2-54	S2-55	S2-56	S2-56 DUP
Sample ID	030318S253SD	030318S254SD	030319S255SD	030401S256SD	030401S2144SD
Sample Date	3/18/2003	3/18/2003	3/19/2003	4/1/2003	4/1/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	2.50 U	2.20 U	2.50 U	2.60 U	2.50 U
Acenaphthylene	1.70 U	1.50 U	1.70 U	1.70 U	1.70 U
Aniline	-	-	-	-	-
Anthracene	1.70 U	1.50 U	1.70 U	1.70 U	1.70 U
Benzo(a)anthracene	2.40 U	2.20 U	**15.0**	2.50 U	2.40 U
Benzo(a)pyrene	2.40 U	2.10 U	**16.0**	2.40 U	2.40 U
Benzo(b)fluoranthene	2.50 U	2.20 U	**14.0**	2.60 U	2.50 U
Benzo(g,h,i)perylene	1.90 U	1.70 U	**13.0**	2.00 U	2.00 U
Benzo(k)fluoranthene	3.30 U	2.90 U	**14.0**	3.40 U	3.30 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	-	-	-	-	-
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	2.70 U	2.40 U	**18.0**	2.80 U	2.70 U
Dibenz(a,h)anthracene	2.60 U	2.30 U	2.60 U	2.70 U	2.60 U
Dibenzofuran	2.20 U	1.90 U	2.20 U	2.20 U	2.20 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	2.10 U	1.90 U	**31.0**	**15.0**	2.10 U
Fluorene	1.70 U	1.50 U	1.70 U	1.70 U	1.70 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	2.10 U	1.90 U	**11.0**	2.20 U	2.20 U
Isophorone	-	-	-	-	-
Naphthalene	1.60 U	1.50 U	1.60 U	1.70 U	1.60 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	1.90 U	1.70 U	**14.0**	**10.0**	1.90 U
Phenol	-	-	-	-	-
Pyrene	1.90 U	1.70 U	**27.0**	**13.0**	2.00 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.920**	**0.570**	**0.160**	**0.320**	**0.290**
Solids, Total	**71.6**	**74.9**	**75.8**	**73.5**	**71.9**
Gravel	**4.90 J**	**33.9 J**	**12.0 J**	**2.91 J**	**9.77 J**
Sand, Coarse	**9.44 J**	**21.5 J**	**9.38 J**	**10.2 J**	**0.000 J**
Sand, Medium	**44.8 J**	**22.3 J**	**35.8 J**	**69.5 J**	**59.8 J**
Sand, Fine	**26.5 J**	**18.0 J**	**19.9 J**	**15.1 J**	**24.5 J**
Sand	**80.8 J**	**61.8 J**	**65.1 J**	**94.9 J**	**84.3 J**
Silt	**11.7 J**	**3.16 J**	**20.6 J**	**1.25 J**	**4.10 J**
Clay	**2.59 J**	**1.10 J**	**2.35 J**	**0.977 J**	**1.83 J**
Fines	**14.3 J**	**4.26 J**	**22.9 J**	**2.23 J**	**5.93 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S2-57	S2-58	S2-59	S2-60	S2-61
Sample ID	030401S257SD	030324S258SD	030314S259SD	030318S260SD	030318S261SD
Sample Date	4/1/2003	3/24/2003	3/14/2003	3/18/2003	3/18/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.200 U	0.200 U	0.200 U	0.200 U	0.220 U
Aroclor 1221	0.200 U	0.210 U	0.200 U	0.210 U	0.210 U
Aroclor 1232	0.500 U	0.520 U	0.520 U	0.520 U	0.530 U
Aroclor 1242	0.610 U	0.640 U	0.630 U	0.640 U	0.650 U
Aroclor 1248	0.540 U	0.560 U	0.560 U	0.560 U	0.560 U
Aroclor 1254	**150**	**16.0**	**380**	**240**	**120**
Aroclor 1260	0.340 U	0.340 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**13,100**	**18,700**	**23,700**	**21,500**	**19,900**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**96.8**	**162**	**204**	**173**	**159**
Beryllium	**0.300**	**0.400**	**0.400**	0.700 U	**0.300**
Cadmium	0.200 U	**0.900**	0.300 U	1.00 U	0.300 U
Calcium	-	-	-	-	-
Chromium	**21.6**	**22.0**	**26.4**	**37.0**	**27.0**
Cobalt	-	-	-	-	-
Copper	**30.1**	**28.6**	**47.8**	**99.0**	**40.1**
Iron	-	-	-	-	-
Lead	**5.80**	**17.0**	**14.1**	**9.40**	**8.60**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**17.0**	**22.0**	**23.0**	**31.0**	**21.0**
Potassium	-	-	-	-	-
Selenium	0.200 U	0.500 U	0.300 U	0.300 U	0.300 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	**0.200**	0.300 U	0.100 U	0.100 U	**0.300**
Vanadium	-	-	-	-	-
Zinc	**83.4**	**177**	**97.4**	**88.0**	**79.5**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.40 U	2.40 U	1.60 U	1.70 U	1.40 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S2-57	S2-58	S2-59	S2-60	S2-61
Sample ID	030401S257SD	030324S258SD	030314S259SD	030318S260SD	030318S261SD
Sample Date	4/1/2003	3/24/2003	3/14/2003	3/18/2003	3/18/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	2.40 U	3.90 U	2.70 U	2.90 U	2.40 U
Acenaphthylene	1.60 U	2.70 U	1.80 U	1.90 U	1.60 U
Aniline	-	-	-	-	-
Anthracene	1.60 U	2.60 U	1.80 U	1.90 U	1.60 U
Benzo(a)anthracene	2.30 U	3.80 U	2.60 U	2.70 U	2.30 U
Benzo(a)pyrene	2.20 U	3.70 U	2.60 U	2.70 U	2.30 U
Benzo(b)fluoranthene	2.40 U	3.90 U	2.70 U	2.90 U	2.40 U
Benzo(g,h,i)perylene	1.80 U	3.10 U	2.10 U	2.20 U	1.90 U
Benzo(k)fluoranthene	3.10 U	5.20 U	3.50 U	3.70 U	3.20 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	-	14.0 U	-	-	-
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	2.50 U	4.20 U	2.90 U	3.10 U	2.60 U
Dibenz(a,h)anthracene	2.40 U	4.10 U	2.80 U	2.90 U	2.50 U
Dibenzofuran	2.00 U	3.40 U	2.30 U	2.50 U	2.10 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	2.00 U	3.30 U	2.20 U	2.40 U	2.00 U
Fluorene	1.60 U	2.60 U	1.80 U	1.90 U	1.60 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	2.00 U	3.40 U	2.30 U	2.40 U	2.10 U
Isophorone	-	-	-	-	-
Naphthalene	1.50 U	2.50 U	1.70 U	1.90 U	1.60 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	1.80 U	3.00 U	2.10 U	2.20 U	1.90 U
Phenol	-	-	-	-	-
Pyrene	1.80 U	3.10 U	2.10 U	2.20 U	1.90 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.470**	**2.20**	**0.670**	**0.850**	**0.440**
Solids, Total	**77.9**	**31.9**	**72.5**	**65.3**	**74.3**
Gravel	**17.9 J**	**44.7 J**	**12.3 J**	**0.000 J**	**27.5 J**
Sand, Coarse	**34.7 J**	**4.65 J**	**12.3 J**	**3.12 J**	**21.6 J**
Sand, Medium	**26.5 J**	**7.10 J**	**29.9 J**	**29.6 J**	**16.0 J**
Sand, Fine	**13.5 J**	**21.2 J**	**28.0 J**	**49.1 J**	**25.0 J**
Sand	**74.7 J**	**32.9 J**	**70.2 J**	**81.7 J**	**62.5 J**
Silt	**5.70 J**	**16.7 J**	**12.7 J**	**14.6 J**	**7.82 J**
Clay	**1.71 J**	**5.75 J**	**4.81 J**	**3.61 J**	**2.12 J**
Fines	**7.41 J**	**22.4 J**	**17.5 J**	**18.3 J**	**9.94 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S2-62	S2-63	S2-64	S2-65	S2-66
Sample ID	030319S262SD	030403S263SD	030401S264SD	030306S265SD	030324S266SD
Sample Date	3/19/2003	4/3/2003	4/1/2003	3/6/2003	3/24/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.200 U	1.02 U	0.200 U	0.200 U	0.220 U
Aroclor 1221	0.210 U	1.02 U	0.200 U	0.210 U	0.210 U
Aroclor 1232	0.520 U	2.61 U	0.510 U	0.520 U	0.520 U
Aroclor 1242	0.640 U	3.20 U	0.620 U	0.640 U	0.640 U
Aroclor 1248	0.560 U	2.82 U	0.550 U	0.560 U	0.560 U
Aroclor 1254	**2.20**	**3,500**	**3,000**	**77.0**	**86.0**
Aroclor 1260	0.340 U	1.76 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**20,200**	**17,000**	**17,800**	**19,200**	**14,900**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**179**	**183**	**156**	**157**	**121**
Beryllium	**0.400**	**0.300**	0.400 U	**0.500**	**0.300**
Cadmium	0.300 U	0.300 U	0.700 U	**0.900**	**0.400**
Calcium	-	-	-	-	-
Chromium	**27.0**	**22.6**	**28.0**	**21.0**	**16.9**
Cobalt	-	-	-	-	-
Copper	**50.5**	**52.3**	**52.5**	**30.5**	**21.4**
Iron	-	-	-	-	-
Lead	**39.0**	**11.5**	**5.10**	**18.0**	**10.8**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**24.0**	**19.0**	**20.0**	**20.0**	**21.0**
Potassium	-	-	-	-	-
Selenium	0.300 U	0.300 U	0.300 U	0.600 U	0.400 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	0.200 U	**0.400**	**0.300**	0.300 U	0.200 U
Vanadium	-	-	-	-	-
Zinc	**69.1**	**106**	**58.0**	**160**	**136**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.40 U	1.70 U	1.60 U	2.10 U	2.00 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S2-62	S2-63	S2-64	S2-65	S2-66
Sample ID	030319S262SD	030403S263SD	030401S264SD	030306S265SD	030324S266SD
Sample Date	3/19/2003	4/3/2003	4/1/2003	3/6/2003	3/24/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	2.40 U	2.80 U	2.60 U	3.60 U	3.40 U
Acenaphthylene	1.60 U	1.90 U	1.80 U	2.40 U	2.30 U
Aniline	-	-	-	-	-
Anthracene	1.60 U	1.80 U	1.70 U	**26.0**	2.20 U
Benzo(a)anthracene	2.30 U	**35.0**	2.50 U	**92.0**	3.20 U
Benzo(a)pyrene	**9.50**	**37.0**	2.50 U	**77.0**	3.20 U
Benzo(b)fluoranthene	2.40 U	**33.0**	2.60 U	**74.0**	3.40 U
Benzo(g,h,i)perylene	1.90 U	**26.0**	2.00 U	**37.0**	2.60 U
Benzo(k)fluoranthene	3.10 U	**32.0**	3.40 U	**77.0**	4.40 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	-	-	-	**51.0**	-
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	2.60 U	**38.0**	2.80 U	**96.0**	3.60 U
Dibenz(a,h)anthracene	2.50 U	2.80 U	2.70 U	**20.0**	3.50 U
Dibenzofuran	2.10 U	2.40 U	2.20 U	3.10 U	2.90 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	**11.0**	**75.0**	2.20 U	**230**	2.80 U
Fluorene	1.60 U	1.90 U	1.70 U	2.40 U	2.30 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	2.10 U	**23.0**	2.20 U	**38.0**	2.90 U
Isophorone	-	-	-	-	-
Naphthalene	1.60 U	1.80 U	1.70 U	2.30 U	2.20 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	1.80 U	**42.0**	2.00 U	**100**	2.60 U
Phenol	-	-	-	-	-
Pyrene	**10.0**	**60.0**	2.00 U	**140**	2.60 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**1.00**	**1.10**	**0.320**	**1.90**	**1.10**
Solids, Total	**62.7**	**63.0**	**67.8**	**34.8**	**64.9**
Gravel	**21.4 J**	**16.7 J**	**27.8 J**	**3.97 J**	**1.66 J**
Sand, Coarse	**5.99 J**	**7.83 J**	**19.0 J**	**4.73 J**	**2.53 J**
Sand, Medium	**36.6 J**	**37.5 J**	**22.6 J**	**8.67 J**	**2.36 J**
Sand, Fine	**24.8 J**	**29.1 J**	**20.1 J**	**46.9 J**	**73.6 J**
Sand	**67.4 J**	**74.5 J**	**61.7 J**	**60.3 J**	**78.5 J**
Silt	**7.99 J**	**6.15 J**	**8.79 J**	**26.5 J**	**15.6 J**
Clay	**3.20 J**	**2.64 J**	**1.71 J**	**9.22 J**	**4.29 J**
Fines	**11.2 J**	**8.79 J**	**10.5 J**	**35.8 J**	**19.9 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S2-67	S2-67 DUP	S2-68	S2-69	S2-70
Sample ID	030305S267SD	030305S2136SD	030305S268SD	030317S269SD	030314S270SD
Sample Date	3/5/2003	3/5/2003	3/5/2003	3/17/2003	3/14/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	1.02 U	0.200 U	0.200 U	0.200 U	0.200 U
Aroclor 1221	1.02 U	0.200 U	0.200 U	0.200 U	0.200 U
Aroclor 1232	2.61 U	0.510 U	0.520 U	0.510 U	0.510 U
Aroclor 1242	3.20 U	0.180 U	0.630 U	0.620 U	0.620 U
Aroclor 1248	2.82 U	0.550 U	0.560 U	0.550 U	0.550 U
Aroclor 1254	**100**	**120**	**99.0**	**5,800**	**75.0**
Aroclor 1260	1.76 U	0.340 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**12,800**	**12,300**	**18,900**	**18,700**	**23,800**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**130**	**119**	**152**	**122**	**218**
Beryllium	**0.300**	**0.300**	**0.400**	**0.500**	0.300 U
Cadmium	**0.400**	**0.400**	**0.900**	**0.300**	0.700 U
Calcium	-	-	-	-	-
Chromium	**16.3**	**16.0**	**21.0**	**17.5**	**29.0**
Cobalt	-	-	-	-	-
Copper	**19.4**	**18.4**	**28.8**	**44.0**	**45.8**
Iron	-	-	-	-	-
Lead	**13.4**	**13.0**	**17.0**	**13.6**	**8.80**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**16.0**	**16.0**	**20.0**	**17.0**	**24.0**
Potassium	-	-	-	-	-
Selenium	0.300 U	0.300 U	0.500 U	0.300 U	0.300 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	0.100 U	0.200 U	0.300 U	0.200 U	**0.300**
Vanadium	-	-	-	-	-
Zinc	**132**	**126**	**154**	**105**	**87.0**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.70 U	1.70 U	2.10 U	1.70 U	1.60 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
(Page 26 of 44)

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S2-67	S2-67 DUP	S2-68	S2-69	S2-70
Sample ID	030305S267SD	030305S2136SD	030305S268SD	030317S269SD	030314S270SD
Sample Date	3/5/2003	3/5/2003	3/5/2003	3/17/2003	3/14/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	**18.0**	2.90 U	3.50 U	2.70 U	2.60 U
Acenaphthylene	1.90 U	2.00 U	2.40 U	1.90 U	1.80 U
Aniline	-	-	-	-	-
Anthracene	**20.0**	1.90 U	2.30 U	1.80 U	1.70 U
Benzo(a)anthracene	**140 J**	2.80 UJ	3.30 U	2.60 U	2.50 U
Benzo(a)pyrene	**120 J**	2.80 UJ	3.30 U	2.60 U	2.50 U
Benzo(b)fluoranthene	**100 J**	12.0 UJ	14.0 U	2.70 U	2.60 U
Benzo(g,h,i)perylene	**62.0 J**	2.30 UJ	2.70 U	2.10 U	2.00 U
Benzo(k)fluoranthene	**100 J**	3.80 UJ	4.60 U	3.60 U	3.40 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	-	-	-	-	-
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	**130 J**	3.10 UJ	3.80 U	3.00 U	2.80 U
Dibenz(a,h)anthracene	25.0 U Z	3.00 UJ	3.60 U	2.80 U	2.70 U
Dibenzofuran	2.40 U	2.50 U	3.00 U	2.40 U	2.20 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	**210 J**	2.40 UJ	2.90 U	2.30 U	2.20 U
Fluorene	**9.00 J Z**	1.90 U	2.30 U	1.80 U	1.70 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	**60.0 J**	2.50 UJ	3.00 U	2.40 U	2.20 U
Isophorone	-	-	-	-	-
Naphthalene	1.80 U	1.90 U	2.20 U	1.80 U	1.70 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	**86.0**	2.20 U	2.70 U	2.10 U	2.00 U
Phenol	-	-	-	-	-
Pyrene	**180 J Z**	2.30 U	2.70 U	2.10 U	2.00 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**1.10**	**0.900**	**0.970**	**0.860**	**0.420**
Solids, Total	**62.5**	**63.4**	**50.2**	**66.5**	**68.7**
Gravel	**0.000 J**	**0.000 J**	**0.000 J**	-	**3.82 J**
Sand, Coarse	**1.11 J**	**0.416 J**	**1.10 J**	-	**6.94 J**
Sand, Medium	**1.71 J**	**0.744 J**	**1.55 J**	-	**16.5 J**
Sand, Fine	**57.3 J**	**62.0 J**	**15.1 J**	-	**48.1 J**
Sand	**60.1 J**	**63.2 J**	**17.8 J**	-	**71.6 J**
Silt	**33.9 J**	**31.3 J**	**69.9 J**	-	**18.3 J**
Clay	**5.99 J**	**5.51 J**	**12.3 J**	-	**6.24 J**
Fines	**39.9 J**	**36.8 J**	**82.2 J**	-	**24.6 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S2-71	S2-72	S2-73	S2-74	S2-75
Sample ID	030314S271SD	030324S272SD	030306S273SD	030305S274SD	030325S275SD
Sample Date	3/14/2003	3/24/2003	3/6/2003	3/5/2003	3/25/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.200 U	0.220 U	0.220 U	0.220 U	0.200 U
Aroclor 1221	0.200 U	0.210 U	0.210 U	0.210 U	0.200 U
Aroclor 1232	0.520 U	0.530 U	0.520 U	0.520 U	0.510 U
Aroclor 1242	0.630 U	0.650 U	0.640 U	0.640 U	0.630 U
Aroclor 1248	0.560 U	0.560 U	0.560 U	0.560 U	0.550 U
Aroclor 1254	**110**	**400**	**320**	**230**	**100**
Aroclor 1260	0.340 U	0.340 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**16,100**	**15,000**	**14,000**	**12,600**	**14,400**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**151**	**137**	**132**	**133**	**133**
Beryllium	**0.300**	**0.300**	**0.300**	**0.300**	**0.300**
Cadmium	**0.300**	**0.900**	**0.700**	**0.400**	**0.500**
Calcium	-	-	-	-	-
Chromium	**18.9**	**17.0**	**16.9**	**16.5**	**17.0**
Cobalt	-	-	-	-	-
Copper	**31.8**	**24.9**	**22.8**	**18.9**	**22.2**
Iron	-	-	-	-	-
Lead	**12.1**	**14.0**	**13.4**	**12.9**	**13.5**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**16.0**	**18.0**	**17.0**	**16.0**	**16.0**
Potassium	-	-	-	-	-
Selenium	0.300 U	0.400 U	0.300 U	0.300 U	0.400 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	**0.200**	0.200 U	**0.200**	0.100 U	0.200 U
Vanadium	-	-	-	-	-
Zinc	**106**	**147**	**143**	**126**	**130**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.40 U	2.60 U	1.70 U	1.60 U	2.00 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S2-71	S2-72	S2-73	S2-74	S2-75
Sample ID	030314S271SD	030324S272SD	030306S273SD	030305S274SD	030325S275SD
Sample Date	3/14/2003	3/24/2003	3/6/2003	3/5/2003	3/25/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	2.40 U	4.30 U	2.80 U	2.70 U	3.30 U
Acenaphthylene	1.60 U	2.90 U	1.90 U	1.80 U	2.30 U
Aniline	-	-	-	-	-
Anthracene	1.60 U	2.80 U	1.80 U	1.80 U	2.20 U
Benzo(a)anthracene	**9.50**	4.10 U	2.70 U	2.60 U	3.20 U
Benzo(a)pyrene	**28.0**	4.00 U	2.60 U	2.50 U	3.20 U
Benzo(b)fluoranthene	**37.0**	4.30 U	2.80 U	2.70 U	3.30 U
Benzo(g,h,i)perylene	**24.0**	3.30 U	2.20 U	2.10 U	2.60 U
Benzo(k)fluoranthene	**17.0**	5.60 U	3.60 U	3.50 U	4.40 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	-	**24.0**	-	-	-
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	**11.0**	4.60 U	3.00 U	2.90 U	3.60 U
Dibenz(a,h)anthracene	**16.0**	4.40 U	2.90 U	2.70 U	3.40 U
Dibenzofuran	2.10 U	3.70 U	2.40 U	2.30 U	2.90 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	**15.0**	3.60 U	**11.0**	2.20 U	2.80 U
Fluorene	1.60 U	2.90 U	1.90 U	1.80 U	2.20 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	**27.0**	3.70 U	2.40 U	2.30 U	2.90 U
Isophorone	-	-	-	-	-
Naphthalene	1.60 U	2.80 U	1.80 U	1.70 U	2.20 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	**9.50**	3.30 U	2.10 U	2.00 U	2.60 U
Phenol	-	-	-	-	-
Pyrene	**11.0**	3.30 U	2.20 U	**10.0**	2.60 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.840**	**1.80**	**1.00**	**0.910**	**1.80**
Solids, Total	**73.2**	**33.8**	**61.6**	**68.1**	**34.3**
Gravel	**19.2 J**	-	**0.000 J**	**0.000 J**	**0.000 J**
Sand, Coarse	**24.2 J**	-	**0.000 J**	**0.313 J**	**0.194 J**
Sand, Medium	**14.2 J**	-	**0.964 J**	**1.21 J**	**1.84 J**
Sand, Fine	**30.0 J**	-	**30.3 J**	**52.3 J**	**48.8 J**
Sand	**68.4 J**	-	**31.3 J**	**53.8 J**	**50.8 J**
Silt	**10.8 J**	-	**62.7 J**	**42.7 J**	**42.7 J**
Clay	**1.58 J**	-	**6.03 J**	**3.48 J**	**6.46 J**
Fines	**12.3 J**	-	**68.7 J**	**46.2 J**	**49.2 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S2-76	S2-77	S2-78	SE-117	TR-1
Sample ID	030313S276SD	030314S277SD	030327S278SD	030305SE117SD	030317TR1SD
Sample Date	3/13/2003	3/14/2003	3/27/2003	3/5/2003	3/17/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.220 U	0.200 U	0.200 U	0.200 U	0.200 U
Aroclor 1221	0.210 U	0.210 U	0.200 U	0.200 U	0.200 U
Aroclor 1232	0.530 U	0.520 U	0.520 U	0.510 U	0.510 U
Aroclor 1242	0.650 U	0.640 U	0.640 U	0.630 U	0.630 U
Aroclor 1248	0.580 U	0.560 U	0.560 U	0.550 U	0.550 U
Aroclor 1254	**41.0**	**50.0**	**1,100**	**540**	**56.0**
Aroclor 1260	0.340 U	0.340 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**17,800**	**17,000**	**14,400**	**15,600**	**22,600**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**91.5**	**148**	**162**	**143**	**180**
Beryllium	**0.500**	**0.300**	**0.200**	**0.300**	**0.400**
Cadmium	0.300 U	**0.500**	0.300 U	**0.400**	0.700 U
Calcium	-	-	-	-	-
Chromium	**16.4**	**19.6**	**21.5**	**15.2**	**26.0**
Cobalt	-	-	-	-	-
Copper	**50.6**	**25.7**	**38.0**	**25.9**	**45.7**
Iron	-	-	-	-	-
Lead	**8.40**	**16.9**	**7.00**	**9.60**	**12.0**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**17.0**	**16.0**	**22.0**	**16.0**	**22.0**
Potassium	-	-	-	-	-
Selenium	0.300 U	0.400 U	0.300 U	0.300 U	0.300 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	**0.300**	**0.400**	**0.200**	0.200 U	**0.300**
Vanadium	-	-	-	-	-
Zinc	**70.7**	**114**	**92.2**	**105**	**117**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.60 U	2.00 U	1.50 U	1.70 U	1.70 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	S2-76	S2-77	S2-78	SE-117	TR-1
Sample ID	030313S276SD	030314S277SD	030327S278SD	030305SE117SD	030317TR1SD
Sample Date	3/13/2003	3/14/2003	3/27/2003	3/5/2003	3/17/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	2.70 U	3.30 U	2.50 U	**2.80**	2.80 U
Acenaphthylene	1.80 U	2.20 U	1.70 U	1.90 U	1.90 U
Aniline	-	-	-	-	-
Anthracene	1.80 U	2.20 U	1.60 U	1.90 U	1.80 U
Benzo(a)anthracene	2.60 U	3.20 U	2.40 U	**24.0**	2.70 U
Benzo(a)pyrene	2.60 U	3.10 U	2.30 U	**32.0**	2.60 U
Benzo(b)fluoranthene	2.70 U	3.30 U	2.50 U	**30.0**	2.80 U
Benzo(g,h,i)perylene	2.10 U	2.60 U	1.90 U	**17.0**	2.20 U
Benzo(k)fluoranthene	3.60 U	4.30 U	3.20 U	**22.0**	3.60 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	-	-	-	10.0 U Z	-
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	2.90 U	3.60 U	2.70 U	**29.0**	3.00 U
Dibenz(a,h)anthracene	2.80 U	3.40 U	2.50 U	2.90 U	2.90 U
Dibenzofuran	2.30 U	2.90 U	2.10 U	2.50 U	2.40 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	2.30 U	2.80 U	2.00 U	**47.0**	2.30 U
Fluorene	1.80 U	2.20 U	1.60 U	1.90 U	1.90 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	2.30 U	2.80 U	2.10 U	**17.0**	2.40 U
Isophorone	-	-	-	-	-
Naphthalene	1.80 U	2.10 U	1.60 U	1.80 U	1.80 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	2.10 U	2.50 U	1.90 U	**36.0**	2.10 U
Phenol	-	-	-	-	-
Pyrene	2.10 U	2.60 U	1.90 U	**45.0**	2.20 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.340**	**0.940**	**0.540**	**1.20**	**1.00**
Solids, Total	**72.5**	**65.6**	**71.0**	**63.5**	**73.5**
Gravel	**2.36 J**	**33.3 J**	**24.7 J**	**1.78 J**	**70.8 J**
Sand, Coarse	**8.48 J**	**19.3 J**	**16.5 J**	**0.889 J**	**3.30 J**
Sand, Medium	**47.0 J**	**1.86 J**	**19.0 J**	**3.40 J**	**6.60 J**
Sand, Fine	**26.5 J**	**3.97 J**	**28.8 J**	**60.4 J**	**8.52 J**
Sand	**82.0 J**	**25.1 J**	**64.4 J**	**64.7 J**	**18.4 J**
Silt	**13.0 J**	**39.3 J**	**9.55 J**	**27.7 J**	**9.56 J**
Clay	**2.61 J**	**2.30 J**	**1.34 J**	**5.89 J**	**1.19 J**
Fines	**15.6 J**	**41.6 J**	**10.9 J**	**33.6 J**	**10.8 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
(Page 31 of 44)

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	TR-10	TR-11	TR-12	TR-13	TR-13 DUP
Sample ID	030331TR10SD	030327TR11SD	030404TR12SD	030331TR13SD	030331TR143SD
Sample Date	3/31/2003	3/27/2003	4/4/2003	3/31/2003	3/31/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.200 U	1.00 U	0.200 U	0.200 U	0.200 U
Aroclor 1221	0.200 U	1.02 U	0.210 U	0.200 U	0.200 U
Aroclor 1232	0.510 U	2.61 U	0.520 U	0.520 U	0.520 U
Aroclor 1242	0.630 U	3.10 U	0.640 U	0.630 U	0.180 U
Aroclor 1248	0.550 U	2.82 U	0.560 U	0.560 U	0.560 U
Aroclor 1254	**3.10**	**430**	**6.80**	**2.70**	**0.900 J**
Aroclor 1260	0.340 U	1.72 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**11,300**	**14,100**	**13,800**	**8,100**	**9,570**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**52.1**	**117**	**100**	**25.3**	**26.2**
Beryllium	0.100 U	**0.200**	**0.200**	0.100 U	0.100 U
Cadmium	0.200 U	0.300 U	0.300 U	0.200 U	0.200 U
Calcium	-	-	-	-	-
Chromium	**14.7**	**22.4**	**17.5**	**11.6**	**12.5**
Cobalt	-	-	-	-	-
Copper	**28.8**	**25.8**	**29.0**	**34.2**	**40.8**
Iron	-	-	-	-	-
Lead	**4.80 J**	**6.90 J**	**6.00 J**	**3.70 J**	**4.80 J**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**15.0**	**17.0**	**16.0**	**12.0**	**14.0**
Potassium	-	-	-	-	-
Selenium	**0.800**	0.300 U	**0.600**	0.200 U	0.300 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	0.100 U	0.100 U	**0.100**	0.100 U	**0.200**
Vanadium	-	-	-	-	-
Zinc	**77.9**	**81.8**	**80.7**	**57.0**	**62.5**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.40 U	1.40 U	1.40 U	1.30 U	1.30 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	TR-10	TR-11	TR-12	TR-13	TR-13 DUP
Sample ID	030331TR10SD	030327TR11SD	030404TR12SD	030331TR13SD	030331TR143SD
Sample Date	3/31/2003	3/27/2003	4/4/2003	3/31/2003	3/31/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	2.40 U	2.30 U	2.30 U	2.20 U	2.10 U
Acenaphthylene	1.60 U	1.60 U	1.60 U	1.50 U	1.40 U
Aniline	-	-	-	-	-
Anthracene	1.60 U	1.50 U	1.50 U	1.50 U	1.40 U
Benzo(a)anthracene	2.30 U	2.20 U	2.20 U	2.10 U	2.00 U
Benzo(a)pyrene	2.30 U	2.20 U	2.20 U	2.10 U	2.00 U
Benzo(b)fluoranthene	2.40 U	2.30 U	2.30 U	2.20 U	2.10 U
Benzo(g,h,i)perylene	1.90 U	1.80 U	1.80 U	1.70 U	1.60 U
Benzo(k)fluoranthene	3.10 U	3.00 U	3.00 U	2.90 U	2.80 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	-	-	-	-	-
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	2.60 U	2.50 U	2.50 U	2.40 U	2.30 U
Dibenz(a,h)anthracene	2.50 U	2.40 U	2.40 U	2.30 U	2.20 U
Dibenzofuran	2.10 U	2.00 U	2.00 U	1.90 U	1.80 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	2.00 U	1.90 U	1.90 U	1.80 U	1.80 U
Fluorene	1.60 U	1.60 U	1.60 U	1.50 U	1.40 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	2.00 U	2.00 U	2.00 U	1.90 U	1.80 U
Isophorone	-	-	-	-	-
Naphthalene	1.50 U	1.50 U	1.50 U	1.40 U	1.40 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	1.80 U	1.80 U	1.80 U	1.70 U	1.60 U
Phenol	-	-	-	-	-
Pyrene	1.90 U	1.80 U	1.80 U	1.70 U	1.60 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.160**	**0.480**	**0.360**	**0.140**	**0.150**
Solids, Total	**83.4**	**73.0**	**72.9**	**75.8**	**80.1**
Gravel	**55.2 J**	**42.3 J**	**24.0 J**	**36.1 J**	**40.5 J**
Sand, Coarse	**25.8 J**	**9.79 J**	**11.9 J**	**10.5 J**	**12.4 J**
Sand, Medium	**16.9 J**	**25.2 J**	**31.6 J**	**30.6 J**	**32.4 J**
Sand, Fine	**1.34 J**	**14.1 J**	**27.5 J**	**11.1 J**	**11.7 J**
Sand	**44.0 J**	**49.1 J**	**71.0 J**	**52.3 J**	**56.6 J**
Silt	**0.793 J**	**8.62 J**	**4.65 J**	**9.94 J**	**1.85 J**
Clay	**0.000 J**	**0.000 J**	**0.423 J**	**1.63 J**	**1.11 J**
Fines	**0.793 J**	**8.62 J**	**5.07 J**	**11.6 J**	**2.96 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	TR-14	TR-15	TR-16	TR-17	TR-18
Sample ID	030331TR14SD	030320TR15SD	030320TR16SD	030306TR17SD	030306TR18SD
Sample Date	3/31/2003	3/20/2003	3/20/2003	3/20/2003	3/6/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.220 U	0.200 U	0.200 U	0.200 U	0.220 U
Aroclor 1221	0.210 U	0.200 U	0.210 U	0.210 U	0.210 U
Aroclor 1232	0.520 U	0.520 U	0.520 U	0.520 U	0.530 U
Aroclor 1242	0.640 U	0.630 U	0.640 U	0.640 U	0.650 U
Aroclor 1248	0.560 U	0.560 U	0.560 U	0.560 U	0.560 U
Aroclor 1254	**1.80**	**17.0**	**18.0**	**960**	**1,900**
Aroclor 1260	0.340 U	0.340 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**9,670**	**12,700**	**25,800**	**15,200**	**15,100**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**283**	**130**	**224**	**118**	**140**
Beryllium	0.100 U	**0.200**	**0.600**	**0.300**	**0.300**
Cadmium	0.300 U	**0.600**	**1.20**	**0.700**	**0.600**
Calcium	-	-	-	-	-
Chromium	**14.4**	**30.1**	**29.0**	**15.0**	**17.0**
Cobalt	-	-	-	-	-
Copper	**27.6**	**38.5**	**38.4**	**24.1**	**21.4**
Iron	-	-	-	-	-
Lead	**3.70 J**	**21.5**	**23.0 J**	**15.0 J**	**17.6 J**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**13.0**	**19.0**	**28.0**	**15.0**	**17.0**
Potassium	-	-	-	-	-
Selenium	0.300 U	0.300 U	0.900 U	0.500 U	0.400 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	0.100 U	0.200 U	0.400 U	0.200 U	0.200 U
Vanadium	-	-	-	-	-
Zinc	**50.6**	**152**	**226**	**116**	**140**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.80 U	1.70 U	2.00 U	2.10 U	2.20 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	TR-14	TR-15	TR-16	TR-17	TR-18
Sample ID	030331TR14SD	030320TR15SD	030320TR16SD	030306TR17SD	030306TR18SD
Sample Date	3/31/2003	3/20/2003	3/20/2003	3/20/2003	3/6/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	2.90 U	2.80 U	3.30 U	3.50 U	3.70 U
Acenaphthylene	2.00 U	1.90 U	2.20 U	2.40 U	2.50 U
Aniline	-	-	-	-	-
Anthracene	1.90 U	1.80 U	2.20 U	2.30 U	2.40 U
Benzo(a)anthracene	2.80 U	**23.0**	3.20 U	**21.0**	3.50 U
Benzo(a)pyrene	2.80 U	**23.0**	3.10 U	**19.0**	3.50 U
Benzo(b)fluoranthene	2.90 U	**24.0**	3.30 U	**25.0**	13.0 U
Benzo(g,h,i)perylene	2.30 U	**15.0**	2.60 U	2.70 U	2.90 U
Benzo(k)fluoranthene	3.90 U	**12.0**	4.30 U	**16.0**	4.80 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	-	**170**	**40.0**	**170**	**380**
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	3.20 U	**24.0**	3.60 U	**23.0**	**16.0**
Dibenz(a,h)anthracene	3.00 U	2.90 U	3.40 U	3.60 U	3.80 U
Dibenzofuran	2.50 U	2.40 U	2.80 U	3.00 U	3.20 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	2.50 U	**19.0**	2.70 U	**40.0**	3.10 U
Fluorene	2.00 U	1.90 U	2.20 U	2.30 U	2.50 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	2.50 U	**12.0**	2.80 U	3.00 U	3.10 U
Isophorone	-	-	-	-	-
Naphthalene	1.90 U	1.80 U	2.10 U	2.30 U	2.40 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	2.30 U	**13.0**	2.50 U	**21.0**	2.80 U
Phenol	-	-	-	-	-
Pyrene	2.30 U	**18.0**	2.60 U	**34.0**	2.90 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.130**	**0.840**	**1.80**	**1.60**	**1.00**
Solids, Total	**74.8**	**61.9**	**42.4**	**47.4**	**55.8**
Gravel	**48.7 J**	**0.587 J**	**0.000 J**	**0.000 J**	**0.000 J**
Sand, Coarse	**13.8 J**	**0.695 J**	**0.103 J**	**0.235 J**	**0.0699 J**
Sand, Medium	**22.3 J**	**2.73 J**	**2.84 J**	**1.99 J**	**1.84 J**
Sand, Fine	**10.4 J**	**68.6 J**	**45.3 J**	**46.8 J**	**62.2 J**
Sand	**46.5 J**	**72.0 J**	**48.3 J**	**49.0 J**	**64.1 J**
Silt	**3.49 J**	**25.1 J**	**49.7 J**	**46.5 J**	**32.4 J**
Clay	**1.27 J**	**2.29 J**	**2.06 J**	**4.52 J**	**3.49 J**
Fines	**4.76 J**	**27.4 J**	**51.7 J**	**51.0 J**	**35.9 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	TR-19	TR-2	TR-20	TR-21	TR-22
Sample ID	030306TR19SD	030317TR2SD	030306TR20SD	030306TR21SD	030306TR22SD
Sample Date	3/6/2003	3/17/2003	3/6/2003	3/6/2003	3/6/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.200 U	0.200 U	0.220 U	0.200 U	0.200 U
Aroclor 1221	0.200 U	0.200 U	0.210 U	0.200 U	0.200 U
Aroclor 1232	0.510 U	0.510 U	0.530 U	0.510 U	0.510 U
Aroclor 1242	0.620 U	0.630 U	0.640 U	0.620 U	0.620 U
Aroclor 1248	0.550 U	0.550 U	0.560 U	0.550 U	0.550 U
Aroclor 1254	**630**	**410**	**17.0**	**1,300**	**14.0**
Aroclor 1260	0.340 U	0.340 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**13,100**	**16,700**	**21,300**	**15,000**	**16,900**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**120**	**127**	**173**	**135**	**151**
Beryllium	**0.300**	0.300 U	**0.500**	**0.300**	**0.400**
Cadmium	**0.500**	0.700 U	**0.700**	**0.500**	**0.600**
Calcium	-	-	-	-	-
Chromium	**18.2**	**23.0**	**21.0**	**17.3**	**20.0**
Cobalt	-	-	-	-	-
Copper	**19.6**	**28.9**	**33.9**	**21.9**	**26.4**
Iron	-	-	-	-	-
Lead	**13.9 J**	**9.70**	**17.7 J**	**13.3 J**	**14.7 J**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**16.0**	**19.0**	**20.0**	**18.0**	**18.0**
Potassium	-	-	-	-	-
Selenium	0.300 U	0.300 U	0.500 U	0.300 U	0.400 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	0.200 U	**0.300**	0.300 U	0.200 U	0.200 U
Vanadium	-	-	-	-	-
Zinc	**135**	**105**	**152**	**130**	**140**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.60 U	1.40 U	1.60 U	1.60 U	1.90 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	TR-19	TR-2	TR-20	TR-21	TR-22
Sample ID	030306TR19SD	030317TR2SD	030306TR20SD	030306TR21SD	030306TR22SD
Sample Date	3/6/2003	3/17/2003	3/6/2003	3/6/2003	3/6/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	2.60 U	2.40 U	2.70 U	2.70 U	3.10 U
Acenaphthylene	1.80 U	1.60 U	1.80 U	1.90 U	2.10 U
Aniline	-	-	-	-	-
Anthracene	1.70 U	1.60 U	1.80 U	1.80 U	2.10 U
Benzo(a)anthracene	2.50 U	2.30 U	2.60 U	2.60 U	3.00 U
Benzo(a)pyrene	2.50 U	2.30 U	2.60 U	2.60 U	3.00 U
Benzo(b)fluoranthene	2.60 U	2.40 U	2.70 U	2.70 U	3.10 U
Benzo(g,h,i)perylene	2.00 U	1.80 U	2.10 U	2.10 U	2.40 U
Benzo(k)fluoranthene	3.40 U	3.10 U	3.60 U	3.60 U	4.10 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	**320**	-	**22.0**	**11.0**	**14.0**
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	2.80 U	2.60 U	2.90 U	3.00 U	3.40 U
Dibenz(a,h)anthracene	2.70 U	2.40 U	2.80 U	2.80 U	3.20 U
Dibenzofuran	2.20 U	2.10 U	2.30 U	2.40 U	2.70 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	2.20 U	2.00 U	2.30 U	2.30 U	2.60 U
Fluorene	1.70 U	1.60 U	1.80 U	1.80 U	2.10 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	2.20 U	2.00 U	2.30 U	2.30 U	2.70 U
Isophorone	-	-	-	-	-
Naphthalene	1.70 U	1.50 U	1.80 U	1.80 U	2.00 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	2.00 U	1.80 U	2.10 U	2.10 U	2.40 U
Phenol	-	-	-	-	-
Pyrene	2.00 U	1.80 U	2.10 U	2.10 U	2.40 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.750**	**0.720**	**1.80**	**0.580**	**1.60**
Solids, Total	**64.5**	**79.0**	**43.5**	**65.5**	**50.5**
Gravel	**0.000 J**	**6.63 J**	**0.000 J**	**0.000 J**	**0.000 J**
Sand, Coarse	**0.0345 J**	**16.2 J**	**0.300 J**	**0.0344 J**	**0.116 J**
Sand, Medium	**1.50 J**	**40.6 J**	**1.68 J**	**1.89 J**	**2.00 J**
Sand, Fine	**77.1 J**	**23.0 J**	**67.7 J**	**63.0 J**	**64.3 J**
Sand	**78.6 J**	**79.7 J**	**69.7 J**	**64.9 J**	**66.4 J**
Silt	**18.5 J**	**12.8 J**	**27.3 J**	**30.8 J**	**24.9 J**
Clay	**2.87 J**	**0.945 J**	**2.99 J**	**4.30 J**	**8.66 J**
Fines	**21.4 J**	**13.7 J**	**30.3 J**	**35.1 J**	**33.6 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	TR-23	TR-24	TR-25	TR-26	TR-27
Sample ID	030318TR23SD	030318TR24SD	030326TR25SD	030326TR26SD	030319TR27SD
Sample Date	3/18/2003	3/18/2003	3/26/2003	3/26/2003	3/19/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Aroclor 1221	0.200 U	0.200 U	0.210 U	0.200 U	0.200 U
Aroclor 1232	0.520 U	0.520 U	0.520 U	0.520 U	0.510 U
Aroclor 1242	0.630 U	0.630 U	0.640 U	0.630 U	0.630 U
Aroclor 1248	0.560 U	0.560 U	0.560 U	0.560 U	0.550 U
Aroclor 1254	**660**	**160**	**34.0**	**120**	**39.0**
Aroclor 1260	0.340 U	0.340 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**17,200**	**18,200**	**14,300**	**12,600**	**11,100**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**82.8**	**130**	**118**	**107**	**94.9**
Beryllium	**0.200**	0.300 U	0.300 U	**0.200**	**0.200**
Cadmium	0.300 U	0.600 U	**4.10**	0.300 U	0.300 U
Calcium	-	-	-	-	-
Chromium	**24.1**	**25.0**	**32.0**	**17.8**	**19.0**
Cobalt	-	-	-	-	-
Copper	**31.9**	**36.7**	**89.2**	**23.4**	**28.5**
Iron	-	-	-	-	-
Lead	**24.0 J**	**15.8 J**	**15.8 J**	**7.90**	**13.3**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**21.0**	**21.0**	**36.0**	**18.0**	**15.0**
Potassium	-	-	-	-	-
Selenium	0.300 U	0.300 U	0.200 U	0.300 U	0.200 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	0.100 U	0.100 U	**0.300**	**0.200**	**0.200**
Vanadium	-	-	-	-	-
Zinc	**90.3**	**110**	**108**	**90.5**	**74.9**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.30 U	1.40 U	1.30 U	1.50 U	1.40 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	TR-23	TR-24	TR-25	TR-26	TR-27
Sample ID	030318TR23SD	030318TR24SD	030326TR25SD	030326TR26SD	030319TR27SD
Sample Date	3/18/2003	3/18/2003	3/26/2003	3/26/2003	3/19/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	2.20 U	2.40 U	2.20 U	2.40 U	2.30 U
Acenaphthylene	1.50 U	1.60 U	1.50 U	1.60 U	1.60 U
Aniline	-	-	-	-	-
Anthracene	1.50 U	1.60 U	1.50 U	1.60 U	1.50 U
Benzo(a)anthracene	2.20 U	**48.0**	2.10 U	2.30 U	2.20 U
Benzo(a)pyrene	2.10 U	**39.0**	2.10 U	2.30 U	2.20 U
Benzo(b)fluoranthene	**8.90**	**36.0**	2.20 U	2.40 U	2.30 U
Benzo(g,h,i)perylene	1.70 U	**22.0**	1.70 U	1.90 U	1.80 U
Benzo(k)fluoranthene	2.90 U	**30.0**	2.90 U	3.20 U	3.10 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	-	-	-	-	-
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	2.40 U	**53.0**	2.40 U	2.60 U	2.50 U
Dibenz(a,h)anthracene	2.30 U	2.50 U	2.30 U	2.50 U	2.40 U
Dibenzofuran	1.90 U	2.10 U	1.90 U	2.10 U	2.00 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	1.90 U	**60.0**	1.80 U	2.00 U	1.90 U
Fluorene	1.50 U	1.60 U	1.50 U	1.60 U	1.60 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	1.90 U	**18.0**	1.90 U	2.10 U	2.00 U
Isophorone	-	-	-	-	-
Naphthalene	1.50 U	1.60 U	1.40 U	1.60 U	1.50 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	1.70 U	**27.0**	1.70 U	1.90 U	1.80 U
Phenol	-	-	-	-	-
Pyrene	1.70 U	**80.0**	1.70 U	1.90 U	1.80 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.200**	**0.290**	**0.160**	**0.530**	**0.240**
Solids, Total	**77.2**	**77.3**	**78.8**	**73.6**	**79.6**
Gravel	**16.4 J**	**0.807 J**	**42.9 J**	**47.8 J**	**33.5 J**
Sand, Coarse	**18.1 J**	**30.6 J**	**19.2 J**	**12.7 J**	**40.0 J**
Sand, Medium	**40.7 J**	**47.5 J**	**30.3 J**	**7.15 J**	**16.2 J**
Sand, Fine	**22.2 J**	**16.7 J**	**7.00 J**	**21.8 J**	**9.31 J**
Sand	**81.0 J**	**94.8 J**	**56.5 J**	**41.6 J**	**65.5 J**
Silt	**1.75 J**	**3.41 J**	**0.627 J**	**6.96 J**	**0.152 J**
Clay	**0.874 J**	**0.938 J**	**0.000 J**	**3.64 J**	**0.800 J**
Fines	**2.62 J**	**4.35 J**	**0.627 J**	**10.6 J**	**0.952 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
(Page 39 of 44)

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	TR-28	TR-3	TR-4	TR-5	TR-5 DUP
Sample ID	030319TR28SD	030317TR3SD	030317TR4SD	030317TR5SD	030317TR140SD
Sample Date	3/19/2003	3/17/2003	3/17/2003	3/17/2003	3/17/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.200 U	0.200 U	0.200 U	0.200 U	0.220 U
Aroclor 1221	0.200 U	0.200 U	0.200 U	0.210 U	0.210 U
Aroclor 1232	0.510 U	0.510 U	0.520 U	0.520 U	0.520 U
Aroclor 1242	0.630 U	0.630 U	0.630 U	0.640 U	0.180 U
Aroclor 1248	0.550 U	0.550 U	0.560 U	0.560 U	0.560 U
Aroclor 1254	**180**	**120**	**160**	**180**	**120**
Aroclor 1260	0.340 U	0.340 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**12,600**	**17,700**	**21,000**	**17,300**	**18,900**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**145**	**149**	**227**	**164**	**158**
Beryllium	**0.100**	0.400 U	**0.400**	**0.300**	**0.400**
Cadmium	0.300 U	0.700 U	**0.500**	**0.300**	**0.400**
Calcium	-	-	-	-	-
Chromium	**12.5**	**17.0**	**26.0**	**19.4**	**20.1**
Cobalt	-	-	-	-	-
Copper	**25.6**	**37.1**	**37.8**	**38.4**	**35.6**
Iron	-	-	-	-	-
Lead	**16.9**	**26.0**	**14.7**	**11.5**	**14.1**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**18.0**	**16.0**	**19.0**	**16.0**	**18.0**
Potassium	-	-	-	-	-
Selenium	0.200 U	0.300 U	0.400 U	0.300 U	0.300 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	**0.200**	**0.300**	**0.400**	**0.300**	**0.300**
Vanadium	-	-	-	-	-
Zinc	**76.8**	**104**	**122**	**102**	**112**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	1.40 U	1.50 U	2.20 U	1.70 U	1.80 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	TR-28	TR-3	TR-4	TR-5	TR-5 DUP
Sample ID	030319TR28SD	030317TR3SD	030317TR4SD	030317TR5SD	030317TR140SD
Sample Date	3/19/2003	3/17/2003	3/17/2003	3/17/2003	3/17/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	2.30 U	2.50 U	3.70 U	2.80 U	2.90 U
Acenaphthylene	1.60 U	1.70 U	2.50 U	1.90 U	2.00 U
Aniline	-	-	-	-	-
Anthracene	1.50 U	1.70 U	2.50 U	1.80 U	1.90 U
Benzo(a)anthracene	2.20 U	2.40 U	3.60 U	2.70 UJ	**73.0 J**
Benzo(a)pyrene	2.20 U	2.40 U	3.50 U	2.60 UJ	**82.0 J**
Benzo(b)fluoranthene	2.30 U	2.50 U	3.70 U	2.80 UJ	**72.0 J**
Benzo(g,h,i)perylene	1.80 U	1.90 U	2.90 U	2.20 UJ	**59.0 J**
Benzo(k)fluoranthene	3.10 U	3.30 U	4.90 U	3.60 UJ	**73.0 J**
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	-	-	-	-	-
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	2.50 U	2.70 U	4.00 U	**19.0 J**	**100 J**
Dibenz(a,h)anthracene	2.40 U	2.60 U	3.80 U	2.80 U	**20.0 J Z**
Dibenzofuran	2.00 U	2.20 U	3.20 U	2.40 U	**11.0 J Z**
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	1.90 U	2.10 U	3.10 U	2.30 UJ	**110 J**
Fluorene	1.60 U	1.70 U	2.50 U	1.90 U	2.00 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	2.00 U	2.10 U	3.20 U	2.40 UJ	**59.0 J**
Isophorone	-	-	-	-	-
Naphthalene	1.50 U	1.60 U	2.40 U	1.80 U	1.90 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	1.80 U	1.90 U	2.90 U	2.10 U	**23.0**
Phenol	-	-	-	-	-
Pyrene	1.80 U	1.90 U	2.90 U	2.20 U	**100**
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.420**	**0.560**	**1.80**	**1.20**	**0.980**
Solids, Total	**81.4**	**73.0**	**51.6**	**70.4**	**77.8**
Gravel	**16.0 J**	**48.2 J**	**49.5 J**	**21.6 J**	**68.7 J**
Sand, Coarse	**48.7 J**	**6.59 J**	**9.84 J**	**4.94 J**	**3.92 J**
Sand, Medium	**21.9 J**	**20.2 J**	**8.00 J**	**29.1 J**	**11.9 J**
Sand, Fine	**10.5 J**	**16.4 J**	**13.4 J**	**29.4 J**	**9.09 J**
Sand	**81.1 J**	**43.2 J**	**31.2 J**	**63.5 J**	**24.9 J**
Silt	**2.93 J**	**8.59 J**	**16.8 J**	**12.9 J**	**5.66 J**
Clay	**0.000 J**	**0.000 J**	**2.44 J**	**2.02 J**	**0.769 J**
Fines	**2.93 J**	**8.59 J**	**19.3 J**	**14.9 J**	**6.43 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Goose Island
Site ID	TR-6	TR-7	TR-8	TR-9	GI-113
Sample ID	030317TR6SD	030401TR7SD	030401TR8SD	030331TR9SD	030307GI113SD
Sample Date	3/17/2003	4/1/2003	4/1/2003	3/31/2003	3/7/2003
Medium	Sediment	Sediment	Sediment	Sediment	Soil
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.220 U	0.200 U	0.200 U	0.200 U	0.200 U
Aroclor 1221	0.210 U	0.200 U	0.200 U	0.210 U	0.200 U
Aroclor 1232	0.520 U	0.510 U	0.510 U	0.520 U	0.520 U
Aroclor 1242	0.640 U	0.630 U	0.620 U	0.640 U	0.640 U
Aroclor 1248	0.560 U	0.550 U	0.550 U	0.560 U	0.560 U
Aroclor 1254	**120**	**2.30**	**1.00 J**	**12.0**	0.530 U
Aroclor 1260	0.340 U	0.340 U	0.340 U	0.340 U	0.340 U
Metals (mg/kg dry)					
Aluminum	**23,200**	**15,700**	**15,500**	**11,000**	**42,500**
Antimony	-	-	-	-	-
Arsenic	-	-	-	-	-
Barium	**185**	**90.3**	**77.4**	**69.0**	**195**
Beryllium	**0.500**	**0.200**	**0.200**	**0.100**	**0.600**
Cadmium	**0.800**	0.200 U	0.300 U	0.200 U	0.700 U
Calcium	-	-	-	-	-
Chromium	**22.0**	**26.5**	**24.0**	**17.1**	**40.0**
Cobalt	-	-	-	-	-
Copper	**37.1**	**31.5**	**26.9**	**27.2**	**77.9**
Iron	-	-	-	-	-
Lead	**18.0**	**5.50 J**	**8.60 J**	**4.90 J**	**6.40**
Magnesium	-	-	-	-	-
Manganese	-	-	-	-	-
Mercury	-	-	-	-	-
Nickel	**21.0**	**22.0**	**17.0**	**14.0**	**28.0**
Potassium	-	-	-	-	-
Selenium	0.400 U	0.300 U	0.300 U	0.300 U	0.300 U
Silver	-	-	-	-	-
Sodium	-	-	-	-	-
Thallium	**0.400**	0.100 U	0.100 U	0.100 U	0.100 U
Vanadium	-	-	-	-	-
Zinc	**142**	**77.5**	**90.0**	**76.5**	**70.0**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	-	-	-	-
Residual Range Organics	-	-	-	-	-
Butyltins (µg/kg dry)					
Dibutyltin dichloride	-	-	-	-	-
Monobutyltin trichloride	-	-	-	-	-
Tetrabutyltin	-	-	-	-	-
Tributyltin chloride	-	-	-	-	-
Pesticides (µg/kg dry)					
4,4'-DDD	-	-	-	-	-
4,4'-DDE	-	-	-	-	-
4,4'-DDT	-	-	-	-	-
Aldrin	-	-	-	-	-
BHC (alpha)	-	-	-	-	-
BHC (beta)	-	-	-	-	-
BHC (delta)	-	-	-	-	-
BHC (gamma) Lindane	-	-	-	-	-
Chlordane (alpha)	-	-	-	-	-
Chlordane (gamma)	-	-	-	-	-
Dieldrin	-	-	-	-	-
Endosulfan I	-	-	-	-	-
Endosulfan II	-	-	-	-	-
Endosulfan Sulfate	-	-	-	-	-
Endrin	-	-	-	-	-
Endrin Aldehyde	-	-	-	-	-
Endrin Ketone	-	-	-	-	-
Heptachlor	-	-	-	-	-
Heptachlor Epoxide	-	-	-	-	-
Methoxychlor	-	-	-	-	-
Toxaphene	-	-	-	-	-
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-
2,4,5-Trichlorophenol	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-
2,4-Dimethylphenol	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-
2,4-Dinitrotoluene	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-
2-Methylnaphthalene	2.30 U	1.50 U	1.40 U	1.30 U	1.40 U
2-Methylphenol	-	-	-	-	-
2-Nitroaniline	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Goose Island
Site ID	TR-6	TR-7	TR-8	TR-9	GI-113
Sample ID	030317TR6SD	030401TR7SD	030401TR8SD	030331TR9SD	030307GI113SD
Sample Date	3/17/2003	4/1/2003	4/1/2003	3/31/2003	3/7/2003
Medium	Sediment	Sediment	Sediment	Sediment	Soil
3,3'-Dichlorobenzidine	-	-	-	-	-
3-Nitroaniline	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-
4-Bromophenyl Phenyl Ether	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-
4-Chloroaniline	-	-	-	-	-
4-Chlorophenyl Phenyl Ether	-	-	-	-	-
4-Nitroaniline	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-
Acenaphthene	3.90 U	2.50 U	2.40 U	2.10 U	2.40 U
Acenaphthylene	2.60 U	1.70 U	1.60 U	1.40 U	1.60 U
Aniline	-	-	-	-	-
Anthracene	2.60 U	1.60 U	1.60 U	1.40 U	1.60 U
Benzo(a)anthracene	3.70 U	2.40 U	2.30 U	2.00 U	2.30 U
Benzo(a)pyrene	3.70 U	2.30 U	2.20 U	2.00 U	2.30 U
Benzo(b)fluoranthene	3.90 U	2.50 U	2.40 U	2.10 U	2.40 U
Benzo(g,h,i)perylene	3.00 U	1.90 U	1.80 U	1.60 U	1.90 U
Benzo(k)fluoranthene	5.10 U	3.20 U	3.10 U	2.80 U	3.10 U
Benzoic Acid	-	-	-	-	-
Benzyl Alcohol	-	-	-	-	-
Bis(2-chloroethoxy)methane	-	-	-	-	-
Bis(2-chloroethyl) Ether	-	-	-	-	-
Bis(2-chloroisopropyl) Ether	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	-	-	-	-	-
Butyl Benzyl Phthalate	-	-	-	-	-
Carbazole	-	-	-	-	-
Chrysene	4.20 U	2.70 U	**14.0**	2.30 U	2.60 U
Dibenz(a,h)anthracene	4.00 U	2.50 U	2.40 U	2.20 U	2.50 U
Dibenzofuran	3.30 U	2.10 U	2.00 U	1.80 U	2.10 U
Diethyl Phthalate	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-
Di-n-butyl Phthalate	-	-	-	-	-
Di-n-octyl Phthalate	-	-	-	-	-
Fluoranthene	3.20 U	2.10 U	2.00 U	1.80 U	2.00 U
Fluorene	2.60 U	1.60 U	1.60 U	1.40 U	1.60 U
Hexachlorobenzene	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-
Hexachlorocyclopentadiene	-	-	-	-	-
Hexachloroethane	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	3.30 U	2.10 U	2.00 U	1.80 U	2.10 U
Isophorone	-	-	-	-	-
Naphthalene	2.50 U	1.60 U	1.50 U	1.40 U	1.60 U
Nitrobenzene	-	-	-	-	-
N-Nitrosodimethylamine	-	-	-	-	-
N-Nitrosodi-n-propylamine	-	-	-	-	-
N-Nitrosodiphenylamine	-	-	-	-	-
p-cresol (4-Methylphenol)	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-
Phenanthrene	3.00 U	1.90 U	1.80 U	1.60 U	1.90 U
Phenol	-	-	-	-	-
Pyrene	3.00 U	1.90 U	1.80 U	1.60 U	1.90 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**2.10**	**0.370**	**0.520**	**0.100**	**0.500**
Solids, Total	**50.6**	**75.5**	**73.9**	**80.0**	**76.8**
Gravel	**28.6 J**	**23.4 J**	**73.4 J**	**43.4 J**	**0.000 J**
Sand, Coarse	**0.862 J**	**13.8 J**	**8.36 J**	**12.9 J**	**6.81 J**
Sand, Medium	**4.02 J**	**42.2 J**	**6.19 J**	**31.4 J**	**24.1 J**
Sand, Fine	**16.2 J**	**17.3 J**	**6.43 J**	**9.49 J**	**32.4 J**
Sand	**21.1 J**	**73.3 J**	**21.0 J**	**53.9 J**	**63.3 J**
Silt	**43.1 J**	**2.91 J**	**4.60 J**	**2.44 J**	**30.5 J**
Clay	**7.18 J**	**0.364 J**	**1.00 J**	**0.305 J**	**6.15 J**
Fines	**50.3 J**	**3.27 J**	**5.60 J**	**2.75 J**	**36.7 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
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Area	Goose Island	Goose Island
Site ID	GI-113 DUP	GI-114
Sample ID	030307GI137SD	030307GI114SD
Sample Date	3/7/2003	3/7/2003
Medium	Soil	Soil
PCB Aroclors (µg/kg dry)		
Aroclor 1016	1.00 U	0.200 U
Aroclor 1221	1.30 U	0.200 U
Aroclor 1232	0.540 U	0.510 U
Aroclor 1242	0.640 U	0.630 U
Aroclor 1248	0.420 U	0.550 U
Aroclor 1254	1.20 U	0.530 U
Aroclor 1260	1.00 U	0.340 U
Metals (mg/kg dry)		
Aluminum	**37,000**	**51,900**
Antimony	-	-
Arsenic	-	-
Barium	**158**	**127**
Beryllium	**0.400**	**0.800**
Cadmium	0.600 U	0.700 U
Calcium	-	-
Chromium	**30.0**	**36.0**
Cobalt	-	-
Copper	**60.4**	**92.4**
Iron	-	-
Lead	**6.10**	**9.10**
Magnesium	-	-
Manganese	-	-
Mercury	-	-
Nickel	**26.0**	**32.0**
Potassium	-	-
Selenium	0.200 U	0.300 U
Silver	-	-
Sodium	-	-
Thallium	0.100 U	0.200 U
Vanadium	-	-
Zinc	**67.0**	**72.0**
Petroleum Hydrocarbons (mg/kg dry)		
Diesel Range Organics	-	-
Residual Range Organics	-	-
Butyltins (µg/kg dry)		
Dibutyltin dichloride	-	-
Monobutyltin trichloride	-	-
Tetrabutyltin	-	-
Tributyltin chloride	-	-
Pesticides (µg/kg dry)		
4,4'-DDD	-	-
4,4'-DDE	-	-
4,4'-DDT	-	-
Aldrin	-	-
BHC (alpha)	-	-
BHC (beta)	-	-
BHC (delta)	-	-
BHC (gamma) Lindane	-	-
Chlordane (alpha)	-	-
Chlordane (gamma)	-	-
Dieldrin	-	-
Endosulfan I	-	-
Endosulfan II	-	-
Endosulfan Sulfate	-	-
Endrin	-	-
Endrin Aldehyde	-	-
Endrin Ketone	-	-
Heptachlor	-	-
Heptachlor Epoxide	-	-
Methoxychlor	-	-
Toxaphene	-	-
Semivolatile Organic Compounds (µg/kg dry)		
1,2,4-Trichlorobenzene	-	-
1,2-Dichlorobenzene	-	-
1,3-Dichlorobenzene	-	-
1,4-Dichlorobenzene	-	-
2,4,5-Trichlorophenol	-	-
2,4,6-Trichlorophenol	-	-
2,4-Dichlorophenol	-	-
2,4-Dimethylphenol	-	-
2,4-Dinitrophenol	-	-
2,4-Dinitrotoluene	-	-
2,6-Dinitrotoluene	-	-
2-Chloronaphthalene	-	-
2-Chlorophenol	-	-
2-Methylnaphthalene	1.50 U	1.70 U
2-Methylphenol	-	-
2-Nitroaniline	-	-
2-Nitrophenol	-	-

Table G-6a
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Forebay Area Sediment and Goose Island Soil Analytical Results
(Page 44 of 44)

Area	Goose Island	Goose Island
Site ID	GI-113 DUP	GI-114
Sample ID	030307GI137SD	030307GI114SD
Sample Date	3/7/2003	3/7/2003
Medium	Soil	Soil
3,3'-Dichlorobenzidine	-	-
3-Nitroaniline	-	-
4,6-Dinitro-2-methylphenol	-	-
4-Bromophenyl Phenyl Ether	-	-
4-Chloro-3-methylphenol	-	-
4-Chloroaniline	-	-
4-Chlorophenyl Phenyl Ether	-	-
4-Nitroaniline	-	-
4-Nitrophenol	-	-
Acenaphthene	2.50 U	2.80 U
Acenaphthylene	1.70 U	1.90 U
Aniline	-	-
Anthracene	1.60 U	**19.0**
Benzo(a)anthracene	2.40 U	**12.0**
Benzo(a)pyrene	2.30 U	2.60 U
Benzo(b)fluoranthene	2.50 U	2.80 U
Benzo(g,h,i)perylene	1.90 U	2.10 U
Benzo(k)fluoranthene	3.20 U	3.60 U
Benzoic Acid	-	-
Benzyl Alcohol	-	-
Bis(2-chloroethoxy)methane	-	-
Bis(2-chloroethyl) Ether	-	-
Bis(2-chloroisopropyl) Ether	-	-
Bis(2-ethylhexyl) Phthalate	-	-
Butyl Benzyl Phthalate	-	-
Carbazole	-	-
Chrysene	2.70 U	**13.0**
Dibenz(a,h)anthracene	2.50 U	2.80 U
Dibenzofuran	2.10 U	2.40 U
Diethyl Phthalate	-	-
Dimethyl Phthalate	-	-
Di-n-butyl Phthalate	-	-
Di-n-octyl Phthalate	-	-
Fluoranthene	2.10 U	**78.0**
Fluorene	1.70 U	1.80 U
Hexachlorobenzene	-	-
Hexachlorobutadiene	-	-
Hexachlorocyclopentadiene	-	-
Hexachloroethane	-	-
Indeno(1,2,3-cd)pyrene	2.10 U	2.40 U
Isophorone	-	-
Naphthalene	1.60 U	1.80 U
Nitrobenzene	-	-
N-Nitrosodimethylamine	-	-
N-Nitrosodi-n-propylamine	-	-
N-Nitrosodiphenylamine	-	-
p-cresol (4-Methylphenol)	-	-
Pentachlorophenol	-	-
Phenanthrene	1.90 U	**83.0**
Phenol	-	-
Pyrene	1.90 U	**57.0**
General Chemistry Parameters and Grain Size (%)		
Carbon, Total Organic	**0.940**	**1.30**
Solids, Total	**73.2**	**65.9**
Gravel	**1.81 J**	**18.3 J**
Sand, Coarse	**5.20 J**	**18.6 J**
Sand, Medium	**24.2 J**	**17.1 J**
Sand, Fine	**37.6 J**	**26.4 J**
Sand	**67.0 J**	**62.1 J**
Silt	**21.6 J**	**13.3 J**
Clay	**9.63 J**	**6.25 J**
Fines	**31.2 J**	**19.6 J**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6b
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Reference Area Analytical Results
(Page 1 of 10)

Area	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147
Site ID	RF-100	RF-100 DUP	RF-101	RF-102	RF-103
Sample ID	030407RF100SD	030407RF146SD	030312RF101SD	030312RF102SD	030312RF103SD
Sample Date	4/7/2003	4/7/2003	3/12/2003	3/12/2003	3/12/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Aroclor 1221	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Aroclor 1232	0.0500 U	0.0500 U	0.0500 U	0.580 U	0.970 U
Aroclor 1242	0.0600 U	0.0200 U	0.500 U	0.0600 U	0.0600 U
Aroclor 1248	0.800 U	1.30 U	0.0500 U	0.0500 U	0.0500 U
Aroclor 1254	0.490 U	1.40 U	0.310 U	0.0600 U	0.0600 U
Aroclor 1260	0.210 U	0.280 U	0.0300 U	0.0300 U	0.0300 U
Metals (mg/kg dry)					
Aluminum	**18,900**	**17,300**	**18,700**	**17,500**	**10,600**
Antimony	R	R	R	R	R
Arsenic	**4.30**	**4.10**	**3.60**	**6.60**	**3.70**
Barium	**160**	**147**	**153**	**140**	**109**
Beryllium	**0.400**	**0.300**	**0.300**	0.400 U	**0.200**
Cadmium	**0.600**	**0.900**	**0.400**	0.700 U	**0.400**
Calcium	**6,540**	**6,450**	**7,030**	**7,190**	**5,070**
Chromium	**20.0**	**19.0**	**25.6**	**27.0**	**22.9**
Cobalt	**10.8**	**9.80**	**15.0**	**12.0**	**11.5**
Copper	**28.0**	**24.3**	**39.4**	**48.2**	**16.5**
Iron	**26,700**	**25,200**	**32,000**	**44,200**	**28,900**
Lead	**15.0**	**15.0**	**6.30**	**8.50**	**7.40**
Magnesium	**5,360**	**5,140**	**8,360**	**6,550**	**6,570**
Manganese	**607**	**547**	**575**	**480**	**468**
Mercury	**0.170**	**0.160**	0.0600 U	0.0500 U	0.0500 U
Nickel	**18.0**	**17.0**	**22.0**	**23.0**	**28.0**
Potassium	**1,780**	**1,630**	**1,020**	**890**	**690**
Selenium	0.400 U	0.400 U	0.700 U	0.300 U	0.300 U
Silver	0.600 U	0.600 U	0.400 U	1.00 U	0.400 U
Sodium	**760**	**730**	**630**	**760**	**470**
Thallium	**0.300**	**0.200**	**0.200**	**0.300**	**0.200**
Vanadium	**63.8**	**58.6**	**80.9**	**76.0**	**88.2**
Zinc	**144**	**142**	**92.9**	**119**	**94.4**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	3.20 U	**13.0**	2.90 U	2.00 U	2.10 U
Residual Range Organics	5.00 U	**22.0**	5.00 U	5.00 U	5.00 U
Butyltins (µg/kg dry)					
Dibutyltin dichloride	5.80 U	6.00 U	5.90 U	5.70 U	5.80 U
Monobutyltin trichloride	5.80 U	6.00 U	5.90 U	5.70 U	5.80 U
Tetrabutyltin	5.80 U	6.00 U	5.90 U	5.70 U	5.80 U
Tributyltin chloride	5.80 U	6.00 U	5.90 U	5.70 U	5.80 U
Pesticides (µg/kg dry)					
4,4'-DDD	0.0880 U	0.0890 U	0.0890 U	0.0870 U	0.0880 U
4,4'-DDE	0.0760 U	0.0770 U	0.0770 U	0.0750 U	0.0770 U
4,4'-DDT	0.134 U	0.136 U	0.137 U	0.133 U	0.136 U
Aldrin	0.0350 U	0.0360 U	0.0360 U	0.0350 U	0.0350 U
BHC (alpha)	0.0530 U	0.0530 U	0.0530 U	0.0520 U	0.0530 U
BHC (beta)	0.0580 U	0.0590 U	0.0590 U	0.0580 U	0.0590 U
BHC (delta)	0.0430 U	0.0430 U	0.0440 U	0.0420 U	0.0430 U
BHC (gamma) Lindane	0.0410 U	0.0410 U	0.0420 U	0.0400 U	0.0410 U
Chlordane (alpha)	0.0290 U	0.0300 U	0.0300 U	0.0290 U	0.0290 U
Chlordane (gamma)	0.0370 U	0.0380 U	0.0380 U	0.0370 U	0.0370 U
Dieldrin	0.0580 U	0.0590 U	0.0590 U	0.0580 U	0.0590 U
Endosulfan I	0.0530 U	0.0530 U	0.0530 U	0.0520 U	0.0530 U
Endosulfan II	0.121 U	0.122 U	0.123 U	0.120 U	0.122 U
Endosulfan Sulfate	0.164 U	0.166 U	0.166 U	0.162 U	0.165 U
Endrin	0.0580 U	0.0590 U	0.0590 U	0.0580 U	0.0590 U
Endrin Aldehyde	0.111 U	0.113 U	0.113 U	0.110 U	0.112 U
Endrin Ketone	0.199 U	0.202 U	0.202 U	0.197 U	0.200 U
Heptachlor	0.0430 U	0.0430 U	0.0440 U	0.0420 U	0.0430 U
Heptachlor Epoxide	0.0430 U	0.0430 U	0.0440 U	0.0420 U	0.0430 U
Methoxychlor	0.584 U	0.593 U	0.594 U	0.578 U	0.589 U
Toxaphene	4.38 U	4.44 U	4.45 U	4.34 U	4.42 U
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	4.90 U	5.00 U	4.90 U	4.80 U	4.90 U
1,2-Dichlorobenzene	5.10 U	5.20 U	5.10 U	5.00 U	5.10 U
1,3-Dichlorobenzene	4.70 U	4.80 U	4.70 U	4.60 U	4.70 U
1,4-Dichlorobenzene	5.10 U	5.20 U	5.10 U	5.00 U	5.10 U
2,4,5-Trichlorophenol	7.90 U	7.90 U	7.80 U	7.70 U	7.90 U
2,4,6-Trichlorophenol	6.70 U	6.70 U	6.60 U	6.50 U	6.70 U
2,4-Dichlorophenol	9.80 U	9.90 U	9.70 U	9.60 U	9.90 U
2,4-Dimethylphenol	9.40 U	9.50 U	9.30 U	9.20 U	9.50 U
2,4-Dinitrophenol	100 U	100 U	99.0 U	97.0 U	100 U
2,4-Dinitrotoluene	5.30 U	5.40 U	5.30 U	5.20 U	5.30 U
2,6-Dinitrotoluene	4.90 U	5.00 U	4.90 U	4.80 U	4.90 U
2-Chloronaphthalene	5.70 U	5.70 U	5.60 U	5.60 U	5.70 U
2-Chlorophenol	6.50 U	6.50 U	6.40 U	6.30 U	6.50 U
2-Methylnaphthalene	4.90 U	5.00 U	4.90 U	4.80 U	4.90 U
2-Methylphenol	6.70 U	6.70 U	6.60 U	6.50 U	6.70 U
2-Nitroaniline	13.0 U	13.0 U	13.0 U	13.0 U	13.0 U
2-Nitrophenol	9.60 U	9.70 U	9.50 U	9.40 U	9.70 U
3,3'-Dichlorobenzidine	34.0 U	34.0 U	34.0 U	33.0 U	34.0 U

Table G-6b
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Reference Area Analytical Results
(Page 2 of 10)

Area	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147
Site ID	RF-100	RF-100 DUP	RF-101	RF-102	RF-103
Sample ID	030407RF100SD	030407RF146SD	030312RF101SD	030312RF102SD	030312RF103SD
Sample Date	4/7/2003	4/7/2003	3/12/2003	3/12/2003	3/12/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3-Nitroaniline	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U
4,6-Dinitro-2-methylphenol	170 U	170 U	170 U	160 U	170 U
4-Bromophenyl Phenyl Ether	6.30 U	6.30 U	6.20 U	6.10 U	6.30 U
4-Chloro-3-methylphenol	9.20 U	9.30 U	9.20 U	9.00 U	9.30 U
4-Chloroaniline	14.0 U	14.0 U	14.0 U	14.0 U	14.0 U
4-Chlorophenyl Phenyl Ether	9.80 U	9.90 U	9.70 U	9.60 U	9.90 U
4-Nitroaniline	13.0 U	13.0 U	13.0 U	12.0 U	13.0 U
4-Nitrophenol	18.0 U	18.0 U	18.0 U	17.0 U	18.0 U
Acenaphthene	5.10 U	5.20 U	5.10 U	5.00 U	5.10 U
Acenaphthylene	4.50 U	4.60 U	4.50 U	4.40 U	4.50 U
Aniline	6.10 U	6.10 U	6.00 U	5.90 U	6.10 U
Anthracene	4.70 U	4.80 U	4.70 U	4.60 U	4.70 U
Benzo(a)anthracene	5.10 U	5.20 U	5.10 U	5.00 U	5.10 U
Benzo(a)pyrene	**11.0 J**	4.00 U	3.90 U	3.80 U	3.90 U
Benzo(b)fluoranthene	**10.0 J**	**11.0 J**	8.00 U	7.90 U	8.10 U
Benzo(g,h,i)perylene	5.30 U	5.40 U	5.30 U	5.20 U	5.30 U
Benzo(k)fluoranthene	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U
Benzoic Acid	160 U	160 U	160 U	160 U	160 U
Benzyl Alcohol	20.0 U	20.0 U	19.0 U	19.0 U	20.0 U
Bis(2-chloroethoxy)methane	4.70 U	4.80 U	4.70 U	4.60 U	4.70 U
Bis(2-chloroethyl) Ether	6.70 U	6.70 U	6.60 U	6.50 U	6.70 U
Bis(2-chloroisopropyl) Ether	5.70 U	5.70 U	5.60 U	5.60 U	5.70 U
Bis(2-ethylhexyl) Phthalate	19.0 U	19.0 U	19.0 U	18.0 U	19.0 U
Butyl Benzyl Phthalate	4.90 U	5.00 U	4.90 U	4.80 U	4.90 U
Carbazole	4.70 U	4.80 U	4.70 U	4.60 U	4.70 U
Chrysene	**15.0 J**	**12.0 J**	6.00 U	5.90 U	6.10 U
Dibenz(a,h)anthracene	5.70 U	5.70 U	5.60 U	5.60 U	5.70 U
Dibenzofuran	4.90 U	5.00 U	4.90 U	4.80 U	4.90 U
Diethyl Phthalate	8.70 U	8.70 U	8.60 U	8.40 U	8.70 U
Dimethyl Phthalate	5.10 U	5.20 U	5.10 U	5.00 U	5.10 U
Di-n-butyl Phthalate	5.70 U	5.70 U	5.60 U	5.60 U	5.70 U
Di-n-octyl Phthalate	8.10 U	8.10 U	8.00 U	7.90 U	8.10 U
Fluoranthene	**18.0 J**	**15.0 J**	5.80 U	5.70 U	5.90 U
Fluorene	6.70 U	6.70 U	6.60 U	6.50 U	6.70 U
Hexachlorobenzene	5.50 U	5.60 U	5.50 U	5.40 U	5.50 U
Hexachlorobutadiene	6.70 U	6.70 U	6.60 U	6.50 U	6.70 U
Hexachlorocyclopentadiene	29.0 U	29.0 U	29.0 U	28.0 U	29.0 U
Hexachloroethane	7.50 U	7.50 U	7.40 U	7.30 U	7.50 U
Indeno(1,2,3-cd)pyrene	5.90 U	5.90 U	5.80 U	5.70 U	5.90 U
Isophorone	6.30 U	6.30 U	6.20 U	6.10 U	6.30 U
Naphthalene	5.10 U	5.20 U	5.10 U	5.00 U	5.10 U
Nitrobenzene	5.90 U	5.90 U	5.80 U	5.70 U	5.90 U
N-Nitrosodimethylamine	40.0 U	40.0 U	40.0 U	39.0 U	40.0 U
N-Nitrosodi-n-propylamine	7.10 U	7.10 U	7.00 U	6.90 U	7.10 U
N-Nitrosodiphenylamine	6.90 U	6.90 U	6.80 U	6.70 U	6.90 U
p-cresol (4-Methylphenol)	6.70 U	6.70 U	6.60 U	6.50 U	**100**
Pentachlorophenol	43.0 U	43.0 U	42.0 U	42.0 U	43.0 U
Phenanthrene	**21.0**	4.60 U	4.50 U	4.40 U	4.50 U
Phenol	6.50 U	6.50 U	6.40 U	6.30 U	6.50 U
Pyrene	**17.0 J**	**12.0 J**	10.0 U	10.0 U	10.0 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**1.20**	**1.20**	**0.380**	**0.480**	**0.520**
Solids, Total	**52.9**	**41.4**	**73.0**	**74.5**	**74.2**
Gravel	**0.000**	**0.100**	**3.00**	**6.00**	**2.00**
Sand, Coarse	**0.000**	**0.000**	**7.00**	**4.10**	**2.60**
Sand, Medium	**1.60**	**2.00**	**37.4**	**42.4**	**45.0**
Sand, Fine	**43.5**	**45.3**	**35.8**	**29.8**	**41.6**
Sand	**45.1**	**47.3**	**80.2**	**76.3**	**89.2**
Silt	**46.0**	**44.4**	**14.6**	**16.0**	**6.20**
Clay	**8.80**	**8.20**	**2.10**	**1.80**	**2.50**
Fines	**54.8**	**52.6**	**16.7**	**17.8**	**8.70**

Notes:

µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-6b
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Reference Area Analytical Results
(Page 3 of 10)

Area	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147
Site ID	RF-104	RF-105	RF-106	RF-107	RF-107 DUP
Sample ID	030312RF104SD	030312RF105SD	030312RF106SD	030311RF107SD	030311RF138SD
Sample Date	3/12/2003	3/12/2003	3/12/2003	3/11/2003	3/11/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Aroclor 1221	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Aroclor 1232	0.390 U	0.770 U	0.580 U	0.0500 U	0.480 U
Aroclor 1242	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0200 U
Aroclor 1248	0.0500 U	0.700 U	0.0500 U	0.0500 U	0.0500 U
Aroclor 1254	0.0500 U	0.580 U	0.310 U	0.0600 U	0.360 U
Aroclor 1260	0.0300 U	0.0300 U	0.0300 U	0.0300 U	0.0300 U
Metals (mg/kg dry)					
Aluminum	**13,100**	**12,200**	**15,400**	**16,300**	**17,200**
Antimony	R	R	R	R	R
Arsenic	**2.10**	**4.80**	**4.70**	**3.20**	**3.40**
Barium	**97.3**	**167**	**98.1**	**175**	**127**
Beryllium	**0.200**	**0.200**	**0.100**	**0.200**	**0.200**
Cadmium	0.300 U	**0.400**	**0.400**	0.300 U	**0.500**
Calcium	**5,840**	**6,810**	**8,800**	**8,930**	**10,000**
Chromium	**16.3**	**15.4**	**15.4**	**18.3**	**18.8**
Cobalt	**10.5**	**11.2**	**12.7**	**13.1**	**16.4**
Copper	**18.6**	**16.8**	**16.1**	**23.2**	**23.9**
Iron	**29,600**	**23,100**	**28,600**	**29,500**	**30,700**
Lead	**4.70**	**7.90**	**5.90**	**7.50**	**7.20**
Magnesium	**6,590**	**8,100**	**9,700**	**10,400**	**13,000**
Manganese	**382**	**467**	**424**	**415**	**526**
Mercury	0.0600 U	0.0600 U	0.0500 U	0.0700 U	0.0500 U
Nickel	**21.0**	**24.0**	**31.0**	**32.0**	**46.0**
Potassium	**510**	**670**	**510**	**700**	**590**
Selenium	0.300 U	0.700 U	0.700 U	0.700 U	0.300 U
Silver	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U
Sodium	**700**	**1,000**	**1,500**	**1,250**	**1,640**
Thallium	**0.200**	**0.300**	**0.200**	**0.500**	0.100 U
Vanadium	**82.0**	**54.9**	**65.8**	**66.7**	**69.0**
Zinc	**76.6**	**101**	**94.7**	**104**	**105**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	2.10 U	2.20 U	2.10 U	2.00 U	1.70 U
Residual Range Organics	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Butyltins (µg/kg dry)					
Dibutyltin dichloride	5.80 U	5.90 U	5.80 U	5.90 U	5.90 U
Monobutyltin trichloride	5.80 U	5.90 U	5.80 U	5.90 U	5.90 U
Tetrabutyltin	5.80 U	5.90 U	5.80 U	5.90 U	5.90 U
Tributyltin chloride	5.80 U	5.90 U	5.80 U	5.90 U	5.90 U
Pesticides (µg/kg dry)					
4,4'-DDD	0.0870 U	0.0880 U	0.0880 U	0.0890 U	0.0960 U
4,4'-DDE	0.0750 U	0.0770 U	0.0760 U	0.0770 U	0.0830 U
4,4'-DDT	0.133 U	0.135 U	0.134 U	0.136 U	0.147 U
Aldrin	0.0350 U	0.0350 U	0.0350 U	0.0350 U	0.0380 U
BHC (alpha)	0.0520 U	0.0530 U	0.0530 U	0.0530 U	0.0580 U
BHC (beta)	0.0580 U	0.0590 U	0.0580 U	0.0590 U	0.0640 U
BHC (delta)	0.0430 U	0.0430 U	0.0430 U	0.0430 U	0.0470 U
BHC (gamma) Lindane	0.0410 U	0.0410 U	0.0410 U	0.0410 U	0.0450 U
Chlordane (alpha)	0.0290 U	0.0290 U	0.0290 U	0.0300 U	0.0320 U
Chlordane (gamma)	0.0370 U	0.0370 U	0.0370 U	0.0370 U	0.0410 U
Dieldrin	0.0580 U	0.0590 U	0.0580 U	0.0590 U	0.0640 U
Endosulfan I	0.0520 U	0.0530 U	0.0530 U	0.0530 U	0.0580 U
Endosulfan II	0.120 U	0.122 U	0.121 U	0.122 U	0.132 U
Endosulfan Sulfate	0.162 U	0.165 U	0.164 U	0.165 U	0.179 U
Endrin	0.0580 U	0.0590 U	0.0580 U	0.0590 U	0.0640 U
Endrin Aldehyde	0.110 U	0.112 U	0.111 U	0.112 U	0.122 U
Endrin Ketone	0.197 U	0.200 U	0.199 U	0.201 U	0.218 U
Heptachlor	0.0430 U	0.0430 U	0.0430 U	0.0430 U	0.0470 U
Heptachlor Epoxide	0.0430 U	0.0430 U	0.0430 U	0.0430 U	0.0470 U
Methoxychlor	0.580 U	0.589 U	0.585 U	0.590 U	0.640 U
Toxaphene	4.35 U	4.42 U	4.38 U	4.43 U	4.80 U
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	4.80 U	4.90 U	4.80 U	4.80 U	5.20 U
1,2-Dichlorobenzene	5.00 U	5.10 U	5.00 U	5.00 U	5.40 U
1,3-Dichlorobenzene	4.60 U	4.70 U	4.60 U	4.60 U	5.00 U
1,4-Dichlorobenzene	5.00 U	5.10 U	5.00 U	5.00 U	5.40 U
2,4,5-Trichlorophenol	7.70 U	7.80 U	7.70 U	7.70 U	8.30 U
2,4,6-Trichlorophenol	6.60 U	6.70 U	6.60 U	6.60 U	7.10 U
2,4-Dichlorophenol	9.60 U	9.80 U	9.70 U	9.70 U	10.0 U
2,4-Dimethylphenol	9.30 U	9.40 U	9.30 U	9.30 U	10.0 U
2,4-Dinitrophenol	98.0 U	99.0 U	98.0 U	98.0 U	110 U
2,4-Dinitrotoluene	5.20 U	5.30 U	5.20 U	5.20 U	5.60 U
2,6-Dinitrotoluene	4.80 U	4.90 U	4.80 U	4.80 U	5.20 U
2-Chloronaphthalene	5.60 U	5.70 U	5.60 U	5.60 U	6.00 U
2-Chlorophenol	6.40 U	6.50 U	6.40 U	6.40 U	6.90 U
2-Methylnaphthalene	4.80 U	4.90 U	4.80 U	4.80 U	5.20 U
2-Methylphenol	6.60 U	6.70 U	6.60 U	6.60 U	7.10 U
2-Nitroaniline	13.0 U	13.0 U	13.0 U	13.0 U	14.0 U
2-Nitrophenol	9.40 U	9.60 U	9.50 U	9.50 U	10.0 U
3,3'-Dichlorobenzidine	33.0 U	34.0 U	33.0 U	33.0 U	36.0 U

Table G-6b
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Reference Area Analytical Results
(Page 4 of 10)

Area	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147
Site ID	RF-104	RF-105	RF-106	RF-107	RF-107 DUP
Sample ID	030312RF104SD	030312RF105SD	030312RF106SD	030311RF107SD	030311RF138SD
Sample Date	3/12/2003	3/12/2003	3/12/2003	3/11/2003	3/11/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3-Nitroaniline	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U
4,6-Dinitro-2-methylphenol	160 U	170 U	160 U	160 U	180 U
4-Bromophenyl Phenyl Ether	6.20 U	6.30 U	6.20 U	6.20 U	6.70 U
4-Chloro-3-methylphenol	9.10 U	9.20 U	9.10 U	9.10 U	9.80 U
4-Chloroaniline	14.0 U	14.0 U	14.0 U	14.0 U	15.0 U
4-Chlorophenyl Phenyl Ether	9.60 U	9.80 U	9.70 U	9.70 U	10.0 U
4-Nitroaniline	13.0 U	13.0 U	13.0 U	13.0 U	14.0 U
4-Nitrophenol	18.0 U	18.0 U	18.0 U	18.0 U	19.0 U
Acenaphthene	5.00 U	5.10 U	5.00 U	5.00 U	5.40 U
Acenaphthylene	4.40 U	4.50 U	4.40 U	4.50 U	4.80 U
Aniline	6.00 U	6.10 U	6.00 U	6.00 U	6.50 U
Anthracene	4.60 U	4.70 U	4.60 U	4.60 U	5.00 U
Benzo(a)anthracene	5.00 U	5.10 U	5.00 U	5.00 U	5.40 U
Benzo(a)pyrene	3.90 U	3.90 U	3.90 U	3.90 U	4.20 U
Benzo(b)fluoranthene	7.90 U	8.00 U	7.90 U	7.90 U	8.50 U
Benzo(g,h,i)perylene	5.20 U	5.30 U	5.20 U	5.20 U	5.60 U
Benzo(k)fluoranthene	11.0 U	11.0 U	11.0 U	11.0 U	12.0 U
Benzoic Acid	160 U	160 U	160 U	160 U	170 U
Benzyl Alcohol	19.0 U	20.0 U	19.0 U	19.0 U	21.0 U
Bis(2-chloroethoxy)methane	4.60 U	4.70 U	4.60 U	4.60 U	5.00 U
Bis(2-chloroethyl) Ether	6.60 U	6.70 U	6.60 U	6.60 U	7.10 U
Bis(2-chloroisopropyl) Ether	5.60 U	5.70 U	5.60 U	5.60 U	6.00 U
Bis(2-ethylhexyl) Phthalate	18.0 U	**64.0**	18.0 U	18.0 U	20.0 U
Butyl Benzyl Phthalate	4.80 U	**28.0**	4.80 U	4.80 U	5.20 U
Carbazole	4.60 U	4.70 U	4.60 U	4.60 U	5.00 U
Chrysene	6.00 U	6.10 U	6.00 U	6.00 U	6.50 U
Dibenz(a,h)anthracene	5.60 U	5.70 U	5.60 U	5.60 U	6.00 U
Dibenzofuran	4.80 U	4.90 U	4.80 U	4.80 U	5.20 U
Diethyl Phthalate	8.50 U	8.60 U	8.50 U	8.50 U	9.20 U
Dimethyl Phthalate	5.00 U	5.10 U	5.00 U	5.00 U	5.40 U
Di-n-butyl Phthalate	5.60 U	5.70 U	5.60 U	5.60 U	6.00 U
Di-n-octyl Phthalate	7.90 U	**25.0**	7.90 U	7.90 U	8.50 U
Fluoranthene	5.80 U	5.90 U	5.80 U	5.80 U	6.20 U
Fluorene	6.60 U	6.70 U	6.60 U	6.60 U	7.10 U
Hexachlorobenzene	5.40 U	5.50 U	5.40 U	5.40 U	5.80 U
Hexachlorobutadiene	6.60 U	6.70 U	6.60 U	6.60 U	7.10 U
Hexachlorocyclopentadiene	29.0 U	29.0 U	29.0 U	29.0 U	31.0 U
Hexachloroethane	7.30 U	7.40 U	7.40 U	7.40 U	7.90 U
Indeno(1,2,3-cd)pyrene	5.80 U	5.90 U	5.80 U	5.80 U	6.20 U
Isophorone	6.20 U	6.30 U	6.20 U	6.20 U	6.70 U
Naphthalene	5.00 U	5.10 U	5.00 U	5.00 U	5.40 U
Nitrobenzene	5.80 U	5.90 U	5.80 U	5.80 U	6.20 U
N-Nitrosodimethylamine	39.0 U	40.0 U	39.0 U	39.0 U	42.0 U
N-Nitrosodi-n-propylamine	6.90 U	7.00 U	7.00 U	7.00 U	7.50 U
N-Nitrosodiphenylamine	6.70 U	6.90 U	6.80 U	6.80 U	7.30 U
p-cresol (4-Methylphenol)	6.60 U	6.70 U	6.60 U	6.60 U	7.10 U
Pentachlorophenol	42.0 U	43.0 U	42.0 U	42.0 U	45.0 U
Phenanthrene	4.40 U	4.50 U	4.40 U	4.50 U	4.80 U
Phenol	6.40 U	6.50 U	6.40 U	6.40 U	6.90 U
Pyrene	**19.0**	10.0 U	10.0 U	10.0 U	11.0 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.320**	**0.810**	**0.210**	**0.170**	**0.180**
Solids, Total	**75.0**	**72.1**	**75.4**	**74.6**	**74.4**
Gravel	**0.600**	**7.70**	**3.40**	**1.40**	**7.50**
Sand, Coarse	**3.90**	**1.40**	**4.00**	**5.90**	**2.60**
Sand, Medium	**64.9**	**24.2**	**40.2**	**40.9**	**46.4**
Sand, Fine	**22.8**	**36.7**	**39.7**	**40.3**	**32.2**
Sand	**91.6**	**62.3**	**83.9**	**87.1**	**81.2**
Silt	**5.20**	**28.3**	**10.7**	**9.10**	**9.80**
Clay	**2.60**	**1.80**	**2.00**	**2.40**	**1.50**
Fines	**7.80**	**30.1**	**12.7**	**11.5**	**11.3**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6b
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Reference Area Analytical Results
(Page 5 of 10)

Area	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147
Site ID	RF-108	RF-109	RF-110	RF-91	RF-92
Sample ID	030404RF108SD	030404RF109SD	030404RF110SD	030408RF91SD	030408RF92SD
Sample Date	4/4/2003	4/4/2003	4/4/2003	4/8/2003	4/8/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Aroclor 1221	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Aroclor 1232	0.100 U	0.400 U	0.100 U	0.0500 U	0.0500 U
Aroclor 1242	0.100 U	0.100 U	0.100 U	0.0600 U	0.0600 U
Aroclor 1248	1.30 U	0.130 U	1.00 U	0.0500 U	0.900 U
Aroclor 1254	1.70 U	0.400 U	0.670 U	0.0500 U	0.310 U
Aroclor 1260	0.240 U	0.170 U	0.240 U	0.0300 U	0.0300 U
Metals (mg/kg dry)					
Aluminum	**17,700**	**17,100**	**15,400**	**9,320**	**16,600**
Antimony	R	R	R	R	R
Arsenic	**5.00**	**3.70**	**3.90**	**3.60**	**4.50**
Barium	**135**	**163**	**131**	**64.2**	**159**
Beryllium	**0.300**	**0.200**	**0.300**	0.100 U	**0.300**
Cadmium	**0.700**	**0.600**	**0.700**	0.300 U	0.300 U
Calcium	**7,660**	**9,400**	**6,390**	**4,710**	**6,900**
Chromium	**18.0**	**19.1**	**18.0**	**15.9**	**18.4**
Cobalt	**10.9**	**13.0**	**10.3**	**7.30**	**10.3**
Copper	**23.9**	**21.9**	**22.4**	**12.1**	**23.3**
Iron	**26,400**	**29,200**	**25,000**	**19,000**	**26,000**
Lead	**11.0**	**10.7**	**12.0**	**7.40**	**11.7**
Magnesium	**6,430**	**9,130**	**5,490**	**4,250**	**6,000**
Manganese	**635**	**469**	**513**	**317**	**510**
Mercury	**0.130**	**0.0700**	**0.140**	0.0300 U	**0.0800**
Nickel	**20.0**	**30.0**	**18.0**	**14.0**	**16.0**
Potassium	**1,520**	**1,110**	**1,490**	**550**	**1,280**
Selenium	0.500 U	0.300 U	0.400 U	0.300 U	0.300 U
Silver	0.700 U	0.500 U	0.600 U	0.400 U	0.500 U
Sodium	**1,040**	**1,430**	**790**	**550**	**760**
Thallium	0.300 U	**0.200**	**0.200**	0.100 U	0.200 U
Vanadium	**61.3**	**65.1**	**61.2**	**57.9**	**66.7**
Zinc	**131**	**139**	**141**	**80.4**	**123**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	**14.0**	**9.40**	2.40 U	2.10 U	2.30 U
Residual Range Organics	**26.0 O**	5.00 U	5.00 U	5.00 U	5.00 U
Butyltins (µg/kg dry)					
Dibutyltin dichloride	5.90 U	5.80 U	5.80 U	5.70 U	5.80 U
Monobutyltin trichloride	5.90 U	5.80 U	5.80 U	5.70 U	5.80 U
Tetrabutyltin	5.90 U	5.80 U	5.80 U	5.70 U	5.80 U
Tributyltin chloride	5.90 U	5.80 U	5.80 U	5.70 U	5.80 U
Pesticides (µg/kg dry)					
4,4'-DDD	0.115 U	0.115 U	0.114 U	0.0870 U	0.0870 U
4,4'-DDE	0.213 U	0.213 U	0.211 U	0.0750 U	0.0750 U
4,4'-DDT	0.192 U	0.191 U	0.189 U	0.133 U	0.134 U
Aldrin	0.104 U	0.103 U	0.102 U	0.0350 U	0.0350 U
BHC (alpha)	0.0470 U	0.0470 U	0.0460 U	0.0520 U	0.0520 U
BHC (beta)	0.0430 U	0.0430 U	0.0430 U	0.0580 U	0.0580 U
BHC (delta)	0.0490 U	0.0490 U	0.0480 U	0.0420 U	0.0430 U
BHC (gamma) Lindane	0.0430 U	0.0430 U	0.0430 U	0.0400 U	0.0410 U
Chlordane (alpha)	0.0590 U	0.0590 U	0.0580 U	0.0290 U	0.0290 U
Chlordane (gamma)	0.112 U	0.111 U	0.110 U	0.0370 U	0.0370 U
Dieldrin	0.0820 U	0.0820 U	0.0810 U	0.0580 U	0.0580 U
Endosulfan I	0.0470 U	0.0470 U	0.0460 U	0.0520 U	0.0520 U
Endosulfan II	0.119 U	0.119 U	0.118 U	0.119 U	0.120 U
Endosulfan Sulfate	0.0980 U	0.0980 U	0.0970 U	0.162 U	0.163 U
Endrin	0.0900 U	0.0900 U	0.0890 U	0.0580 U	0.0580 U
Endrin Aldehyde	0.198 U	0.197 U	0.195 U	0.110 U	0.110 U
Endrin Ketone	0.137 U	0.137 U	0.135 U	0.197 U	0.197 U
Heptachlor	0.0820 U	0.0820 U	0.0810 U	0.0420 U	0.0430 U
Heptachlor Epoxide	0.0490 U	0.0490 U	0.0480 U	0.0420 U	0.0430 U
Methoxychlor	0.646 U	0.644 U	0.638 U	0.578 U	0.580 U
Toxaphene	4.89 U	4.88 U	4.83 U	4.34 U	4.35 U
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	4.90 U	4.80 U	4.80 U	4.80 U	4.90 U
1,2-Dichlorobenzene	5.10 U	5.00 U	5.00 U	5.00 U	5.10 U
1,3-Dichlorobenzene	4.70 U	4.60 U	4.60 U	4.60 U	4.70 U
1,4-Dichlorobenzene	5.10 U	5.00 U	5.00 U	5.00 U	5.10 U
2,4,5-Trichlorophenol	7.80 U	7.70 U	7.70 U	7.70 U	7.80 U
2,4,6-Trichlorophenol	6.60 U	6.50 U	6.60 U	6.50 U	6.60 U
2,4-Dichlorophenol	9.80 U	9.60 U	9.70 U	9.60 U	9.80 U
2,4-Dimethylphenol	9.40 U	9.20 U	9.30 U	9.20 U	9.40 U
2,4-Dinitrophenol	99.0 U	97.0 U	98.0 U	97.0 U	99.0 U
2,4-Dinitrotoluene	5.30 U	5.20 U	5.20 U	5.20 U	5.30 U
2,6-Dinitrotoluene	4.90 U	4.80 U	4.80 U	4.80 U	4.90 U
2-Chloronaphthalene	5.70 U	5.60 U	5.60 U	5.60 U	5.70 U
2-Chlorophenol	6.40 U	6.40 U	6.40 U	6.30 U	6.40 U
2-Methylnaphthalene	4.90 U	4.80 U	4.80 U	4.80 U	4.90 U
2-Methylphenol	6.60 U	6.50 U	6.60 U	6.50 U	6.60 U
2-Nitroaniline	13.0 U	13.0 U	13.0 U	13.0 U	13.0 U
2-Nitrophenol	9.60 U	9.40 U	9.50 U	9.40 U	9.60 U
3,3'-Dichlorobenzidine	34.0 U	33.0 U	34.0 U	33.0 U	34.0 U

Table G-6b
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Reference Area Analytical Results
(Page 6 of 10)

Area	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147
Site ID	RF-108	RF-109	RF-110	RF-91	RF-92
Sample ID	030404RF108SD	030404RF109SD	030404RF110SD	030408RF91SD	030408RF92SD
Sample Date	4/4/2003	4/4/2003	4/4/2003	4/8/2003	4/8/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3-Nitroaniline	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U
4,6-Dinitro-2-methylphenol	170 U	160 U	160 U	160 U	170 U
4-Bromophenyl Phenyl Ether	6.30 U	6.20 U	6.20 U	6.10 U	6.20 U
4-Chloro-3-methylphenol	9.20 U	9.00 U	9.10 U	9.00 U	9.20 U
4-Chloroaniline	14.0 U	14.0 U	14.0 U	14.0 U	14.0 U
4-Chlorophenyl Phenyl Ether	9.80 U	9.60 U	9.70 U	9.60 U	9.80 U
4-Nitroaniline	13.0 U	13.0 U	13.0 U	12.0 U	13.0 U
4-Nitrophenol	18.0 U	18.0 U	18.0 U	17.0 U	18.0 U
Acenaphthene	5.10 U	5.00 U	5.00 U	5.00 U	5.10 U
Acenaphthylene	4.50 U	4.40 U	4.50 U	4.40 U	4.50 U
Aniline	6.10 U	6.00 U	6.00 U	5.90 U	6.10 U
Anthracene	4.70 U	4.60 U	4.60 U	4.60 U	4.70 U
Benzo(a)anthracene	**14.0 J**	**10.0 J**	5.00 U	5.00 U	5.10 U
Benzo(a)pyrene	**15.0 J**	3.90 U	3.90 U	3.80 U	3.90 U
Benzo(b)fluoranthene	**16.0 J**	7.90 U	**11.0 J**	7.90 U	8.00 U
Benzo(g,h,i)perylene	5.30 U	5.20 U	5.20 U	5.20 U	5.30 U
Benzo(k)fluoranthene	**12.0 J**	11.0 U	11.0 U	11.0 U	11.0 U
Benzoic Acid	160 U	160 U	160 U	160 U	160 U
Benzyl Alcohol	20.0 U	19.0 U	19.0 U	19.0 U	20.0 U
Bis(2-chloroethoxy)methane	4.70 U	4.60 U	4.60 U	4.60 U	4.70 U
Bis(2-chloroethyl) Ether	6.60 U	6.50 U	6.60 U	6.50 U	6.60 U
Bis(2-chloroisopropyl) Ether	5.70 U	5.60 U	5.60 U	5.60 U	5.70 U
Bis(2-ethylhexyl) Phthalate	19.0 U	18.0 U	**36.0**	18.0 U	19.0 U
Butyl Benzyl Phthalate	4.90 U	4.80 U	4.80 U	4.80 U	4.90 U
Carbazole	4.70 U	4.60 U	4.60 U	4.60 U	4.70 U
Chrysene	**18.0 J**	**13.0 J**	**14.0 J**	5.90 U	6.10 U
Dibenz(a,h)anthracene	5.70 U	5.60 U	5.60 U	5.60 U	5.70 U
Dibenzofuran	4.90 U	4.80 U	4.80 U	4.80 U	4.90 U
Diethyl Phthalate	8.60 U	8.50 U	8.50 U	8.40 U	8.60 U
Dimethyl Phthalate	5.10 U	5.00 U	5.00 U	5.00 U	5.10 U
Di-n-butyl Phthalate	5.70 U	**200**	5.60 U	5.60 U	5.70 U
Di-n-octyl Phthalate	8.00 U	7.90 U	7.90 U	7.90 U	8.00 U
Fluoranthene	**33.0**	**19.0 J**	**13.0 J**	5.80 U	**26.0**
Fluorene	6.60 U	6.50 U	6.60 U	6.50 U	6.60 U
Hexachlorobenzene	5.50 U	5.40 U	5.40 U	5.40 U	5.50 U
Hexachlorobutadiene	6.60 U	6.50 U	6.60 U	6.50 U	6.60 U
Hexachlorocyclopentadiene	29.0 U	28.0 U	29.0 U	28.0 U	29.0 U
Hexachloroethane	7.40 U	7.30 U	7.40 U	7.30 U	7.40 U
Indeno(1,2,3-cd)pyrene	5.90 U	5.80 U	5.80 U	5.80 U	5.90 U
Isophorone	6.30 U	6.20 U	6.20 U	6.10 U	6.20 U
Naphthalene	5.10 U	5.00 U	5.00 U	5.00 U	5.10 U
Nitrobenzene	5.90 U	5.80 U	5.80 U	5.80 U	5.90 U
N-Nitrosodimethylamine	40.0 U	39.0 U	39.0 U	39.0 U	40.0 U
N-Nitrosodi-n-propylamine	7.00 U	6.90 U	7.00 U	6.90 U	7.00 U
N-Nitrosodiphenylamine	6.80 U	6.70 U	6.80 U	6.70 U	6.80 U
p-cresol (4-Methylphenol)	6.60 U	6.50 U	6.60 U	6.50 U	6.60 U
Pentachlorophenol	43.0 U	42.0 U	42.0 U	42.0 U	43.0 U
Phenanthrene	**16.0 J**	**14.0 J**	4.50 U	4.40 U	4.50 U
Phenol	6.40 U	6.40 U	6.40 U	6.30 U	6.40 U
Pyrene	**24.0**	**18.0 J**	**11.0 J**	10.0 U	**15.0 J**
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.900**	**0.860**	**0.620**	**0.470**	**0.610**
Solids, Total	**54.6**	**46.0**	**67.4**	**67.9**	**61.3**
Gravel	**16.1**	**2.40**	**6.70**	**2.00**	**3.40**
Sand, Coarse	**7.60**	**6.40**	**9.30**	**2.30**	**0.800**
Sand, Medium	**18.5**	**7.40**	**6.30**	**16.5**	**4.00**
Sand, Fine	**25.6**	**45.6**	**40.2**	**69.9**	**68.4**
Sand	**51.7**	**59.4**	**55.8**	**88.7**	**73.2**
Silt	**23.8**	**33.8**	**33.5**	**8.80**	**20.4**
Clay	**8.50**	**4.40**	**4.00**	**0.500**	**3.00**
Fines	**32.3**	**38.2**	**37.5**	**9.30**	**23.4**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6b
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Reference Area Analytical Results
(Page 7 of 10)

Area	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147
Site ID	RF-93	RF-94	RF-95	RF-96	RF-96 DUP
Sample ID	030408RF93SD	030408RF94SD	030408RF95SD	030408RF96SD	030408RF147SD
Sample Date	4/8/2003	4/8/2003	4/8/2003	4/8/2003	4/8/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)					
Aroclor 1016	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Aroclor 1221	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
Aroclor 1232	0.580 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U
Aroclor 1242	0.0600 U	0.0600 U	0.0600 U	0.0600 U	0.0200 U
Aroclor 1248	0.0500 U	0.900 U	1.20 U	1.20 U	0.500 U
Aroclor 1254	0.0500 U	0.580 U	0.980 U	1.40 U	0.710 U
Aroclor 1260	0.0300 U	0.0300 U	0.170 U	0.280 U	0.240 U
Metals (mg/kg dry)					
Aluminum	**23,100**	**18,000**	**16,800**	**18,200**	**19,000**
Antimony	R	R	R	R	R
Arsenic	**8.80**	**4.40**	**4.80**	**4.70**	**4.50**
Barium	**117**	**146**	**142**	**159**	**167**
Beryllium	**0.500**	**0.300**	**0.300**	**0.300**	**0.400**
Cadmium	0.300 U	**0.500**	**0.800**	**0.800**	**0.800**
Calcium	**8,090**	**7,380**	**6,590**	**6,970**	**7,190**
Chromium	**22.3**	**18.2**	**18.0**	**20.0**	**20.0**
Cobalt	**15.1**	**11.5**	**10.0**	**11.0**	**11.3**
Copper	**51.4**	**26.3**	**23.9**	**27.2**	**27.0**
Iron	**33,400**	**28,800**	**25,700**	**27,900**	**28,300**
Lead	**5.50**	**9.70**	**13.0**	**15.0**	**15.0**
Magnesium	**10,100**	**6,880**	**5,540**	**5,670**	**5,750**
Manganese	**345**	**620**	**566**	**656**	**691**
Mercury	**0.0400**	**0.130**	**0.0900**	**0.150**	**0.130**
Nickel	**21.0**	**17.0**	**16.0**	**20.0**	**19.0**
Potassium	**960**	**1,310**	**1,530**	**1,620**	**1,640**
Selenium	0.300 U	0.300 U	0.400 U	0.400 U	0.400 U
Silver	0.400 U	0.500 U	0.600 U	0.700 U	0.600 U
Sodium	**790**	**820**	**710**	**770**	**780**
Thallium	0.100 U	0.200 U	**0.200**	0.200 U	0.200 U
Vanadium	**74.8**	**67.9**	**64.2**	**67.7**	**67.9**
Zinc	**72.0**	**125**	**125**	**137**	**143**
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	2.10 U	2.30 U	2.60 U	**6.90**	**7.00**
Residual Range Organics	5.00 U	5.00 U	5.00 U	**14.0 O**	**16.0**
Butyltins (µg/kg dry)					
Dibutyltin dichloride	5.80 U	5.80 U	5.90 U	5.90 U	5.90 U
Monobutyltin trichloride	5.80 U	5.80 U	5.90 U	5.90 U	5.90 U
Tetrabutyltin	5.80 U	5.80 U	5.90 U	5.90 U	5.90 U
Tributyltin chloride	5.80 U	5.80 U	5.90 U	5.90 U	5.90 U
Pesticides (µg/kg dry)					
4,4'-DDD	0.0860 U	0.0870 U	0.0880 U	0.0880 U	0.0880 U
4,4'-DDE	0.0740 U	0.0750 U	0.0760 U	0.0760 U	0.0760 U
4,4'-DDT	0.132 U	0.133 U	0.135 U	0.135 U	0.134 U
Aldrin	0.0340 U	0.0350 U	0.0350 U	0.0350 U	0.0350 U
BHC (alpha)	0.0520 U	0.0520 U	0.0530 U	0.0530 U	0.0530 U
BHC (beta)	0.0570 U	0.0580 U	0.0590 U	0.0590 U	0.0580 U
BHC (delta)	0.0420 U	0.0420 U	0.0430 U	0.0430 U	0.0430 U
BHC (gamma) Lindane	0.0400 U	0.0400 U	0.0410 U	0.0410 U	0.0410 U
Chlordane (alpha)	0.0290 U	0.0290 U	0.0290 U	0.0290 U	0.0290 U
Chlordane (gamma)	0.0360 U	0.0370 U	0.0370 U	0.0370 U	0.0370 U
Dieldrin	0.0570 U	0.0580 U	0.0590 U	0.0590 U	0.0580 U
Endosulfan I	0.0520 U	0.0520 U	0.0530 U	0.0530 U	0.0530 U
Endosulfan II	0.118 U	0.119 U	0.121 U	0.121 U	0.121 U
Endosulfan Sulfate	0.160 U	0.162 U	0.164 U	0.165 U	0.164 U
Endrin	0.0570 U	0.0580 U	0.0590 U	0.0590 U	0.0580 U
Endrin Aldehyde	0.109 U	0.110 U	0.111 U	0.112 U	0.111 U
Endrin Ketone	0.195 U	0.196 U	0.199 U	0.200 U	0.199 U
Heptachlor	0.0420 U	0.0420 U	0.0430 U	0.0430 U	0.0430 U
Heptachlor Epoxide	0.0420 U	0.0420 U	0.0430 U	0.0430 U	0.0430 U
Methoxychlor	0.573 U	0.578 U	0.585 U	0.588 U	0.584 U
Toxaphene	4.30 U	4.33 U	4.39 U	4.41 U	4.38 U
Semivolatile Organic Compounds (µg/kg dry)					
1,2,4-Trichlorobenzene	4.80 U	4.80 U	4.90 U	4.90 U	4.90 U
1,2-Dichlorobenzene	5.00 U	5.00 U	5.10 U	5.10 U	5.10 U
1,3-Dichlorobenzene	4.60 U	4.60 U	4.70 U	4.70 U	4.70 U
1,4-Dichlorobenzene	5.00 U	5.00 U	5.10 U	5.10 U	5.10 U
2,4,5-Trichlorophenol	7.70 U	7.70 U	7.90 U	7.80 U	7.80 U
2,4,6-Trichlorophenol	6.50 U	6.50 U	6.70 U	6.60 U	6.60 U
2,4-Dichlorophenol	9.60 U	9.60 U	9.80 U	9.80 U	9.70 U
2,4-Dimethylphenol	9.20 U	9.20 U	9.40 U	9.40 U	9.40 U
2,4-Dinitrophenol	97.0 U	97.0 U	99.0 U	99.0 U	99.0 U
2,4-Dinitrotoluene	5.20 U	5.20 U	5.30 U	5.30 U	5.30 U
2,6-Dinitrotoluene	4.80 U	4.80 U	4.90 U	4.90 U	4.90 U
2-Chloronaphthalene	5.50 U	5.60 U	5.70 U	5.70 U	5.70 U
2-Chlorophenol	6.30 U	6.30 U	6.50 U	6.40 U	6.40 U
2-Methylnaphthalene	4.80 U	4.80 U	4.90 U	4.90 U	4.90 U
2-Methylphenol	6.50 U	6.50 U	6.70 U	6.60 U	6.60 U
2-Nitroaniline	13.0 U	13.0 U	13.0 U	13.0 U	13.0 U
2-Nitrophenol	9.40 U	9.40 U	9.60 U	9.60 U	9.50 U
3,3'-Dichlorobenzidine	33.0 U	33.0 U	34.0 U	34.0 U	34.0 U

Table G-6b
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Reference Area Analytical Results

Area	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147
Site ID	RF-93	RF-94	RF-95	RF-96	RF-96 DUP
Sample ID	030408RF93SD	030408RF94SD	030408RF95SD	030408RF96SD	030408RF147SD
Sample Date	4/8/2003	4/8/2003	4/8/2003	4/8/2003	4/8/2003
Medium	Sediment	Sediment	Sediment	Sediment	Sediment
3-Nitroaniline	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U
4,6-Dinitro-2-methylphenol	160 U	160 U	170 U	170 U	170 U
4-Bromophenyl Phenyl Ether	6.10 U	6.10 U	6.30 U	6.20 U	6.20 U
4-Chloro-3-methylphenol	9.00 U	9.00 U	9.20 U	9.20 U	9.20 U
4-Chloroaniline	14.0 U	14.0 U	14.0 U	14.0 U	14.0 U
4-Chlorophenyl Phenyl Ether	9.60 U	9.60 U	9.80 U	9.80 U	9.70 U
4-Nitroaniline	12.0 U	12.0 U	13.0 U	13.0 U	13.0 U
4-Nitrophenol	17.0 U	17.0 U	18.0 U	18.0 U	18.0 U
Acenaphthene	5.00 U	5.00 U	5.10 U	5.10 U	5.10 U
Acenaphthylene	4.40 U	4.40 U	4.50 U	4.50 U	4.50 U
Aniline	5.90 U	6.00 U	6.10 U	6.00 U	6.00 U
Anthracene	4.60 U	4.60 U	4.70 U	4.70 U	4.70 U
Benzo(a)anthracene	5.00 U	5.00 U	5.10 U	5.10 U	5.10 U
Benzo(a)pyrene	3.80 U	3.80 U	3.90 U	**10.0 J**	3.90 U
Benzo(b)fluoranthene	7.80 U	7.90 U	8.10 U	**10.0 J**	8.00 U
Benzo(g,h,i)perylene	5.20 U	5.20 U	5.30 U	5.30 U	5.30 U
Benzo(k)fluoranthene	11.0 U	11.0 U	11.0 U	**12.0 J**	11.0 U
Benzoic Acid	160 U	160 U	160 U	160 U	160 U
Benzyl Alcohol	19.0 U	19.0 U	20.0 U	20.0 U	19.0 U
Bis(2-chloroethoxy)methane	4.60 U	4.60 U	4.70 U	4.70 U	4.70 U
Bis(2-chloroethyl) Ether	6.50 U	6.50 U	6.70 U	6.60 U	6.60 U
Bis(2-chloroisopropyl) Ether	5.50 U	5.60 U	5.70 U	5.70 U	5.70 U
Bis(2-ethylhexyl) Phthalate	**30.0**	18.0 U	**42.0**	19.0 U	19.0 U
Butyl Benzyl Phthalate	4.80 U	4.80 U	4.90 U	4.90 U	4.90 U
Carbazole	4.60 U	4.60 U	4.70 U	4.70 U	4.70 U
Chrysene	5.90 U	6.00 U	6.10 U	**13.0 J**	6.00 U
Dibenz(a,h)anthracene	5.50 U	5.60 U	5.70 U	5.70 U	5.70 U
Dibenzofuran	4.80 U	4.80 U	4.90 U	4.90 U	4.90 U
Diethyl Phthalate	8.40 U	8.40 U	8.60 U	8.60 U	8.60 U
Dimethyl Phthalate	5.00 U	5.00 U	5.10 U	5.10 U	5.10 U
Di-n-butyl Phthalate	5.50 U	5.60 U	5.70 U	5.70 U	**17.0 J**
Di-n-octyl Phthalate	7.80 U	7.90 U	8.10 U	8.00 U	8.00 U
Fluoranthene	5.70 U	5.80 U	**14.0 J**	**18.0 J**	**12.0 J**
Fluorene	6.50 U	6.50 U	6.70 U	6.60 U	6.60 U
Hexachlorobenzene	5.40 U	5.40 U	5.50 U	5.50 U	5.50 U
Hexachlorobutadiene	6.50 U	6.50 U	6.70 U	6.60 U	6.60 U
Hexachlorocyclopentadiene	28.0 U	28.0 U	29.0 U	29.0 U	29.0 U
Hexachloroethane	7.30 U	7.30 U	7.50 U	7.40 U	7.40 U
Indeno(1,2,3-cd)pyrene	5.70 U	5.80 U	5.90 U	5.90 U	5.80 U
Isophorone	6.10 U	6.10 U	6.30 U	6.20 U	6.20 U
Naphthalene	5.00 U	5.00 U	5.10 U	5.10 U	5.10 U
Nitrobenzene	5.70 U	5.80 U	5.90 U	5.90 U	5.80 U
N-Nitrosodimethylamine	39.0 U	39.0 U	40.0 U	40.0 U	40.0 U
N-Nitrosodi-n-propylamine	6.90 U	6.90 U	7.10 U	7.00 U	7.00 U
N-Nitrosodiphenylamine	6.70 U	6.70 U	6.90 U	6.80 U	6.80 U
p-cresol (4-Methylphenol)	6.50 U	6.50 U	6.70 U	6.60 U	6.60 U
Pentachlorophenol	42.0 U	42.0 U	43.0 U	43.0 U	42.0 U
Phenanthrene	4.40 U	4.40 U	4.50 U	4.50 U	4.50 U
Phenol	6.30 U	6.30 U	6.50 U	6.40 U	6.40 U
Pyrene	9.90 U	10.0 U	**11.0 J**	**14.0 J**	10.0 U
General Chemistry Parameters and Grain Size (%)					
Carbon, Total Organic	**0.240**	**0.700**	**1.00**	**1.10**	**0.650**
Solids, Total	**56.8**	**64.9**	**55.7**	**49.6**	**56.1**
Gravel	**5.50**	**16.1**	**0.700**	**0.400**	**2.30**
Sand, Coarse	**28.5**	**4.90**	**0.500**	**0.500**	**0.100**
Sand, Medium	**20.7**	**3.60**	**2.20**	**1.30**	**1.50**
Sand, Fine	**12.7**	**32.1**	**71.8**	**51.4**	**46.7**
Sand	**61.9**	**40.6**	**74.5**	**53.2**	**48.3**
Silt	**30.9**	**41.5**	**20.2**	**40.8**	**43.8**
Clay	**1.60**	**1.80**	**4.60**	**5.60**	**5.60**
Fines	**32.5**	**43.3**	**24.8**	**46.4**	**49.4**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6b
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Reference Area Analytical Results
(Page 9 of 10)

Area	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147
Site ID	RF-97	RF-98	RF-99
Sample ID	030407RF97SD	030407RF98SD	030407RF99SD
Sample Date	4/7/2003	4/7/2003	4/7/2003
Medium	Sediment	Sediment	Sediment
PCB Aroclors (µg/kg dry)			
Aroclor 1016	0.0200 U	0.0200 U	0.0200 U
Aroclor 1221	0.0200 U	0.0200 U	0.0200 U
Aroclor 1232	0.0500 U	0.0500 U	0.0500 U
Aroclor 1242	0.0600 U	0.0600 U	0.0600 U
Aroclor 1248	1.00 U	0.600 U	1.10 U
Aroclor 1254	1.00 U	0.900 U	1.60 U
Aroclor 1260	0.170 U	0.280 U	0.340 U
Metals (mg/kg dry)			
Aluminum	**15,400**	**22,000**	**16,600**
Antimony	**0.400 J**	R	R
Arsenic	**3.90**	**5.60**	**4.60**
Barium	**141**	**177**	**152**
Beryllium	**0.300**	**0.400**	**0.300**
Cadmium	**0.700**	**0.900**	**0.500**
Calcium	**6,410**	**7,840**	**6,700**
Chromium	**18.0**	**23.0**	**18.3**
Cobalt	**9.90**	**13.0**	**10.6**
Copper	**21.9**	**33.4**	**24.9**
Iron	**24,800**	**32,000**	**26,000**
Lead	**13.0**	**16.0**	**13.8**
Magnesium	**5,030**	**6,300**	**5,590**
Manganese	**560**	**815**	**665**
Mercury	**0.0800**	**0.210**	**0.130**
Nickel	**16.0**	**20.0**	**17.0**
Potassium	**1,420**	**2,000**	**1,500**
Selenium	0.400 U	0.700 U	0.300 U
Silver	0.600 U	1.00 U	0.500 U
Sodium	**710**	**830**	**690**
Thallium	**0.400**	0.300 U	**0.200**
Vanadium	**66.0**	**76.0**	**62.9**
Zinc	**132**	**154**	**129**
Petroleum Hydrocarbons (mg/kg dry)			
Diesel Range Organics	**5.90**	3.10 U	**5.60**
Residual Range Organics	**13.0 O**	5.00 U	**11.0 O**
Butyltins (µg/kg dry)			
Dibutyltin dichloride	5.90 U	5.80 U	5.90 U
Monobutyltin trichloride	5.90 U	5.80 U	5.90 U
Tetrabutyltin	5.90 U	5.80 U	5.90 U
Tributyltin chloride	5.90 U	5.80 U	5.90 U
Pesticides (µg/kg dry)			
4,4'-DDD	0.0880 U	0.0870 U	0.0880 U
4,4'-DDE	0.0760 U	0.0760 U	0.0760 U
4,4'-DDT	0.135 U	0.134 U	0.134 U
Aldrin	0.0350 U	0.0350 U	0.0350 U
BHC (alpha)	0.0530 U	0.0520 U	0.0530 U
BHC (beta)	0.0590 U	0.0580 U	0.0580 U
BHC (delta)	0.0430 U	0.0430 U	0.0430 U
BHC (gamma) Lindane	0.0410 U	0.0410 U	0.0410 U
Chlordane (alpha)	0.0290 U	0.0290 U	0.0290 U
Chlordane (gamma)	0.0370 U	0.0370 U	0.0370 U
Dieldrin	0.0590 U	0.0580 U	0.0580 U
Endosulfan I	0.0530 U	0.0520 U	0.0530 U
Endosulfan II	0.121 U	0.120 U	0.121 U
Endosulfan Sulfate	0.164 U	0.163 U	0.163 U
Endrin	0.0590 U	0.0580 U	0.0580 U
Endrin Aldehyde	0.112 U	0.111 U	0.111 U
Endrin Ketone	0.200 U	0.198 U	0.198 U
Heptachlor	0.0430 U	0.0430 U	0.0430 U
Heptachlor Epoxide	0.0430 U	0.0430 U	0.0430 U
Methoxychlor	0.587 U	0.582 U	0.584 U
Toxaphene	4.40 U	4.37 U	4.38 U
Semivolatile Organic Compounds (µg/kg dry)			
1,2,4-Trichlorobenzene	4.90 U	4.90 U	4.90 U
1,2-Dichlorobenzene	5.10 U	5.00 U	5.10 U
1,3-Dichlorobenzene	4.70 U	4.70 U	4.70 U
1,4-Dichlorobenzene	5.10 U	5.00 U	5.10 U
2,4,5-Trichlorophenol	7.90 U	7.80 U	7.80 U
2,4,6-Trichlorophenol	6.70 U	6.60 U	6.60 U
2,4-Dichlorophenol	9.80 U	9.70 U	9.70 U
2,4-Dimethylphenol	9.40 U	9.30 U	9.30 U
2,4-Dinitrophenol	99.0 U	98.0 U	98.0 U
2,4-Dinitrotoluene	5.30 U	5.20 U	5.30 U
2,6-Dinitrotoluene	4.90 U	4.90 U	4.90 U
2-Chloronaphthalene	5.70 U	5.60 U	5.60 U
2-Chlorophenol	6.50 U	6.40 U	6.40 U
2-Methylnaphthalene	4.90 U	4.90 U	4.90 U
2-Methylphenol	6.70 U	6.60 U	6.60 U
2-Nitroaniline	13.0 U	13.0 U	13.0 U
2-Nitrophenol	9.60 U	9.50 U	9.50 U
3,3'-Dichlorobenzidine	34.0 U	34.0 U	34.0 U

Table G-6b
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Reference Area Analytical Results
(Page 10 of 10)

Area	Reference Area at River Mile 147	Reference Area at River Mile 147	Reference Area at River Mile 147
Site ID	RF-97	RF-98	RF-99
Sample ID	030407RF97SD	030407RF98SD	030407RF99SD
Sample Date	4/7/2003	4/7/2003	4/7/2003
Medium	Sediment	Sediment	Sediment
3-Nitroaniline	11.0 U	11.0 U	11.0 U
4,6-Dinitro-2-methylphenol	170 U	160 U	170 U
4-Bromophenyl Phenyl Ether	6.30 U	6.20 U	6.20 U
4-Chloro-3-methylphenol	9.20 U	9.10 U	9.10 U
4-Chloroaniline	14.0 U	14.0 U	14.0 U
4-Chlorophenyl Phenyl Ether	9.80 U	9.70 U	9.70 U
4-Nitroaniline	13.0 U	13.0 U	13.0 U
4-Nitrophenol	18.0 U	18.0 U	18.0 U
Acenaphthene	5.10 U	5.00 U	5.10 U
Acenaphthylene	4.50 U	4.50 U	4.50 U
Aniline	6.10 U	6.00 U	6.00 U
Anthracene	4.70 U	4.70 U	4.70 U
Benzo(a)anthracene	**12.0 J**	**13.0 J**	5.10 U
Benzo(a)pyrene	**13.0 J**	**15.0 J**	3.90 U
Benzo(b)fluoranthene	**15.0 J**	**13.0 J**	8.00 U
Benzo(g,h,i)perylene	5.30 U	**9.70 J**	5.30 U
Benzo(k)fluoranthene	11.0 U	11.0 U	11.0 U
Benzoic Acid	160 U	160 U	160 U
Benzyl Alcohol	20.0 U	19.0 U	19.0 U
Bis(2-chloroethoxy)methane	4.70 U	4.70 U	4.70 U
Bis(2-chloroethyl) Ether	6.70 U	6.60 U	6.60 U
Bis(2-chloroisopropyl) Ether	5.70 U	5.60 U	5.60 U
Bis(2-ethylhexyl) Phthalate	19.0 U	18.0 U	18.0 U
Butyl Benzyl Phthalate	4.90 U	4.90 U	4.90 U
Carbazole	4.70 U	4.70 U	4.70 U
Chrysene	**17.0 J**	**16.0 J**	6.00 U
Dibenz(a,h)anthracene	5.70 U	5.60 U	5.60 U
Dibenzofuran	4.90 U	4.90 U	4.90 U
Diethyl Phthalate	8.70 U	8.50 U	8.60 U
Dimethyl Phthalate	5.10 U	5.00 U	5.10 U
Di-n-butyl Phthalate	5.70 U	5.60 U	5.60 U
Di-n-octyl Phthalate	8.10 U	8.00 U	8.00 U
Fluoranthene	**26.0**	**28.0**	5.80 U
Fluorene	6.70 U	6.60 U	6.60 U
Hexachlorobenzene	5.50 U	5.40 U	5.40 U
Hexachlorobutadiene	6.70 U	6.60 U	6.60 U
Hexachlorocyclopentadiene	29.0 U	29.0 U	29.0 U
Hexachloroethane	7.50 U	7.40 U	7.40 U
Indeno(1,2,3-cd)pyrene	5.90 U	19.0 U	5.80 U
Isophorone	6.30 U	6.20 U	6.20 U
Naphthalene	5.10 U	5.00 U	5.10 U
Nitrobenzene	5.90 U	5.80 U	5.80 U
N-Nitrosodimethylamine	40.0 U	39.0 U	39.0 U
N-Nitrosodi-n-propylamine	7.10 U	7.00 U	7.00 U
N-Nitrosodiphenylamine	6.90 U	6.80 U	6.80 U
p-cresol (4-Methylphenol)	6.70 U	6.60 U	6.60 U
Pentachlorophenol	43.0 U	42.0 U	42.0 U
Phenanthrene	**18.0 J**	**12.0 J**	4.50 U
Phenol	6.50 U	6.40 U	6.40 U
Pyrene	**20.0 J**	**22.0**	10.0 U
General Chemistry Parameters and Grain Size (%)			
Carbon, Total Organic	**1.30**	**1.10**	**1.60**
Solids, Total	**50.5**	**44.8**	**42.4**
Gravel	**1.40**	**0.000**	**0.000**
Sand, Coarse	**0.500**	**0.300**	**0.600**
Sand, Medium	**1.30**	**1.70**	**2.80**
Sand, Fine	**61.3**	**33.4**	**57.1**
Sand	**63.1**	**35.4**	**60.5**
Silt	**28.4**	**52.7**	**31.8**
Clay	**7.20**	**11.9**	**7.70**
Fines	**35.6**	**64.6**	**39.5**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-6c
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Surface Water Analytical Results
(Page 1 of 2)

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	DP-122	DP-124	DP-124 DUP	DP-125	DP-127	GI-115
Sample ID	030409DP122WC	030409DP124WC	030409DP148WC	030409DP125WC	030409DP127WC	030409GI115WC
Sample Date	4/9/2003	4/9/2003	4/9/2003	4/9/2003	4/9/2003	4/9/2003
Metals (mg/L)						
Calcium	**14.6**	**16.1**	**15.7**	**16.3**	**16.8**	**16.3**
Magnesium	**4.66**	**5.11**	**5.00**	**5.17**	**5.34**	**5.17**
General Chemistry Parameters (mg/L)						
Carbon, Dissolved Organic	**5.30**	**2.60**	**2.50**	**2.80**	**2.30**	**3.70**
Total Suspended Solids	**7.10**	**6.70**	**6.80**	**7.40**	**7.30**	**7.90**
Hardness (by Calculation)	**56.0**	**61.0**	**60.0**	**62.0**	**64.0**	**62.0**
Biological Oxygen Demand	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chemical Oxygen Demand	**5.10**	**8.70**	**8.00**	**9.30**	5.00 U	**9.70**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-6c
Data Not Used in the RI - 2003 Stage 1 and 2 Sediment Investigation
Surface Water Analytical Results
(Page 2 of 2)

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Reference Area at River Mile 147	Reference Area at River Mile 147
Site ID	S1-38	S1-41	S1-50	RF-104	RF-96
Sample ID	030409S138WC	030409S141WC	030409S150WC	030409RF104WC	030409RF96WC
Sample Date	4/9/2003	4/9/2003	4/9/2003	4/9/2003	4/9/2003
Metals (mg/L)					
Calcium	**15.6**	**15.9**	**15.8**	**16.6**	**15.8**
Magnesium	**4.97**	**5.04**	**5.00**	**5.29**	**5.02**
General Chemistry Parameters (mg/L)					
Carbon, Dissolved Organic	**4.00**	**2.90**	**2.60**	**2.90**	**3.50**
Total Suspended Solids	**6.20**	**4.90**	**6.80**	**8.00**	**5.90**
Hardness (by Calculation)	**59.0**	**60.0**	**60.0**	**63.0**	**60.0**
Biological Oxygen Demand	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chemical Oxygen Demand	5.00 U	**9.00**	**8.70**	**12.0**	**12.0**

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.

Table G-7
Data Not Used in the RI - 2004 Sandblast Supplemental Site Investigation
Catchbasin Solids Analytical Results
(Page 1 of 3)

Area	Sandblast	Sandblast
Site ID	CB1	CB1-FS
Sample ID	041122SGA19SS	041122SGA18SS
Sample Date	11/22/2004	11/22/2004
Location	Catchbasin	Catchbasin Filter Sock
PCB Aroclors (µg/kg dry)		
Aroclor 1016	3.79 U	4.49 U
Aroclor 1221	3.79 U	4.49 U
Aroclor 1232	3.79 U	4.49 U
Aroclor 1242	3.79 U	4.49 U
Aroclor 1248	3.79 U	4.49 U
Aroclor 1254	2.08 U	**207**
Aroclor 1260	**172**	**144**
Metals (mg/kg dry)		
Aluminum	**4,410**	**3,020**
Antimony	**1.32**	**1.39**
Arsenic	**3.95**	**3.65**
Barium	**61.7**	**38.6**
Beryllium	**0.107 J**	**0.0964 J**
Cadmium	**1.35**	**1.31**
Calcium	**4,210**	**4,350**
Chromium	**374**	**394**
Cobalt	**12.0**	**10.5**
Copper	**89.2**	**89.6**
Iron	**30,800**	**29,100**
Lead	**577**	**447**
Magnesium	**9,190**	**11,600**
Manganese	**471**	**432**
Mercury	**0.0128 J**	**0.0442**
Nickel	**100**	**146**
Potassium	**258**	**249**
Selenium	**0.190 J**	**0.127 J**
Silver	**0.0880**	**0.158**
Sodium	13.6 U	16.9 U
Thallium	**0.0423 J**	**0.0317 J**
Vanadium	**40.7**	**27.6**
Zinc	**248**	**223**
Petroleum Hydrocarbons (mg/kg dry)		
Diesel Range Organics	-	**107**
Residual Range Organics	-	**855**
Gasoline Range Organics	-	6.08 U
Butyltins (µg/kg dry)		
Dibutyltin	**6.96 J**	**6.13 J**
Monobutyltin	**15.3 J**	**9.70 J**
Tetrabutyltin	1.00 U	1.17 U
Tributyltin	**12.6 J**	**3.80 J**
Pesticides (µg/kg dry)		
4,4'-DDD	-	0.311 U
4,4'-DDE	-	**1.54 J**
4,4'-DDT	-	**19.1**
Aldrin	-	**0.980 J**
BHC (alpha)	-	0.152 U
BHC (beta)	-	**12.5 J**
BHC (delta)	-	0.152 U
BHC (gamma) Lindane	-	0.183 U
Chlordane (alpha)	-	0.165 U
Chlordane (gamma)	-	**3.37 J**
Dieldrin	-	**9.41 J**
Endosulfan I	-	0.171 U
Endosulfan II	-	**10.8 J**
Endosulfan Sulfate	-	**1.61 J**
Endrin	-	**8.45**
Endrin Aldehyde	-	0.884 U
Endrin Ketone	-	0.171 U
Heptachlor	-	0.152 U
Heptachlor Epoxide	-	0.209 U
Methoxychlor	-	0.219 U
Toxaphene	-	15.2 U
General Chemistry Parameters and Grain Size (%)		
Carbon, Total Organic	-	**2.94**
Gravel, Unspecified sieve size	-	**6.90**
Coarse Sand, Unspecified sieve size	-	**21.4**
Medium Sand, Unspecified sieve size	-	**47.4**
Fine Sand, Unspecified sieve size	-	**12.8**
Fines, Unspecified sieve size	-	**11.5**
Volatile Organic Compounds (µg/kg dry)		
1,1,1,2-Tetrachloroethane	-	0.0740 U
1,1,1-Trichloroethane (TCA)	-	0.109 U
1,1,2,2-Tetrachloroethane	-	0.107 U
1,1,2-Trichloroethane	-	0.150 U
1,1-Dichloroethane	-	0.0956 U
1,1-Dichloroethene	-	0.738 U
1,1-Dichloropropene	-	1.51 U
1,2,3-Trichlorobenzene	-	0.180 U
1,2,3-Trichloropropane	-	0.126 U
1,2,4-Trichlorobenzene	-	0.184 U

Table G-7
Data Not Used in the RI - 2004 Sandblast Supplemental Site Investigation
Catchbasin Solids Analytical Results
(Page 2 of 3)

Area	Sandblast	Sandblast
Site ID	CB1	CB1-FS
Sample ID	041122SGA19SS	041122SGA18SS
Sample Date	11/22/2004	11/22/2004
Location	Catchbasin	Catchbasin Filter Sock
1,2,4-Trimethylbenzene	-	0.0799 U
1,2-Dibromo-3-chloropropane	-	0.225 UJ
1,2-Dibromoethane (EDB)	-	0.0962 U
1,2-Dichlorobenzene	-	0.0962 U
1,2-Dichloroethane (EDC)	-	0.147 U
1,2-Dichloropropane	-	0.0716 U
1,3,5-Trimethylbenzene	-	0.0721 U
1,3-Dichlorobenzene	-	0.0653 U
1,3-Dichloropropane	-	0.101 U
1,4-Dichlorobenzene	-	0.0922 U
2,2-Dichloropropane	-	0.128 U
2-Butanone (MEK)	-	14.5 U
2-Chlorotoluene	-	0.0820 U
2-Hexanone	-	2.06 U
4-Chlorotoluene	-	0.157 U
4-Isopropyltoluene	-	**4.36**
4-Methyl-2-pentanone (MIBK)	-	**2.14 J**
Acetone	-	129 U
Benzene	-	**0.372 J**
Bromobenzene	-	0.0752 U
Bromochloromethane	-	0.0867 U
Bromodichloromethane	-	0.117 U
Bromoform	-	0.117 UJ
Bromomethane	-	0.665 U
Carbon Disulfide	-	1.89 U
Carbon Tetrachloride	-	0.159 U
Chlorobenzene	-	0.0841 U
Chloroethane	-	1.09 U
Chloroform	-	0.101 U
Chloromethane	-	0.663 U
cis-1,2-Dichloroethene	-	0.170 U
cis-1,3-Dichloropropene	-	0.0691 U
Dibromochloromethane	-	0.122 U
Dibromomethane	-	0.123 U
Dichlorodifluoromethane	-	0.0774 U
Dichloromethane (Methylene Chloride)	-	2.35 U
Ethylbenzene	-	1.89 U
Hexachlorobutadiene	-	0.111 U
Isopropylbenzene	-	0.0706 U
m,p-Xylenes	-	3.79 U
Naphthalene	-	0.780 U
n-Butylbenzene	-	0.175 U
n-Propylbenzene	-	0.0888 U
o-Xylene	-	1.89 U
sec-Butylbenzene	-	0.0738 U
Styrene	-	1.89 U
tert-Butylbenzene	-	0.0456 U
Tetrachloroethene (PCE)	-	0.191 U
Toluene	-	1.89 U
trans-1,2-Dichloroethene	-	0.473 U
trans-1,3-Dichloropropene	-	0.0858 U
Trichloroethene (TCE)	-	0.0608 U
Trichlorofluoromethane	-	0.663 U
Vinyl Acetate	-	1.91 U
Vinyl Chloride	-	0.352 U
Semivolatile Organic Compounds (µg/kg dry)		
1,2,4-Trichlorobenzene	11.3 U	13.4 U
1,2-Dichlorobenzene	9.05 U	10.7 U
1,3-Dichlorobenzene	11.4 U	13.5 U
1,4-Dichlorobenzene	11.2 U	13.3 U
2,4,5-Trichlorophenol	10.3 U	12.3 U
2,4,6-Trichlorophenol	10.5 U	12.5 U
2,4-Dichlorophenol	11.8 U	14.0 U
2,4-Dimethylphenol	10.2 UJ	12.1 UJ
2,4-Dinitrophenol	93.2 U	110 U
2,4-Dinitrotoluene	22.7 U	26.9 U
2,6-Dinitrotoluene	14.3 U	16.9 U
2-Chloronaphthalene	9.00 U	10.7 U
2-Chlorophenol	8.97 U	10.6 U
2-Methylnaphthalene	6.93 U	8.22 U
2-Methylphenol	12.6 U	14.9 U
2-Nitroaniline	7.24 U	8.58 U
2-Nitrophenol	15.2 U	18.0 U
3-&4-Methylphenol	15.7 U	18.7 U
3,3'-Dichlorobenzidine	57.9 U	68.6 U
3-Nitroaniline	39.1 U	46.3 U
4,6-Dinitro-2-methylphenol	24.0 U	28.5 U
4-Bromophenyl Phenyl Ether	24.5 U	29.1 U
4-Chloro-3-methylphenol	11.9 U	14.1 U
4-Chloroaniline	12.4 U	**411 J**
4-Chlorophenyl Phenyl Ether	28.7 U	34.0 UJ

Table G-7
Data Not Used in the RI - 2004 Sandblast Supplemental Site Investigation
Catchbasin Solids Analytical Results
(Page 3 of 3)

Area	Sandblast	Sandblast
Site ID	CB1	CB1-FS
Sample ID	041122SGA19SS	041122SGA18SS
Sample Date	11/22/2004	11/22/2004
Location	Catchbasin	Catchbasin Filter Sock
4-Nitroaniline	54.7 U	64.8 U
4-Nitrophenol	109 U	129 U
Acenaphthene	**265 J**	**128**
Acenaphthylene	**31.4 J**	**68.2**
Aniline	24.5 U	29.1 U
Anthracene	**538 J**	**204**
Benzidine	37.6 U	44.6 U
Benzo(a)anthracene	**2,300 J**	**716 J**
Benzo(a)pyrene	**1,390 J**	**652**
Benzo(g,h,i)perylene	**648 J**	**478 J**
Benzofluoranthenes, Total	**2,390 J**	**1,250**
Benzoic Acid	213 U	**377 J**
Benzyl Alcohol	26.5 U	31.5 U
Bis(2-chloroethoxy)methane	25.6 UJ	30.3 UJ
Bis(2-chloroethyl) Ether	20.9 U	24.8 U
Bis(2-chloroisopropyl) Ether	107 U	126 U
Bis(2-ethylhexyl) Phthalate	**43,500 J**	**20,300**
Butyl Benzyl Phthalate	28.5 U	33.8 U
Carbazole	**324 J**	**255**
Chrysene	**3,230 J**	**921**
Dibenz(a,h)anthracene	**273 J**	**130 J**
Dibenzofuran	**56.2 J**	**77.7 J**
Diethyl Phthalate	48.1 U	57.1 U
Dimethyl Phthalate	26.1 U	31.0 U
Di-n-butyl Phthalate	**251 J**	**247 J**
Di-n-octyl Phthalate	24.5 U	**425**
Fluoranthene	**6,380 J**	**1,990**
Fluorene	**134 J**	**121**
Hexachlorobenzene	7.05 U	8.36 U
Hexachlorobutadiene	9.75 U	11.6 U
Hexachlorocyclopentadiene	10.6 U	12.5 U
Hexachloroethane	22.5 U	26.7 U
Indeno(1,2,3-cd)pyrene	**557 J**	**367 J**
Isophorone	6.72 U	7.97 U
Naphthalene	11.8 U	14.0 U
Nitrobenzene	40.1 U	47.6 U
N-Nitrosodimethylamine	40.7 U	48.2 U
N-Nitrosodi-n-propylamine	17.9 U	21.2 U
N-Nitrosodiphenylamine	7.63 U	9.04 U
Pentachlorophenol	25.9 U	30.7 U
Phenanthrene	**1,940 J**	**1,630**
Phenol	9.64 U	11.4 U
Pyrene	**7,190 J**	**1,600**

Notes:

µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.

J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-8a
Data Not Used in the RI - 2006 Sediment Removal Design Data Gaps Report
Sediment Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	Debris Pile 01	Debris Pile 02	Debris Pile 02 DUP
Sample ID	060409-SED-3	060405-SED-1	060405-SED-2
Sample Date	4/9/2006	4/5/2006	4/5/2006
PCB Aroclors (µg/kg dry)			
Aroclor 1016	23.0 U	12.0 U	0.390 U
Aroclor 1221	23.0 U	12.0 U	0.390 U
Aroclor 1232	23.0 U	12.0 U	0.390 U
Aroclor 1242	17.0 U	8.80 U	0.390 U
Aroclor 1248	23.0 U	12.0 U	0.390 U
Aroclor 1254	**440**	**160**	**2,100 J**
Aroclor 1260	23.0 U	12.0 U	0.390 U
Aroclor 1262	23.0 U	12.0 U	0.390 U
Aroclor 1268	23.0 U	12.0 U	0.390 U
Metals (mg/kg dry)			
Copper	**29.7**	**31.6 J**	**536 J**
Lead	**3.00**	**17.0 J**	**47.0 J**
Dioxins/Furans (µg/kg dry)			
1,2,3,4,6,7,8-HpCDD	0.000770 U	0.00220 U	0.00170 U
1,2,3,4,6,7,8-HpCDF	0.000550 U	0.00130 U	0.000700 U
1,2,3,4,7,8,9-HpCDF	0.000610 U	0.000540 U	0.000580 U
1,2,3,4,7,8-HxCDD	0.000630 U	0.000670 U	0.000800 U
1,2,3,4,7,8-HxCDF	0.000490 U	0.00180 U	0.000630 U
1,2,3,6,7,8-HxCDD	0.000650 U	0.000690 U	0.000800 U
1,2,3,6,7,8-HxCDF	0.000430 U	0.000970 U	0.000530 U
1,2,3,7,8,9-HxCDD	0.000600 U	0.000640 U	0.000750 U
1,2,3,7,8,9-HxCDF	0.000400 U	0.000440 U	0.000510 U
1,2,3,7,8-PeCDD	0.00100 U	0.00130 U	0.00140 U
1,2,3,7,8-PeCDF	0.000600 U	0.000690 U	0.000810 U
2,3,4,6,7,8-HxCDF	0.000380 U	0.000430 U	0.000480 U
2,3,4,7,8-PeCDF	0.000580 U	0.000690 U	0.000770 U
2,3,7,8-TCDD	0.000450 U	0.000540 U	0.000640 U
2,3,7,8-TCDF	0.000440 U	0.000570 U	0.000700 U
OCDD	0.00440 U	**0.0140 J**	0.0140 UJ
OCDF	0.00100 U	0.00150 U	0.000980 U
Total HpCDD	0.00110 U	**0.00360**	0.00270 U
Total HpCDF	0.000610 U	0.00130 U	0.000870 U
Total HxCDD	0.000650 U	0.000850 U	0.000800 U
Total HxCDF	0.000490 U	0.00180 U	0.000630 U
Total PeCDD	0.00100 U	0.00130 U	0.00160 U
Total PeCDF	0.000630 U	0.000900 U	0.000810 U
Total TCDD	0.000450 U	0.000540 U	0.000640 U
Total TCDF	0.000440 U	0.000570 U	0.000700 U
Semivolatile Organic Compounds (µg/kg dry)			
1-Methylnaphthalene	1.70 U	1.70 U	1.70 U
2-Methylnaphthalene	2.30 U	2.30 U	2.20 U
Acenaphthene	2.40 U	2.40 U	2.40 U
Acenaphthylene	3.00 UJ	2.90 UJ	2.90 UJ
Anthracene	0.900 U	**11.0**	**7.00**
Benzo(a)anthracene	3.10 U	**100**	**130**
Benzo(a)pyrene	3.60 U	**100**	**130**
Benzo(b)fluoranthene	2.70 U	**88.0**	**110**
Benzo(g,h,i)perylene	1.90 U	**61.0**	**89.0**
Benzo(k)fluoranthene	2.30 U	**92.0**	**120**
Bis(2-ethylhexyl) Phthalate	66.0 U	**72.0**	64.0 U
Chrysene	2.70 U	**120**	**150**
Dibenz(a,h)anthracene	2.80 U	**19.0**	**32.0**
Dibenzofuran	2.10 U	2.10 U	2.00 U
Fluoranthene	3.30 U	**170**	**180**
Fluorene	3.30 U	3.30 U	3.20 U
Indeno(1,2,3-cd)pyrene	2.30 U	**56.0**	**80.0**
Naphthalene	1.70 U	1.60 U	1.60 U
Phenanthrene	2.30 U	**47.0**	**22.0**
Pyrene	3.80 U	**150**	**160**
General Chemistry Parameters and Grain Size (%)			
Carbon, Total Organic	**0.406**	**0.514**	**0.559**
Solids, Total	**77.6**	**74.6**	**73.5**
Gravel (>2.00 mm)	**60.2**	**15.8**	-
Sand, Very Coarse (1.00 - 2.00 mm)	**14.7**	**17.8**	-
Sand, Coarse (0.50 - 1.00 mm)	**8.50**	**28.5**	-
Sand, Medium (0.25 - 0.50 mm)	**6.20**	**17.7**	-
Sand, Fine (0.125 - 0.25 mm)	**3.00**	**10.4**	-
Sand, Very Fine (0.0625 - 0.125 mm)	**1.50**	**3.70**	-
Silt, Coarse (0.031 - 0.0625 mm)	**2.50**	**1.60**	-
Silt, Medium (0.0156 - 0.031 mm)	**0.900**	**1.20**	-
Silt, Fine (0.0078 - 0.0156 mm)	**0.700**	**0.900**	-
Silt, Very Fine (0.0039 - 0.0078 mm)	**0.400**	**0.500**	-
Clay, Coarse (0.002 - 0.0039 mm)	**0.300**	**0.500**	-
Clay, Medium (0.001 - 0.002 mm)	**0.200**	**0.500**	-
Clay, Fine (<0.001 mm)	**0.800**	**0.800**	-

Notes:

Results of PCB congener analysis for these samples are shown in Table F-6d.
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed

bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-8b
Data Not Used in the RI - 2006 Sediment Removal Design Data Gaps Report
High-Volume Sampling Surface Water Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	Debris Pile 01	Debris Pile 01	Goose Island	Goose Island
Sample ID	060403-FIL-1	060403-XAD-1	060404-FIL-2	060404-XAD-2
Sample Date	4/3/2006	4/3/2006	4/4/2006	4/4/2006
Preparation Fraction	Particulate	Dissolved	Particulate	Dissolved
PCB Aroclors (estimated from PCB congener analysis - µg/L)				
Aroclor 1016	0.0000000802 U	0.000000140 U	0.0000000813 U	0.000000172 U
Aroclor 1221	0.0000000416 U	0.0000000725 U	0.0000000421 U	0.0000000893 U
Aroclor 1232	0.0000000133 U	0.0000000143 U	0.0000000112 U	0.0000000211 U
Aroclor 1242	**0.00000204**	**0.00000728**	**0.00000192**	**0.00000671**
Aroclor 1248	0.0000000439 U	0.0000000354 U	0.0000000512 U	0.0000000628 U
Aroclor 1254	**0.0000165**	**0.0000114**	**0.00000922**	**0.00000780**
Aroclor 1260	**0.00000503**	**0.000000945**	**0.00000457**	**0.00000104**
Polycyclic Aromatic Hydrocarbons (µg/L)				
Anthracene	0.0000350 U	0.0000610 EMPC	0.0000380 U	0.0000660 EMPC
Benzo(a)anthracene	0.0000570 EMPC	0.0000110 EMPC	0.0000570 EMPC	0.0000260 EMPC
Benzo(a)pyrene	**0.0000600**	0.00000400 EMPC	**0.0000600**	0.0000150 U
Benzo(b)fluoranthene	**0.0000800**	0.00000400 U	**0.0000820**	0.0000220 U
Benzo(g,h,i)perylene	**0.0000630**	0.0000106 U	**0.0000710**	0.0000140 U
Benzo(k)fluoranthene	**0.0000490**	0.00000500 EMPC	**0.0000520**	0.0000200 U
Bis(2-ethylhexyl) Phthalate	0.00635 U	0.00730 U	0.00422 U	0.00445 U
Chrysene	**0.000152**	**0.0000550**	**0.000130**	**0.0000760**
Dibenz(a,h)anthracene	0.0000120 EMPC	0.00000520 U	0.0000161 U	0.00000890 U
Fluoranthene	**0.000227**	**0.000462**	**0.000215**	**0.000529**
Indeno(1,2,3-cd)pyrene	0.0000500 EMPC	0.0000103 U	0.0000550 EMPC	0.0000140 EMPC
Phenanthrene	**0.000457**	**0.000788**	**0.000320**	**0.000839**
Pyrene	**0.000171**	**0.000171**	**0.000149**	**0.000175**

Notes:
Results of PCB congener analysis for these samples are shown in Table F-6e.
µg/L = microgram per liter
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-8c
Data Not Used in the RI - 2006 Sediment Removal Design Data Gaps Report
Surface Water Grab Sample Analytical Results

Area	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal	Forebay Pre-Sediment Removal
Site ID	Debris Pile 01	Debris Pile 01 DUP	Goose Island
Sample ID	060403-SW-1	060403-SW-2	060403-SW-3
Sample Date	4/3/2006	4/3/2006	4/3/2006
PCB Aroclors (µg/L)			
Aroclor 1016	0.00600 U	0.00600 U	0.00600 U
Aroclor 1221	0.00600 U	0.00600 U	0.00600 U
Aroclor 1232	0.00600 U	0.00600 U	0.00600 U
Aroclor 1242	0.00600 U	0.00600 U	0.00600 U
Aroclor 1248	0.00600 U	0.00600 U	0.00600 U
Aroclor 1254	0.00600 U	0.00600 U	0.00600 U
Aroclor 1260	0.00600 U	0.00600 U	0.00600 U
Aroclor 1262	0.00600 U	0.00600 U	0.00600 U
Aroclor 1268	0.00600 U	0.00600 U	0.00600 U
Metals (mg/L)			
Total Copper	**0.00160**	**0.00120**	**0.00120**
Total Lead	0.000400 U	0.00100 U	0.000400 U
Dissolved Copper	**0.00240**	-	**0.000800**
Dissolved Lead	0.000400 U	-	0.000400 U
General Chemistry Parameters			
Carbon, Total Organic (mg/L)	**2.25**	-	**2.80**
Carbon, Dissolved Organic (mg/L)	**9.28**	-	**3.14**
Total Suspended Solids (mg/L)	**6.10**	-	**7.10**
Turbidity (NTU)	**3.20**	-	**3.00**

Notes:

µg/L = microgram per liter
mg/L = milligram per liter
MDL = method detection limit
MRL = method reporting limit
NTU = Nephelometric Turbidity Units
- = Not Analyzed
bold = analyte detected above MDL.

J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

Table G-8d
Data Not Used in the RI - 2006 Sediment Removal Design Data Gaps Report
Sediment PCB Congener Analytical Results (ug/kg)

		Forebay Pre-Sediment Removal		
IUPAC Number	**Coeluting Congeners[1]**	Debris Pile 01 060409-SED-3 4/9/2006	Debris Pile 02 060405-SED-1 4/5/2006	Debris Pile 02 DUP 060405-SED-2 4/5/2006
1		0.0240 U	0.0280 U	0.0280 U
2		0.0240 U	0.0280 U	0.0280 U
3		0.0240 U	0.0280 U	0.0280 U
4	4 + 10	0.0240 C U	**0.0470 C**	**0.0330 C**
5	5 + 8	**0.0430 C**	**0.130 C**	**0.0920 C**
6		0.0240 U	0.0280 U	0.0280 U
7	7 + 9	0.0240 C U	0.0280 C U	0.0280 C U
8	5 + 8	C 5	C 5	C 5
9	7 + 9	C 7	C 7	C 7
10	4 + 10	C 4	C 4	C 4
11		0.0240 U	**0.0340**	0.0280 U
12	12 + 13	0.0240 C U	0.0280 C U	0.0280 C U
13	12 + 13	C 12	C 12	C 12
14		0.0240 U	0.0280 U	0.0280 U
15		**0.0260**	**0.0810**	**0.0580**
16	16 + 32	**0.0330 C**	**0.260 C**	**0.130 C**
17		**0.0400**	**0.190**	**0.110**
18		**0.0490**	**0.190**	**0.110**
19		0.0240 U	**0.0470**	**0.0300**
20	20 + 21 + 33	**0.0340 C**	**0.390 C**	**0.260 C**
21	20 + 21 + 33	C 20	C 20	C 20
22		0.0240 U	**0.150**	**0.0880**
23		0.0240 U	0.0280 U	0.0280 U
24	24 + 27	0.0240 C U	**0.0520 C**	**0.0340 C**
25		**0.0310**	**0.0920**	**0.0440**
26		**0.0550**	**0.130**	**0.0760**
27	24 + 27	C 24	C 24	C 24
28		**0.0740**	**0.500**	**0.320**
29		0.0240 U	0.0280 U	0.0280 U
30		0.0240 U	0.0280 U	0.0280 U
31		**0.0650**	**0.900 J**	**0.320 J**
32	16 + 32	C 16	C 16	C 16
33	20 + 21 + 33	C 20	C 20	C 20
34		0.0240 U	0.0280 U	0.0280 U
35		0.0240 U	0.0280 U	0.0280 U
36		0.0240 U	0.0280 U	0.0280 U
37		**0.0340**	**0.210**	**0.120**
38		0.0240 U	**0.0540**	0.0280 U
39		0.0240 U	0.0280 U	0.0280 U
40		**0.0300**	**0.780 J**	**0.190 J**
41	41 + 64 + 68	**0.330 C**	**5.60 C J**	**1.60 C J**
42		**0.0670**	**0.990 J**	**0.360 J**
43	43 + 49	**0.530 C**	**9.80 C J**	**3.00 C J**
44		**0.590**	**12.0 J**	**3.20 J**
45		0.0240 U	**0.150**	**0.0620**
46		0.0240 U	**0.120**	**0.0430**
47	47 + 48 + 75	**0.0780 C**	**1.20 C J**	**0.430 C J**
48	47 + 48 + 75	C 47	C 47	C 47
49	43 + 49	C 43	C 43	C 43
50		0.0240 U	0.0280 U	0.0280 U
51		0.0240 U	**0.120**	**0.0450**
52	52 + 73	**1.60 C**	**27.0 C J**	**8.00 C J**
53		**0.0790**	**0.820 J**	**0.280 J**
54		0.0240 U	0.0280 U	0.0280 U
55		0.0240 U	**0.160**	0.0280 U
56	56 + 60	**0.140 C**	**4.90 C J**	**1.30 C J**
57		0.0240 U	0.0280 U	**0.120**
58		0.0240 U	0.0280 U	0.0280 U
59		**0.0520**	**0.100**	**0.280**
60	56 + 60	C 56	C 56	C 56
61	61 + 74	**0.230 C**	**7.80 C J**	**2.10 C J**
62		0.0240 U	0.0280 U	0.0280 U
63		0.0240 U	**0.330**	**0.0990**
64	41 + 64 + 68	C 41	C 41	C 41
65		0.0240 U	0.0280 U	0.0280 U
66	66 + 80	**0.270 C**	**7.20 C J**	**2.20 C J**
67		0.0240 U	0.0280 U	0.0280 U
68	41 + 64 + 68	C 41	C 41	C 41
69		0.0240 U	0.0280 U	0.0280 U
70		**0.820**	**27.0 J**	**7.40 J**
71		**0.320**	**1.10 J**	**0.320 J**
72		0.0240 U	0.0280 U	0.0280 U
73	52 + 73	C 52	C 52	C 52
74	61 + 74	C 61	C 61	C 61
75	47 + 48 + 75	C 47	C 47	C 47
76		**0.270 C**	**7.20 C J**	**2.20 C J**
77		0.0260 U	0.530 U	0.190 U
78		0.0240 U	**0.0850**	0.0280 U
79		0.0240 U	**0.360**	**0.110**
80	66 + 80	C 66	C 66	C 66
81		0.0130 U	0.560 U	0.140 U
82		**0.140**	**8.10 J**	**1.90 J**
83	83 + 108	**0.0530 C**	**2.70 C J**	**0.680 C J**
84		**0.390**	**15.0 J**	**3.90 J**
85	85 + 120	**0.180 C**	**10.0 C J**	**2.70 C J**
86	86 + 97 + 125 + 111	**0.990 C**	**54.0 C J**	**14.0 C J**
87	87 + 117	**0.990 C**	**54.0 C J**	**14.0 C J**
88	88 + 121	0.0240 C U	0.560 C U	0.0280 C U
89	89 + 90 + 101	**0.900 C**	**44.0 C J**	**12.0 C J**
90	89 + 90 + 101	C 89	C 89	C 89
91		**0.200**	**7.90 J**	**2.20 J**
92		**0.220**	**10.0 J**	**2.80 J**
93	93 + 95	**1.30 C**	**46.0 C J**	**12.0 C J**
94		0.0240 U	0.560 U	**0.0430**
95	93 + 95	C 93	C 93	C 93
96		0.0240 U	0.560 U	**0.0700**
97	86 + 97 + 125 + 111	C 86	C 86	C 86
98	98 + 102	**0.0270 C**	**1.10 C**	**0.280 C**
99		**0.570**	**29.0 J**	**8.20 J**
100		0.0240 U	0.560 U	0.0280 U
101	89 + 90 + 101	C 89	C 89	C 89
102	98 + 102	C 98	C 98	C 98
103		0.0240 U	0.560 U	**0.0640**
104		0.0240 U	0.560 U	0.0280 U
105	105 + 127	**0.380 C**	**24.0 C J**	**6.10 C J**
106	106 + 118	**0.900 C**	**44.0 C J**	**14.0 C J**
107	107 + 109	**0.0650 C**	**4.00 C J**	**1.00 C J**
108	83 + 108	C 83	C 83	C 83
109	107 + 109	C 107	C 107	C 107
110		**1.40**	**71.0 J**	**19.0 J**
111	86 + 97 + 125 + 111	C 86	C 86	C 86
112		0.0240 U	0.560 U	0.0280 U
113		0.0240 U	0.560 U	0.0280 U
114		**0.0170**	**1.20**	**0.310**
115	115 + 116	0.0240 C U	0.560 C U	0.0280 C U

Table G-8d
Data Not Used in the RI - 2006 Sediment Removal Design Data Gaps Report
Sediment PCB Congener Analytical Results (ug/kg)

		Forebay Pre-Sediment Removal		
IUPAC Number	**Coeluting Congeners[1]**	Debris Pile 01 060409-SED-3 4/9/2006	Debris Pile 02 060405-SED-1 4/5/2006	Debris Pile 02 DUP 060405-SED-2 4/5/2006
116	115 + 116	C 115	C 115	C 115
117	87 + 117	C 87	C 87	C 87
118	106 + 118	C 106	C 106	C 106
119		0.0240 U	**0.950 J**	**0.270 J**
120	85 + 120	C 85	C 85	C 85
121	88 + 121	C 88	C 88	C 88
122		0.0240 U	**0.660 J**	**0.150 J**
123		0.0170 U	1.40 U	0.290 U
124		**0.0390**	**2.50 J**	**0.640 J**
125	86 + 97 + 125 + 111	C 86	C 86	C 86
126		0.00240 U	0.0560 U	0.00280 U
127	105 + 127	C 105	C 105	C 105
128		**0.140**	**11.0 J**	**2.80 J**
129		**0.0390**	**3.50 J**	**0.820 J**
130		**0.0470**	**3.70 J**	**0.920 J**
131	131 + 142 + 165	0.0240 C U	**0.850 C J**	**0.200 C J**
132	132 + 168	**0.190 C**	**17.0 C J**	**3.80 C J**
133		0.0240 U	**0.550 J**	**0.140 J**
134		**0.0350**	**2.40 J**	**0.620 J**
135	135 + 144	**0.0840 C**	**6.30 C J**	**1.60 C J**
136		**0.0750**	**4.90 J**	**1.20 J**
137		**0.0300**	**2.80 J**	**0.690 J**
138	138 + 163 + 164	**0.490 C**	**38.0 C J**	**10.0 C J**
139	139 + 149	**0.400 C**	**30.0 C J**	**7.70 C J**
140		0.0240 U	**0.250**	**0.0620**
141		**0.0780**	**7.10 J**	**1.70 J**
142	131 + 142 + 165	C 131	C 131	C 131
143		**0.0400**	**0.230**	**0.0440**
144	135 + 144	C 135	C 135	C 135
145		0.0240 U	0.0280 U	0.0280 U
146		**0.0650**	**5.00 J**	**1.30 J**
147		0.0240 U	**1.20 J**	**0.320 J**
148		0.0240 U	0.0280 U	0.0280 U
149	139 + 149	C 139	C 139	C 139
150		0.0240 U	0.0280 U	0.0280 U
151		**0.0730**	**5.00 J**	**1.30 J**
152		0.0240 U	0.0280 U	0.0280 U
153		**0.310**	**24.0 J**	**6.60 J**
154		0.0240 U	**0.440**	**0.110**
155		0.0240 U	0.0280 U	0.0280 U
156		**0.0560**	**5.10 J**	**1.20 J**
157		**0.0130**	**1.20 J**	**0.280 J**
158	158 + 160	**0.0760 C**	**7.00 C J**	**1.70 C J**
159		0.0240 U	0.0280 U	0.0280 U
160	158 + 160	C 158	C 158	C 158
161		0.0240 U	0.0280 U	0.0280 U
162		0.0240 U	**0.210**	**0.0560**
163	138 + 163 + 164	C 138	C 138	C 138
164	138 + 163 + 164	C 138	C 138	C 138
165	131 + 142 + 165	C 131	C 131	C 131
166		0.0240 U	**0.310**	**0.0810**
167		**0.0960**	**7.90 J**	**2.00 J**
168	132 + 168	C 132	C 132	C 132
169		0.00240 U	0.00280 U	0.00280 U
170		**0.0310 C**	**2.80 C J**	**0.730 C J**
171		0.0240 U	**0.990 J**	**0.250 J**
172	172 + 192	0.0240 C U	**0.400 C**	**0.110 C**
173		0.0240 U	**0.100**	0.0280 U
174		**0.0270**	**2.10 J**	**0.620 J**
175		0.0240 U	**0.120**	**0.0340**
176		0.0240 U	**0.330**	**0.0960**
177		0.0240 U	**1.40 J**	**0.400 J**
178		0.0240 U	**0.340**	**0.120**
179		0.0240 U	**0.710 J**	**0.260 J**
180		**0.0430**	**3.40**	**1.10 J**
181		0.0240 U	0.0280 U	0.0280 U
182	182 + 187	0.0240 C U	**1.00 C J**	**0.400 C J**
183		0.0240 U	**1.30**	**0.420 J**
184		0.0240 U	0.0280 U	0.0280 U
185		0.0240 U	**0.170**	**0.0640**
186		0.0240 U	0.0280 U	0.0280 U
187	182 + 187	C 182	C 182	C 182
188		0.0240 U	0.0280 U	0.0280 U
189		0.00240 U	**0.140**	**0.0350**
190		**0.0310 C**	**2.80 C J**	**0.730 C J**
191		0.0240 U	**0.130**	**0.0340**
192	172 + 192	C 172	C 172	C 172
193		0.0240 U	**0.170**	**0.0520**
194		0.0240 U	**0.290 J**	**0.160 J**
195		0.0240 U	**0.0830**	**0.0420**
196	196 + 203	0.0240 C U	**0.400 C**	**0.300 C**
197		0.0240 U	0.0280 U	0.0280 U
198		0.0240 U	0.0280 U	0.0280 U
199		0.0240 U	**0.290**	**0.260**
200		0.0240 U	**0.0400**	**0.0340**
201		0.0240 U	**0.0360**	**0.0320**
202		0.0240 U	**0.0460**	**0.0480**
203	196 + 203	C 196	C 196	C 196
204		0.0240 U	0.0280 U	0.0280 U
205		0.0240 U	0.0280 U	0.0280 U
206		0.0240 U	**0.100**	**0.130**
207		0.0240 U	0.0280 U	0.0280 U
208		0.0240 U	0.0280 U	0.0280 U
209		0.0240 U	**0.0290**	0.0280 U

Notes:
µg/kg = microgram per kilogram
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
C = concentration represents coeluting congeners.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

[1] = When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.

Table G-8e
Data Not Used in the RI - 2006 Sediment Removal Design Data Gaps Report
High-Volume Sampling Surface Water PCB Congener Analytical Results (µg/L)
(Page 1 of 2)

		Forebay Pre-Sediment Removal			
IUPAC Number	**Coeluting Congeners[1]**	Debris Pile 01 060403-FIL-1 4/3/2006	Debris Pile 01 060403-XAD-1 4/3/2006	Goose Island 060404-FIL-2 4/4/2006	Goose Island 060404-XAD-2 4/4/2006
		Particulate	Dissolved	Particulate	Dissolved
1		0.0000000350 U	**0.000000210**	0.0000000430 U	**0.000000176**
2		0.0000000610 U	**0.000000182**	**0.0000000910**	**0.000000203**
3		0.0000000720 U	**0.000000210**	**0.000000128**	**0.000000247**
4		0.0000000520 U	0.000000421 U	0.0000000543 U	0.000000383 U
5		0.0000000341 U	0.0000000596 U	0.0000000347 U	0.0000000735 U
6		0.0000000314 U	0.000000101 U	0.0000000319 U	0.0000000890 U
7		0.0000000322 U	0.0000000563 U	0.0000000328 U	0.0000000694 U
8		0.0000000670 U	**0.000000423**	0.0000000670 U	**0.000000387**
9		0.0000000311 U	0.0000000542 U	0.0000000316 U	0.0000000668 U
10		0.0000000321 U	0.0000000560 U	0.0000000326 U	0.0000000691 U
11		**0.00000342**	**0.0000460**	**0.00000419**	**0.0000482**
12	12 + 13	0.0000000341 C U	0.0000000595 C U	0.0000000346 C U	0.0000000734 C U
13	12 + 13	C12	C12	C12	C12
14		0.0000000325 U	0.0000000568 U	0.0000000331 U	0.0000000700 U
15		0.000000108 U	**0.000000317**	0.000000116 U	0.000000247 U
16		**0.0000000510**	**0.000000298**	**0.0000000490**	**0.000000245**
17		0.0000000600 U	**0.000000261**	0.0000000480 U	**0.000000223**
18	18 + 30	0.000000111 U	**0.000000679 C**	0.000000107 U	**0.000000573 C**
19		0.0000000190 U	**0.000000125**	0.0000000110 U	**0.000000105**
20	20 + 28	**0.000000293 C**	**0.000000740 C**	**0.000000277 C**	**0.000000696 C**
21	21 + 33	**0.000000101 C**	**0.000000268 C**	0.0000000940 U	**0.000000251 C**
22		**0.0000000800**	**0.000000282**	**0.0000000820**	**0.000000259**
23		0.00000000300 U	0.00000000540 U	0.00000000340 U	0.00000000700 U
24		0.00000000300 U	0.0000000110 U	0.00000000230 U	0.0000000110 U
25		**0.0000000240**	**0.0000000680**	0.0000000170 U	**0.0000000460**
26	26 + 29	**0.0000000480 C**	**0.000000139 C**	**0.0000000480 C**	**0.000000120 C**
27		**0.0000000140**	**0.0000000650**	0.00000000900 U	**0.0000000510**
28	20 + 28	C20	C20	C20	C20
29	26 + 29	C26	C26	C26	C26
30	18 + 30	C18	C18	C18	C18
31		**0.000000209**	**0.000000585**	**0.000000190**	**0.000000582**
32		**0.0000000350**	**0.000000159**	**0.0000000250**	0.000000100 EMPC
33	21 + 33	C21	C21	C21	C21
34		0.00000000290 U	0.00000000530 U	0.00000000330 U	0.00000000680 U
35		0.0000000230 EMPC	**0.0000000700**	0.0000000230 EMPC	**0.0000000630**
36		0.00000000800 U	0.0000000220 U	0.00000000330 U	0.0000000180 U
37		**0.0000000980**	**0.000000136**	**0.000000102**	**0.000000145**
38		0.00000000290 U	0.00000000530 U	0.00000000330 U	0.00000000680 U
39		0.00000000290 U	0.00000000510 U	0.00000000320 U	0.00000000670 U
40	40 + 41 + 71	**0.000000158 C**	**0.000000297 C**	**0.000000109 C**	**0.000000254 C**
41	40 + 41 + 71	C40	C40	C40	C40
42		**0.0000000870**	**0.000000180**	**0.0000000660**	**0.000000152**
43		0.0000000120 U	**0.0000000240**	0.00000000700 U	0.0000000200 EMPC
44	44 + 47 + 65	**0.000000483 C**	**0.00000109 C**	**0.000000330 C**	**0.000000811 C**
45	45 + 51	**0.0000000510 C**	**0.000000129 C**	**0.0000000380 C**	**0.000000111 C**
46		0.0000000200 U	**0.0000000510**	0.0000000130 U	0.0000000400 EMPC
47	44 + 47 + 65	C44	C44	C44	C44
48		**0.0000000550**	**0.000000111**	**0.0000000520**	**0.000000102**
49	49 + 69	**0.000000309 C**	**0.000000518 C**	**0.000000188 C**	**0.000000348 C**
50	50 + 53	**0.0000000590 C**	**0.000000156 C**	**0.0000000370 C**	**0.0000000970 C**
51	45 + 51	C45	C45	C45	C45
52		**0.000000824**	**0.00000158**	**0.000000486**	**0.00000104**
53	50 + 53	C50	C50	C50	C50
54		0.00000000300 U	0.00000000700 U	0.00000000210 U	0.00000000400 U
55		0.00000000790 U	0.00000000640 U	0.00000000920 U	0.0000000113 U
56		**0.000000172**	**0.000000212**	**0.000000131**	**0.000000185**
57		0.00000000720 U	0.00000000580 U	0.00000000840 U	0.0000000103 U
58		0.00000000740 U	0.00000000600 U	0.00000000870 U	0.0000000107 U
59	59 + 62 + 75	**0.0000000310 C**	0.0000000570 C EMPC	**0.0000000270 C**	**0.0000000630 C**
60		**0.0000000900**	**0.000000106**	**0.0000000840**	**0.000000104**
61	61 + 70 + 74 + 76	**0.00000103 C**	**0.00000121 C**	**0.000000652 C**	**0.000000959 C**
62	59 + 62 + 75	C59	C59	C59	C59
63		0.0000000210 U	0.0000000270 EMPC	0.0000000180 U	**0.0000000270**
64		**0.000000169**	**0.000000322**	**0.000000133**	**0.000000274**
65	44 + 47 + 65	C44	C44	C44	C44
66		**0.000000458**	**0.000000510**	**0.000000359**	**0.000000447**
67		0.0000000140 U	0.0000000170 U	0.0000000140 U	0.0000000180 U
68		0.0000000100 U	**0.0000000300**	0.0000000100 U	**0.0000000240**
69	49 + 69	C49	C49	C49	C49
70	61 + 70 + 74 + 76	C61	C61	C61	C61
71	40 + 41 + 71	C40	C40	C40	C40
72		0.00000000700 U	0.0000000100 U	0.00000000790 U	0.00000000980 U
73		0.00000000150 U	0.00000000240 U	0.00000000190 U	0.00000000300 U
74	61 + 70 + 74 + 76	C61	C61	C61	C61
75	59 + 62 + 75	C59	C59	C59	C59
76	61 + 70 + 74 + 76	C61	C61	C61	C61
77		**0.0000000480**	**0.0000000400**	**0.0000000550**	**0.0000000400**
78		0.00000000760 U	0.00000000620 U	0.00000000890 U	0.0000000110 U
79		0.0000000140 U	0.0000000120 U	0.0000000100 U	0.0000000130 U
80		0.00000000680 U	0.00000000550 U	0.00000000790 U	0.00000000980 U
81		0.00000000710 U	0.00000000560 U	0.00000000810 U	0.00000000940 U
82		**0.000000168**	**0.0000000920**	**0.0000000820**	**0.0000000670**
83	83 + 99	**0.000000978 C**	**0.000000644 C**	**0.000000560 C**	**0.000000444 C**
84		**0.000000343**	**0.000000327**	**0.000000144**	**0.000000194**
85	85 + 116 + 117	**0.000000306 C**	**0.000000173 C**	**0.000000177 C**	**0.000000124 C**
86	86 + 87 + 97 + 108 + 119 + 125	**0.00000109 C**	**0.000000787 C**	**0.000000593 C**	**0.000000531 C**
87	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86
88	88 + 91	**0.000000183 C**	**0.000000155 C**	**0.000000102 C**	**0.0000000980 C**
89		0.00000000510 U	0.0000000167 U	0.00000000280 U	0.00000000600 U
90	90 + 101 + 113	**0.00000158 C**	**0.00000118 C**	**0.000000941 C**	**0.000000800 C**
91	88 + 91	C88	C88	C88	C88
92		**0.000000301**	**0.000000229**	**0.000000183**	**0.000000162**
93	93 + 95 + 98 + 100 + 102	**0.00000111 C**	**0.00000117 C**	**0.000000609 C**	**0.000000764 C**
94		0.00000000520 U	0.0000000170 U	0.00000000500 U	0.00000000610 U
95	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93
96		0.00000000800 U	0.00000000600 U	0.00000000400 U	0.00000000500 U
97	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86
98	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93
99	83 + 99	C83	C83	C83	C83
100	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93
101	90 + 101 + 113	C90	C90	C90	C90
102	93 + 95 + 98 + 100 + 102	C93	C93	C93	C93
103		0.0000000110 U	0.0000000142 U	0.00000000600 U	0.00000000510 U
104		0.00000000200 U	0.00000000220 U	0.00000000200 U	0.00000000380 U
105		**0.000000651**	**0.000000276**	**0.000000358**	**0.000000187**
106		0.00000000990 U	0.00000000940 U	0.00000000650 U	0.00000000510 U
107	107 + 124	**0.0000000680 C**	**0.0000000330 C**	**0.0000000410 C**	**0.0000000260 C**
108	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86
109		**0.000000129**	0.0000000640 EMPC	**0.0000000800**	0.0000000530 EMPC
110	110 + 115	**0.00000176 C**	**0.00000129 C**	**0.00000102 C**	**0.000000893 C**
111		0.00000000360 U	0.0000000117 U	0.00000000200 U	0.00000000420 U
112		0.00000000350 U	0.0000000113 U	0.00000000190 U	0.00000000410 U
113	90 + 101 + 113	C90	C90	C90	C90
114		**0.0000000380**	**0.0000000230**	**0.0000000190**	0.0000000130 U
115	110 + 115	C110	C110	C110	C110
116	85 + 116 + 117	C85	C85	C85	C85

Table G-8e
Data Not Used in the RI - 2006 Sediment Removal Design Data Gaps Report
High-Volume Sampling Surface Water PCB Congener Analytical Results (µg/L)

		Forebay Pre-Sediment Removal			
IUPAC Number	**Coeluting Congeners[1]**	Debris Pile 01 060403-FIL-1 4/3/2006	Debris Pile 01 060403-XAD-1 4/3/2006	Goose Island 060404-FIL-2 4/4/2006	Goose Island 060404-XAD-2 4/4/2006
		Particulate	Dissolved	Particulate	Dissolved
117	85 + 116 + 117	C85	C85	C85	C85
118		**0.00000167**	**0.000000847**	**0.000000933**	**0.000000569**
119	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86
120		0.00000000340 U	0.0000000110 U	0.00000000600 U	0.00000000500 U
121		0.00000000370 U	0.0000000120 U	0.00000000200 U	0.00000000430 U
122		0.0000000210 U	0.0000000102 U	0.0000000120 U	0.00000000700 U
123		**0.0000000240**	0.0000000160 U	0.0000000210 EMPC	0.0000000100 U
124	107 + 124	C107	C107	C107	C107
125	86 + 87 + 97 + 108 + 119 + 125	C86	C86	C86	C86
126		0.0000000101 U	0.00000000940 U	0.00000000700 U	0.00000000520 U
127		0.0000000102 U	0.00000000960 U	0.00000000660 U	0.00000000530 U
128	128 + 166	**0.000000347 C**	**0.0000000790 C**	**0.000000194 C**	**0.0000000580 C**
129	129 + 138 + 160 + 163	**0.00000202 C**	**0.000000653 C**	**0.00000139 C**	**0.000000531 C**
130		**0.000000123**	**0.0000000390**	**0.0000000880**	0.0000000320 EMPC
131		0.0000000210 EMPC	0.00000000600 U	0.0000000130 U	0.00000000600 U
132		**0.000000517**	**0.000000183**	**0.000000317**	**0.000000145**
133		**0.0000000260**	0.0000000120 U	0.0000000150 EMPC	0.0000000100 U
134	134 + 143	**0.0000000830 C**	0.0000000340 C EMPC	**0.0000000460 C**	0.0000000260 C EMPC
135	135 + 151 + 154	**0.000000459 C**	**0.000000198 C**	**0.000000359 C**	**0.000000192 C**
136		**0.000000153**	**0.0000000700**	**0.000000102**	**0.0000000570**
137		0.000000111 EMPC	**0.0000000300**	0.0000000550 EMPC	0.0000000180 U
138	129 + 138 + 160 + 163	C129	C129	C129	C129
139	139 + 140	**0.0000000370 C**	0.00000000800 U	0.0000000230 C EMPC	0.00000000900 U
140	139 + 140	C139	C139	C139	C139
141		**0.000000216**	**0.0000000670**	**0.000000158**	**0.0000000560**
142		0.00000000640 U	0.00000000530 U	0.00000000540 U	0.00000000490 U
143	134 + 143	C134	C134	C134	C134
144		**0.0000000540**	**0.0000000260**	**0.0000000440**	0.0000000160 U
145		0.00000000180 U	0.00000000280 U	0.00000000160 U	0.00000000300 U
146		**0.000000298**	**0.000000106**	**0.000000252**	**0.000000100**
147	147 + 149	**0.00000119 C**	**0.000000512 C**	**0.000000912 C**	**0.000000445 C**
148		0.00000000220 U	0.00000000350 U	0.00000000190 U	0.00000000360 U
149	147 + 149	C147	C147	C147	C147
150		0.00000000300 U	0.00000000270 U	0.00000000200 U	0.00000000280 U
151	135 + 151 + 154	C135	C135	C135	C135
152		0.00000000200 U	0.00000000260 U	0.00000000140 U	0.00000000270 U
153	153 + 168	**0.00000179 C**	**0.000000656 C**	**0.00000146 C**	**0.000000573 C**
154	135 + 151 + 154	C135	C135	C135	C135
155		0.00000000130 U	0.00000000230 U	0.00000000120 U	0.00000000250 U
156	156 + 157	**0.000000232 C**	**0.0000000510 C**	**0.000000133 C**	**0.0000000390 C**
157	156 + 157	C156	C156	C156	C156
158		**0.000000183**	**0.0000000550**	**0.000000108**	**0.0000000410**
159		0.00000000700 U	0.00000000360 U	0.00000000900 U	0.00000000340 U
160	129 + 138 + 160 + 163	C129	C129	C129	C129
161		0.00000000440 U	0.00000000360 U	0.00000000370 U	0.00000000330 U
162		0.00000000450 U	0.00000000370 U	0.00000000400 U	0.00000000340 U
163	129 + 138 + 160 + 163	C129	C129	C129	C129
164		**0.000000105**	**0.0000000340**	**0.0000000700**	**0.0000000300**
165		0.00000000510 U	0.00000000420 U	0.00000000430 U	0.00000000390 U
166	128 + 166	C128	C128	C128	C128
167		**0.0000000930**	**0.0000000260**	**0.0000000660**	**0.0000000210**
168	153 + 168	C153	C153	C153	C153
169		0.00000000500 U	0.00000000360 U	0.00000000500 U	0.00000000330 U
170		**0.000000251**	**0.0000000350**	**0.000000208**	**0.0000000380**
171	171 + 173	**0.0000000850 C**	**0.0000000160 C**	**0.0000000770 C**	0.0000000170 C EMPC
172		**0.0000000490**	0.00000000900 U	**0.0000000420**	0.0000000100 U
173	171 + 173	C171	C171	C171	C171
174		**0.000000233**	**0.0000000610**	**0.000000200**	**0.0000000580**
175		0.0000000130 U	0.00000000400 U	0.0000000110 U	0.00000000310 U
176		**0.0000000320**	0.0000000100 U	**0.0000000350**	0.00000000600 U
177		**0.000000159**	**0.0000000350**	**0.000000176**	**0.0000000350**
178		**0.0000000650**	**0.0000000170**	**0.0000000690**	0.0000000240 EMPC
179		**0.000000117**	0.0000000320 EMPC	**0.000000130**	**0.0000000350**
180	180 + 193	**0.000000552 C**	**0.000000108 C**	**0.000000519 C**	**0.000000124 C**
181		0.00000000300 U	0.00000000230 U	0.00000000180 U	0.00000000320 U
182		0.00000000200 U	0.00000000230 U	0.00000000500 U	0.00000000310 U
183	183 + 185	**0.000000203 C**	**0.0000000460 C**	**0.000000186 C**	**0.0000000460 C**
184		0.00000000150 U	0.00000000180 U	0.00000000300 U	0.00000000240 U
185	183 + 185	C183	C183	C183	C183
186		0.00000000160 U	0.00000000190 U	0.00000000150 U	0.00000000260 U
187		**0.000000413**	**0.000000116**	**0.000000431**	**0.000000120**
188		0.00000000200 U	0.00000000160 U	0.00000000130 U	0.00000000220 U
189		0.0000000100 U	0.00000000300 U	0.0000000100 U	0.00000000330 U
190		**0.0000000650**	0.0000000110 U	0.0000000610 EMPC	**0.0000000130**
191		**0.0000000120**	0.00000000180 U	0.00000000900 U	0.00000000250 U
192		0.00000000180 U	0.00000000200 U	0.00000000200 U	0.00000000270 U
193	180 + 193	C180	C180	C180	C180
194		**0.000000109**	0.0000000170 U	**0.000000108**	0.0000000190 U
195		**0.0000000520**	0.00000000900 U	**0.0000000490**	0.0000000110 U
196		**0.0000000730**	0.0000000200 U	**0.0000000680**	0.0000000180 U
197	197 + 200	**0.0000000220 C**	0.00000000600 U	**0.0000000260 C**	0.00000000700 U
198	198 + 199	**0.000000199 C**	0.0000000580 U	**0.000000178 C**	0.0000000540 U
199	198 + 199	C198	C198	C198	C198
200	197 + 200	C197	C197	C197	C197
201		**0.0000000270**	0.00000000700 U	**0.0000000250**	0.00000000800 U
202		**0.0000000490**	0.0000000120 U	**0.0000000420**	0.0000000170 EMPC
203		**0.000000146**	0.0000000360 U	**0.000000132**	0.0000000430 EMPC
204		0.00000000200 U	0.00000000240 U	0.00000000210 U	0.00000000310 U
205		0.00000000700 U	0.00000000200 U	0.0000000100 U	0.00000000210 U
206		**0.0000000940**	0.0000000200 U	**0.0000000930**	0.0000000210 U
207		**0.0000000200**	0.00000000600 U	0.0000000140 U	0.00000000900 U
208		**0.0000000530**	0.0000000180 U	**0.0000000390**	0.0000000170 U
209		**0.0000000760**	0.00000000900 U	**0.000000113**	0.0000000140 U

Notes:
µg/L = microgram per liter
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
C = concentration represents coeluting congeners.
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.

[1] = When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.

Table G-9a
Data Not Used in the RI - 2007 Sediment Removal Monitoring
PCB Aroclor Results in Dredge Effluent Samples

Time Period of Removal	Week 1		Week 2		Week 3		Week 4		Week 4 (duplicate)		Week 5	
Sample Date	10/4/2007	10/4/2007	10/11/2007	10/11/2007	10/18/2007	10/18/2007	10/25/2007	10/25/2007	10/25/2007	10/25/2007	10/29/2007	10/29/2007
Sample ID	071004-DE	071004-DE	071011-DE	071011-DE	071018-DE	071018-DE	071025-DE-1	071025-DE-1	071025-DE-2	071025-DE-2	071029-DE	071029-DE
Preparation Fraction	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
PCB Aroclors (µg/L)												
Aroclor 1016	0.00100 U	0.00250 U	0.00120 U	0.00120 U	0.00100 U	0.00100 U	0.00100 U	0.00110 U	0.00100 U	0.00100 U	0.00110 U	0.00100 U
Aroclor 1221	0.00100 U	0.00260 U	0.00120 U	0.00120 U	0.00100 U	0.00100 U	0.0100 U	0.00830 U	0.00830 U	0.00630 U	0.00110 U	0.00100 U
Aroclor 1232	0.00100 U	0.00930 U	0.00120 U	0.00120 U	0.00100 U	0.00100 U	0.00100 U	0.00530 U	0.00100 U	0.00100 U	0.00110 U	0.00100 U
Aroclor 1242	0.00100 U	0.00300 U	0.00120 U	0.00120 U	0.00100 U	0.00100 U	0.00120 U	0.00110 U	0.00100 U	0.00100 U	0.00110 U	0.00100 U
Aroclor 1248	0.00100 U	0.00100 U	0.00120 U	0.00120 U	0.00100 U	0.00100 U	0.00100 U	0.00110 U	0.00100 U	0.00100 U	0.00110 U	0.00100 U
Aroclor 1254	0.00100 U	0.00100 U	0.00120 U	0.00120 U	0.00100 U	0.00100 U	0.00100 U	0.00110 U	0.00120 U	0.00100 U	0.00110 U	0.00100 U
Aroclor 1260	0.00100 U	0.00100 U	0.00120 U	0.00120 U	0.00100 U	0.00100 U	0.00100 U	0.00110 U	0.00100 U	0.00100 U	0.00110 U	0.00100 U
Aroclor 1268	0.00100 U	0.00100 U	0.00120 U	0.00120 U	0.00100 U	0.00100 U	0.00100 U	0.00110 U	0.00100 U	0.00100 U	0.00110 U	0.00100 U
General Chemistry Parameters (mg/L)												
Carbon, Organic	-	-	-	-	**1.50**	**1.30**	**1.10**	**1.00**	**1.00**	**1.00**	**0.900**	**0.900**
Total Suspended Solids	-	-	-	-	5.00 U	-	5.00 U	-	5.00 U	-	5.00 U	-

Notes:

µg/L = microgram per liter
mg/L = milligram per liter
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historical data, the MDLs were not available. In these cases, MRLs were used.
Some dredge effluent samples were also analyzed by Test America Laboratories.
Only results from Cascade Analytical Services are presented here.

Table G-9b
Data Not Used in the RI - 2007 Sediment Removal Monitoring
Analytical Results for Surface Water at Semi-Permeable Membrane Device (SPMD) Locations

Time Period of Removal	Week 1			Week 2			Week 3			Week 4			Week 5		
Sample Date	8/20/2007			9/10/2007			10/1/2007			10/22/2007			11/2/2007		
Site ID	SPMD1	SPMD2	SPMD3	SPMD1	SPMD2	SPMD3	SPMD1	SPMD2	SPMD3	SPMD1	SPMD2	SPMD3	SPMD1	SPMD2	SPMD3
Sample ID	070820-SW-1	070820-SW-2	070820-SW-3	070910-SW-1	070910-SW-2	070910-SW-3	071001-SW-1	071001-SW-2	071001-SW-3	071022-SW-1	071022-SW-2	071022-SW-3	071102-SW-1	071102-SW-2	071102-SW-3
General Chemistry Parameters (mg/L)															
Carbon, Total Organic	**1.48**	**1.55**	**1.50**	**1.80**	**1.90**	**1.40**	**1.30**	**1.30**	**1.30**	**2.20**	**1.90**	**2.00**	**1.40**	**1.40**	**1.30**
Total Suspended Solids	10.0 U	10.0 U	**5.00 J**	**2.40**	**2.60**	**3.00**	4.00 U	**2.40**	**2.00**	**2.40**	**3.40**	**3.20**	**3.30**	**4.30**	**3.30**

Notes:

µg/L = microgram per liter
mg/L = milligram per liter
MDL = method detection limit
MRL = method reporting limit
- = Not Analyzed
bold = analyte detected above MDL.

J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported sample quantification limit is an estimate.
For some (older) historical data, the MDLs were not available. In these cases, MRLs were used.

Table G-9c
Data Not Used in the RI - 2007 Sediment Removal Monitoring
Semi-Permeable Membrane Device (SPMD) PCB Congener Analysis Results
9/10/07 Retrievals

IUPAC #	COELUTING CONGENERS[1]	070910-SPMD1A L10715-2		070910-SPMD1B L10715-3		070910-SPMD2A L10715-4		070910-SPMD2B L10715-5		070910-SPMD3A L10715-6		070910-SPMD3B L10715-7	
1		0.149	U	0.218	U	0.248	U	0.255	U	0.330	U	0.240	U
2		0.070	U	0.135	U	0.141	U	0.129	U	0.144	U	0.125	U
3		0.109	U	0.151	U	0.166	U	0.173	U	0.207	U	0.160	U
4		0.497	U	0.669	U	0.767	U	0.793	U	0.991	U	0.786	U
5		0.055	U	0.085	UJ	0.071	UJ	0.067	U	0.076	U	0.052	U
6		0.233	U	0.357	UJ	0.299	UJ	0.319	U	0.395	U	0.281	U
7		0.057	U	0.086	UJ	0.075	UJ	0.075	U	0.090	U	0.067	U
8		1.066	U	1.571	UJ	1.423	UJ	1.585	U	1.916	U	1.335	U
9		0.085	U	0.132	UJ	0.110	UJ	0.120	U	0.134	U	0.107	U
10		0.016	U	0.026	UJ	0.027	UJ	0.026	U	0.030	U	0.028	U
11		18.180		34.340	J	46.699	J	37.791		44.500		35.270	
12	12 + 13	0.246	C U	0.520	C UJ	0.344	C UJ	0.276	C U	0.267	C U	0.244	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.003	EMPC	0.005	UJ	0.003	UJ	0.002	U	0.002	U	0.002	U
15		0.644	U	0.930	U	0.764	U	0.787	U	0.783	U	0.628	U
16		0.688	U	0.971	U	0.742	UJ	0.913	U	1.017	U	0.793	U
17		0.656	U	0.967	U	0.762	UJ	0.929	U	0.981	U	0.767	U
18	18 + 30	1.171	C U	1.775	C U	1.310	C UJ	1.703	C U	1.844	C U	1.412	C U
19		0.172	U	0.225	U	0.250	U	0.243	U	0.286	U	0.227	U
20	20 + 28	2.237	C U	3.158	C U	2.466	C UJ	2.842	C U	2.962	C U	2.127	C U
21	21 + 33	1.235	C U	1.773	C U	1.294	C UJ	1.480	C U	1.579	C U	1.127	C U
22		0.873	U	1.234	U	0.882	UJ	0.976	U	1.032	U	0.745	U
23		0.002	U	0.005	U	0.004	UJ	0.005	U	0.005	U	0.004	U
24		0.026	U	0.040	U	0.027	UJ	0.034	U	0.041	U	0.027	U
25		0.157	U	0.229	U	0.181	UJ	0.211	U	0.216	U	0.154	U
26	26 + 29	0.381	C U	0.535	C U	0.419	C UJ	0.499	C U	0.526	C U	0.367	C U
27		0.105	U	0.160	U	0.123	UJ	0.146	U	0.146	U	0.114	U
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		1.796	U	2.535	U	1.964	UJ	2.345	U	2.442	U	1.730	U
32		0.408	U	0.587	U	0.445	UJ	0.549	U	0.592	U	0.427	U
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.008	U	0.011	U	0.008	UJ	0.011	U	0.011	U	0.008	U
35		0.063	U	0.086	U	0.090	UJ	0.082	U	0.092	U	0.068	U
36		0.010		0.016		0.021	J	0.021		0.025		0.019	
37		0.412	U	0.546	U	0.456	U	0.500	U	0.514	U	0.381	U
38		0.003	U	0.004	U	0.005	EMPC	0.005	U	0.006	EMPC	0.003	U
39		0.012	U	0.015	U	0.012	UJ	0.013	U	0.014	U	0.010	U
40	40 + 41 + 71	0.753	C U	0.928	C U	0.780	C U	0.911	C U	0.887	C U	0.655	C U
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		0.321	U	0.414	U	0.384	U	0.451	U	0.442	U	0.324	U
43		0.083	U	0.113	U	0.073	U	0.093	U	0.092	U	0.067	U
44	44 + 47 + 65	1.281	C U	1.631	C U	1.518	C U	1.844	C U	1.680	C U	1.221	C U
45	45 + 51	0.282	C U	0.361	C U	0.292	C U	0.380	C U	0.395	C U	0.287	C U
46		0.094	U	0.121	U	0.101	U	0.126	U	0.129	U	0.094	U
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		0.344	U	0.447	U	0.346	U	0.438	U	0.441	U	0.317	U
49	49 + 69	0.772	C U	0.995	C U	0.971	C U	1.191	C U	1.089	C U	0.781	C U
50	50 + 53	0.203	C U	0.253	C U	0.245	C U	0.297	C U	0.287	C U	0.210	C U
51	45 + 51		C45		C45		C45		C45		C45		C45
52		1.433	U	1.884	U	2.009	U	2.543	U	2.093	U	1.507	U
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.005	U	0.007	U	0.010	U	0.008	U	0.008	U	0.007	U
55		0.036	U	0.069	U	0.029	U	0.035	U	0.034	U	0.025	U
56		0.385	U	0.479	U	0.434	U	0.445	U	0.427	U	0.323	U
57		0.006	U	0.014	U	0.007	U	0.008	U	0.010	U	0.006	U
58		0.005	U	0.014	U	0.005	U	0.004		0.004		0.004	U
59	59 + 62 + 75	0.151	C U	0.205	C U	0.153	C U	0.186	C U	0.187	C U	0.138	C U
60		0.244	U	0.325	U	0.323	U	0.322	U	0.326	U	0.246	U
61	61 + 70 + 74 + 76	1.664	C U	2.228	C U	2.435	C U	2.628	C U	2.332	C U	1.716	C U
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		0.047	U	0.063	U	0.064	U	0.066	U	0.065	U	0.048	U
64		0.545	U	0.707	U	0.691	U	0.819	U	0.783	U	0.576	U
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		0.901	U	1.196	U	1.206	U	1.251	U	1.199	U	0.889	U
67		0.039	U	0.049	U	0.046	U	0.049	U	0.050	U	0.036	U
68		0.011	U	0.020	U	0.017	U	0.019	U	0.018	U	0.012	U
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		0.007	U	0.014	U	0.013		0.014		0.014		0.010	
73		0.000	U	0.001	U	0.000	U	0.000	U	0.000	U	0.000	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		0.052	U	0.067	U	0.081	U	0.077	U	0.083	U	0.065	U
78		0.005	U	0.015	U	0.008	U	0.004	U	0.006	U	0.004	U
79		0.009	U	0.013	U	0.019		0.020		0.013		0.012	
80		0.005	U	0.014	U	0.005	U	0.002	U	0.004	U	0.004	U
81		0.005	U	0.014	U	0.005	U	0.005	U	0.005	U	0.004	U
82		0.077	U	0.120	U	0.146	U	0.146	U	0.096	U	0.076	U
83	83 + 99	0.503	C U	0.720	C U	1.045	C	1.159	C	0.798	C U	0.615	C U
84		0.230	U	0.304	U	0.399	U	0.463	U	0.318	U	0.245	U
85	85 + 116 + 117	0.166	C U	0.238	C U	0.355	C	0.385	C	0.283	C U	0.221	C U
86	86 + 87 + 97 + 108 + 119 + 125	0.590	C U	0.821	C U	1.152	C U	1.250	C U	0.841	C U	0.656	C U
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	0.135	C U	0.173	C U	0.237	C U	0.276	C U	0.198	C U	0.152	C U
89		0.012	U	0.015	U	0.017	U	0.019	U	0.016	U	0.012	U

Table G-9c
Data Not Used in the RI - 2007 Sediment Removal Monitoring
Semi-Permeable Membrane Device (SPMD) PCB Congener Analysis Results
9/10/07 Retrievals

IUPAC #	COELUTING CONGENERS[1]	070910-SPMD1A L10715-2		070910-SPMD1B L10715-3		070910-SPMD2A L10715-4		070910-SPMD2B L10715-5		070910-SPMD3A L10715-6		070910-SPMD3B L10715-7	
90	90 + 101 + 113	1.056	C U	1.454	C U	1.904	C U	2.177	C U	1.592	C U	1.205	C U
91	88 + 91		C88		C88		C88		C88		C88		C88
92		0.192	U	0.263	U	0.355	U	0.405	U	0.309	U	0.237	U
93	93 + 95 + 98 + 100 + 102	0.922	C U	1.228	C U	1.495	C U	1.838	C U	1.320	C U	1.002	C U
94		0.006	U	0.006	U	0.008	U	0.011	U	0.008	U	0.007	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.009	U	0.011	U	0.011	U	0.015	U	0.012	U	0.009	U
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		0.007	U	0.009	U	0.014	U	0.015	U	0.014	U	0.010	U
104		0.002	U	0.001	U	0.001	U	0.002	U	0.002	U	0.002	U
105		0.274	U	0.416	U	0.688		0.705		0.484		0.375	
106		0.004	U	0.007	U	0.004	U	0.003	U	0.003	U	0.004	U
107	107 + 124	0.027	C U	0.042	C U	0.066	C	0.070	C	0.052	C	0.039	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		0.058		0.087		0.124		0.121		0.098		0.079	
110	110 + 115	0.904	C U	1.329	C U	2.079	C	2.102	C	1.542	C U	1.205	C U
111		0.002	U	0.004	U	0.001	EMPC	0.001	U	0.001	EMPC	0.001	U
112		0.002	U	0.003	U	0.001	U	0.001	U	0.001	U	0.001	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		0.017	U	0.028	U	0.039		0.049		0.029	U	0.021	U
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		0.675	U	1.031	U	1.684		1.788		1.144		0.862	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		0.002	EMPC	0.003	U	0.005	EMPC	0.005		0.006		0.005	
121		0.002	U	0.003	U	0.001		0.002		0.001	U	0.001	U
122		0.007	U	0.011	U	0.015		0.020		0.010		0.008	U
123		0.013	U	0.021	U	0.031	U	0.040	U	0.030	U	0.019	U
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		0.005	U	0.009	U	0.006		0.005	U	0.007		0.005	
127		0.005	U	0.009	U	0.005	U	0.004	U	0.004	EMPC	0.004	U
128	128 + 166	0.119	C	0.178	C	0.273	C	0.263	C	0.206	C	0.162	C
129	129 + 138 + 160 + 163	0.917	C U	1.313	C U	1.891	C	1.953	C	1.527	C	1.172	C U
130		0.061		0.079	U	0.118		0.120		0.099		0.076	
131		0.010	U	0.013	U	0.020		0.020		0.016		0.011	
132		0.286	U	0.383	U	0.475	U	0.518	U	0.391	U	0.304	U
133		0.017	U	0.026	U	0.032		0.034		0.032		0.024	
134	134 + 143	0.064	C U	0.086	C U	0.096	C U	0.104	C U	0.079	C U	0.062	C U
135	135 + 151 + 154	0.518	C U	0.694	C U	0.741	C U	0.858	C U	0.746	C U	0.571	C U
136		0.157	U	0.193	U	0.204	U	0.256	U	0.196	U	0.155	U
137		0.026	U	0.030	U	0.058		0.071		0.034	U	0.029	U
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	0.014	C	0.017	C EMPC	0.028	C	0.031	C	0.021	C	0.017	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		0.175	U	0.243	U	0.245	U	0.287	U	0.219	U	0.161	U
142		0.003	U	0.011	U	0.004	U	0.003	U	0.003	U	0.003	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		0.069	U	0.087	U	0.093	U	0.105	U	0.088	U	0.065	U
145		0.000	U	0.001	EMPC	0.000	U	0.001	EMPC	0.001		0.000	
146		0.174	U	0.241	U	0.283	U	0.304	U	0.261	U	0.204	U
147	147 + 149	0.985	C U	1.302	C U	1.531	C U	1.704	C U	1.431	C U	1.073	C U
148		0.001	U	0.002	U	0.003	EMPC	0.003		0.003	EMPC	0.003	
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.002	U	0.002	U	0.003	EMPC	0.003		0.003	EMPC	0.002	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.002	U	0.001	U	0.001	U	0.002	U	0.002	U	0.002	U
153	153 + 168	1.040	C U	1.421	C U	1.712	C U	1.867	C U	1.487	C U	1.101	C U
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.001	U	0.001	U	0.001	U	0.002	U	0.002	U	0.001	U
156	156 + 157	0.069	C U	0.104	C U	0.175	C	0.192	C	0.114	C	0.085	C U
157	156 + 157		C156		C156		C156		C156		C156		C156
158		0.086	U	0.124	U	0.175		0.185		0.138	U	0.105	U
159		0.011	U	0.011	U	0.014	U	0.016	U	0.013	U	0.011	U
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.003	U	0.010	U	0.004	U	0.003	U	0.003	U	0.002	U
162		0.003	U	0.012	U	0.006	EMPC	0.006		0.004		0.004	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		0.063	U	0.087	U	0.126		0.130		0.104	U	0.076	U
165		0.003	U	0.011	U	0.004	U	0.003	U	0.003	U	0.003	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		0.029	U	0.046	U	0.067		0.073		0.048		0.037	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.004	U	0.012	U	0.005	U	0.004	U	0.004	U	0.003	U
170		0.100	U	0.145	U	0.179	U	0.178	U	0.158	U	0.123	U
171	171 + 173	0.056	C U	0.077	C U	0.090	C U	0.081	C U	0.081	C U	0.061	C U
172		0.026	U	0.037	U	0.043	U	0.041	U	0.041	U	0.032	U
173	171 + 173		C171		C171		C171		C171		C171		C171
174		0.194	U	0.268	U	0.256	U	0.256	U	0.259	U	0.191	U
175		0.013	U	0.018	U	0.017	U	0.017	U	0.018	U	0.013	U
176		0.045	U	0.060	U	0.057	U	0.060	U	0.060	U	0.044	U
177		0.129	U	0.189	U	0.204	U	0.192	U	0.203	U	0.155	U
178		0.074	U	0.105	U	0.100	U	0.115	U	0.111	U	0.082	U

Table G-9c
Data Not Used in the RI - 2007 Sediment Removal Monitoring
Semi-Permeable Membrane Device (SPMD) PCB Congener Analysis Results
9/10/07 Retrievals

IUPAC #	COELUTING CONGENERS[1]	070910-SPMD1A L10715-2		070910-SPMD1B L10715-3		070910-SPMD2A L10715-4		070910-SPMD2B L10715-5		070910-SPMD3A L10715-6		070910-SPMD3B L10715-7	
179		0.147	U	0.199	U	0.181	U	0.205	U	0.202	U	0.145	U
180	180 + 193	0.336	C U	0.482	C U	0.505	C U	0.505	C U	0.476	C U	0.356	C U
181		0.002	U	0.003	U	0.004	U	0.003	U	0.003	U	0.002	U
182		0.001	U	0.001	U	0.000	U	0.002		0.001	EMPC	0.002	
183	183 + 185	0.178	C U	0.236	C U	0.248	C U	0.242	C U	0.239	C U	0.180	C U
184		0.001	U	0.001	U	0.002	U	0.002	U	0.002	U	0.001	U
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.000	U	0.001	U	0.007	U	0.005	U	0.006	U	0.003	U
187		0.388	U	0.535	U	0.546	U	0.576	U	0.573	U	0.429	U
188		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
189		0.006	U	0.006	U	0.009	U	0.008	U	0.007	U	0.006	U
190		0.033	U	0.048	U	0.058	U	0.053	U	0.055	U	0.041	U
191		0.008	U	0.010	U	0.012	U	0.012	U	0.010	U	0.009	U
192		0.001	U	0.001	U	0.001	U	0.000	U	0.001	U	0.000	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		0.039	U	0.057	U	0.073	U	0.063	U	0.065	U	0.053	U
195		0.022	U	0.032	U	0.039	U	0.034	U	0.035	U	0.027	U
196		0.032	U	0.045	U	0.050	U	0.047	U	0.048	U	0.037	U
197	197 + 200	0.016	C U	0.021	C U	0.020	C U	0.021	C U	0.022	C U	0.017	C U
198	198 + 199	0.074	C U	0.102	C U	0.107	C U	0.111	C U	0.113	C U	0.086	C U
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		0.020	U	0.027	U	0.025	U	0.026	U	0.029	U	0.021	U
202		0.035	U	0.048	U	0.045	U	0.048	U	0.053	U	0.038	U
203		0.055	U	0.076	U	0.080	U	0.081	U	0.085	U	0.064	U
204		0.001	EMPC	0.001	U	0.001	EMPC	0.000	U	0.001	EMPC	0.001	
205		0.004	U	0.007	U	0.008	U	0.006	U	0.006	U	0.005	U
206		0.027	U	0.039	U	0.047	U	0.037	U	0.046	U	0.031	U
207		0.005	U	0.006	U	0.006	U	0.006	U	0.008	U	0.004	U
208		0.013	U	0.016	U	0.015	U	0.015	U	0.016	U	0.012	U
209		0.037	U	0.046	U	0.035	U	0.039	U	0.041	U	0.030	U

Notes:

All results are in units of pg/L (picograms/Liter)

C = concentration represents coeluting congeners
U = The analyte was not detected above the reported sample specific detection limit.
J = The reported value is an estimate.
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
PCBs = Polychlorinated Biphenyls
[1] = When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.

Table G-9d
Data Not Used in the RI - 2007 Sediment Removal Monitoring
Semi-Permeable Membrane Device (SPMD) PCB Congener Analysis Results
10/22/07 Retrievals

IUPAC #	COELUTING CONGENERS[1]	071022-SPMD1A L10715-9		071022-SPMD1B L10715-10		071022-SPMD2A L10715-11		071022-SPMD2B L10715-12		071022-SPMD3A L10715-13		071022-SPMD3B L10715-14	
1		0.411	U	0.442	U	0.210	U	0.198	U	0.261	U	0.278	U
2		0.161	U	0.196	U	0.103	UJ	0.095	UJ	0.125	U	0.117	U
3		0.309	U	0.314	U	0.159	U	0.143	U	0.184	U	0.178	U
4		1.459	U	1.506	U	0.683	U	0.636	U	0.830	U	0.794	U
5		0.149	U	0.118	UJ	0.052	UJ	0.050	UJ	0.060	U	0.062	UJ
6		0.759	U	0.632	UJ	0.257	UJ	0.241	UJ	0.323	U	0.331	UJ
7		0.179	U	0.142	UJ	0.058	UJ	0.058	UJ	0.075	U	0.076	UJ
8		3.536	U	3.004	UJ	1.207	UJ	1.136	UJ	1.498	U	1.542	UJ
9		0.275	U	0.214	UJ	0.093	UJ	0.089	UJ	0.115	U	0.116	UJ
10		0.060	U	0.045	UJ	0.020	UJ	0.018	UJ	0.025	U	0.025	UJ
11		23.309		27.169	J	15.290	J	16.057	J	27.703		24.432	J
12	12 + 13	0.439	C U	0.462	C UJ	0.204	C UJ	0.192	C UJ	0.246	C U	0.244	C UJ
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.011		0.010	EMPC	0.004	UJ	0.004	UJ	0.006	EMPC	0.003	J
15		1.557	U	1.384	U	0.613	U	0.615	U	0.766	U	0.738	U
16		1.932	U	1.624	U	0.622	UJ	0.623	U	0.801	U	0.765	U
17		1.987	U	1.506	U	0.615	UJ	0.633	U	0.816	U	0.793	U
18	18 + 30	3.754	C U	2.794	C U	1.099	C UJ	1.118	C U	1.514	C U	1.448	C U
19		0.501	U	0.493	U	0.224	U	0.216	U	0.244	U	0.238	U
20	20 + 28	5.509	C U	4.468	C U	1.820	C UJ	1.882	C U	2.339	C U	2.269	C U
21	21 + 33	3.211	C U	2.587	C U	1.015	C UJ	1.017	C U	1.222	C U	1.229	C U
22		1.960	U	1.651	U	0.665	UJ	0.684	U	0.818	U	0.817	U
23		0.009	U	0.008	U	0.003	UJ	0.003	U	0.004	U	0.004	U
24		0.073	U	0.059	U	0.022	UJ	0.025	U	0.028	U	0.033	U
25		0.428	U	0.337	U	0.142	UJ	0.152	U	0.168	U	0.164	U
26	26 + 29	1.069	C U	0.828	C U	0.335	C UJ	0.352	C U	0.423	C U	0.399	C U
27		0.299	U	0.228	U	0.103	UJ	0.110	U	0.121	U	0.115	U
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		4.851	U	3.722	U	1.513	UJ	1.563	U	1.932	U	1.871	U
32		1.229	U	0.957	U	0.383	UJ	0.392	U	0.477	U	0.463	U
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.024	U	0.018	U	0.007	UJ	0.009	U	0.009	U	0.009	U
35		0.089	U	0.084	U	0.046	UJ	0.044	U	0.068	U	0.059	U
36		0.015		0.014		0.008	UJ	0.009		0.016		0.012	
37		0.923	U	0.777	U	0.354	U	0.361	U	0.433	U	0.409	U
38		0.008	U	0.008	U	0.003	UJ	0.004	U	0.005	U	0.005	U
39		0.026	U	0.022	U	0.010	UJ	0.011	U	0.012	U	0.011	U
40	40 + 41 + 71	1.742	C U	1.444	C U	0.609	C U	0.662	C U	0.710	C U	0.651	C U
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		0.822	U	0.677	U	0.279	U	0.303	U	0.337	U	0.310	U
43		0.175	U	0.144	U	0.053	U	0.057	U	0.068	U	0.064	U
44	44 + 47 + 65	2.962	C U	2.446	C U	1.127	C U	1.426	C U	1.244	C U	1.129	C U
45	45 + 51	0.714	C U	0.601	C U	0.224	C U	0.245	C U	0.295	C U	0.271	C U
46		0.227	U	0.200	U	0.075	U	0.086	U	0.097	U	0.089	U
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		0.843	U	0.670	U	0.250	U	0.263	U	0.331	U	0.305	U
49	49 + 69	1.910	C U	1.519	C U	0.708	C U	0.904	C U	0.799	C U	0.706	C U
50	50 + 53	0.546	C U	0.439	C U	0.199	C U	0.251	C U	0.221	C U	0.190	C U
51	45 + 51		C45		C45		C45		C45		C45		C45
52		3.394	U	2.803	U	1.520	U	2.212	U	1.530	U	1.329	U
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.011	U	0.011	U	0.009	U	0.010	U	0.006	U	0.005	U
55		0.067	U	0.055	U	0.028	U	0.021	U	0.028	U	0.030	U
56		0.833	U	0.653	U	0.341	U	0.413	U	0.364	U	0.349	U
57		0.017	U	0.012	U	0.005	U	0.005	U	0.007	U	0.006	U
58		0.008	U	0.005		0.002	U	0.003	U	0.004	EMPC	0.003	
59	59 + 62 + 75	0.343	C U	0.278	C U	0.108	C U	0.109	C U	0.142	C U	0.129	C U
60		0.510	U	0.444	U	0.225	U	0.263	U	0.262	U	0.248	U
61	61 + 70 + 74 + 76	3.775	C U	3.102	C U	1.779	C U	2.503	C U	1.652	C U	1.533	C U
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		0.105	U	0.083	U	0.040	U	0.051	U	0.046	U	0.043	U
64		1.303	U	1.083	U	0.476	U	0.570	U	0.581	U	0.518	U
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		1.935	U	1.598	U	0.873	U	1.096	U	0.879	U	0.818	U
67		0.091	U	0.075	U	0.030	U	0.031	U	0.039	U	0.036	U
68		0.025	U	0.025	U	0.014	U	0.013	U	0.014	U	0.012	U
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		0.017	U	0.014	U	0.007	U	0.009	U	0.009	U	0.008	U
73		0.001	U	0.001	U	0.000	U	0.001	U	0.000	U	0.000	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		0.103	U	0.097	U	0.048	U	0.054	U	0.066	U	0.055	U
78		0.010	U	0.006	U	0.009	U	0.003	U	0.003	U	0.003	U
79		0.016	U	0.015	U	0.014		0.028		0.012	U	0.009	U
80		0.007	U	0.003	U	0.002	U	0.003	U	0.003	U	0.002	U
81		0.008	U	0.007	U	0.002	U	0.003	U	0.004	U	0.003	U
82		0.141	U	0.139	U	0.149	U	0.267		0.078	U	0.068	U
83	83 + 99	0.878	C U	0.847	C U	0.840	C U	1.580	C	0.510	C U	0.426	C U
84		0.416	U	0.396	U	0.345	U	0.595		0.234	U	0.196	U
85	85 + 116 + 117	0.294	C U	0.290	C U	0.300	C U	0.542	C	0.186	C U	0.155	C U
86	86 + 87 + 97 + 108 + 119 + 125	1.057	C U	1.006	C U	0.996	C U	1.848	C	0.605	C U	0.518	C U

Table G-9d
Data Not Used in the RI - 2007 Sediment Removal Monitoring
Semi-Permeable Membrane Device (SPMD) PCB Congener Analysis Results
10/22/07 Retrievals

IUPAC #	COELUTING CONGENERS[1]	071022-SPMD1A L10715-9		071022-SPMD1B L10715-10		071022-SPMD2A L10715-11		071022-SPMD2B L10715-12		071022-SPMD3A L10715-13		071022-SPMD3B L10715-14	
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	0.246	C U	0.237	C U	0.190	C U	0.323	C U	0.135	C U	0.111	C U
89		0.027	U	0.024	U	0.014	U	0.022	U	0.014	U	0.012	U
90	90 + 101 + 113	2.006	C U	1.887	C U	1.467	C U	2.534	C	1.125	C U	0.927	C U
91	88 + 91		C88		C88		C88		C88		C88		C88
92		0.342	U	0.321	U	0.247	U	0.427		0.210	U	0.171	U
93	93 + 95 + 98 + 100 + 102	1.755	C U	1.620	C U	1.134	C U	1.966	C U	0.927	C U	0.773	C U
94		0.014	U	0.012	U	0.007	U	0.011	U	0.005	U	0.005	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.020	U	0.018	U	0.009	U	0.014	U	0.009	U	0.008	U
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		0.013	U	0.012	U	0.008	U	0.012	U	0.008	U	0.007	U
104		0.007		0.006	U	0.001	U	0.003	U	0.003	U	0.000	U
105		0.434	U	0.462	U	0.635		1.321		0.320	U	0.268	U
106		0.005	U	0.006	U	0.003	U	0.005	U	0.003	U	0.003	U
107	107 + 124	0.050	C U	0.045	C U	0.055	C	0.107	C	0.032	C U	0.027	C U
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		0.079	U	0.081	U	0.102		0.223		0.061	U	0.053	U
110	110 + 115	1.610	C U	1.597	C U	1.676	C	3.079	C	1.056	C U	0.915	C U
111		0.002	U	0.002	U	0.001	U	0.001	U	0.001	U	0.001	U
112		0.002	U	0.002	U	0.001	U	0.001	U	0.001	U	0.000	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		0.032	U	0.030	U	0.043		0.099		0.020	U	0.016	U
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		1.123	U	1.172	U	1.724		3.858		0.748	U	0.626	U
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		0.004		0.005	EMPC	0.002	EMPC	0.002	EMPC	0.003		0.002	EMPC
121		0.002	U	0.002	U	0.001	U	0.001	U	0.001	U	0.001	U
122		0.011	U	0.011	U	0.016		0.032		0.008	U	0.007	U
123		0.035	U	0.030	U	0.036	U	0.068		0.023	U	0.016	U
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		0.007	U	0.008	U	0.004	U	0.006	U	0.005	U	0.004	U
127		0.006	U	0.008	U	0.004	EMPC	0.007	EMPC	0.004	U	0.004	U
128	128 + 166	0.164	C U	0.170	C U	0.219	C	0.402	C	0.125	C U	0.105	C U
129	129 + 138 + 160 + 163	1.526	C U	1.483	C U	1.518	C U	2.791	C	0.958	C U	0.823	C U
130		0.080	U	0.083	U	0.085		0.158		0.061	U	0.050	U
131		0.019	U	0.017	U	0.015		0.028		0.010	U	0.008	U
132		0.461	U	0.456	U	0.388	U	0.631	U	0.270	U	0.239	U
133		0.030	U	0.025	U	0.020	U	0.035		0.020	U	0.016	U
134	134 + 143	0.092	C U	0.087	C U	0.071	C U	0.117	C U	0.052	C U	0.044	C U
135	135 + 151 + 154	0.984	C U	0.889	C U	0.483	C U	0.657	C U	0.519	C U	0.454	C U
136		0.290	U	0.274	U	0.148	U	0.205	U	0.144	U	0.123	U
137		0.042	U	0.038	U	0.079		0.187		0.024	U	0.019	U
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	0.020	C	0.020	C U	0.022	C	0.040	C	0.012	C U	0.011	C U
140	139 + 140		C139		C139		C139		C139		C139		C139
141		0.359	U	0.308	U	0.210	U	0.306	U	0.163	U	0.144	U
142		0.004	U	0.005	U	0.003	U	0.004	U	0.002	U	0.002	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		0.136	U	0.120	U	0.064	U	0.094	U	0.063	U	0.059	U
145		0.001	EMPC	0.000	U	0.001	EMPC	0.001	EMPC	0.001	EMPC	0.000	U
146		0.277	U	0.258	U	0.205	U	0.359		0.168	U	0.146	U
147	147 + 149	1.829	C U	1.671	C U	1.053	C U	1.545	C U	0.979	C U	0.851	C U
148		0.002	U	0.002	U	0.001	U	0.002	EMPC	0.002	EMPC	0.002	U
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.002	U	0.002	U	0.001	U	0.002	U	0.001	U	0.001	U
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.006	U	0.005	U	0.001	U	0.004	U	0.003	U	0.001	U
153	153 + 168	1.799	C U	1.672	C U	1.360	C U	2.522	C	0.975	C U	0.852	C U
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.002	U	0.002	U	0.001	U	0.001	U	0.001	U	0.001	U
156	156 + 157	0.125	C U	0.127	C U	0.211	C	0.453	C	0.070	C U	0.059	C U
157	156 + 157		C156		C156		C156		C156		C156		C156
158		0.153	U	0.148	U	0.146	U	0.257		0.088	U	0.079	U
159		0.022	U	0.018	U	0.010	U	0.013	U	0.009	U	0.010	U
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.004	U	0.005	U	0.003	U	0.004	U	0.002	U	0.002	U
162		0.004	U	0.006	U	0.006		0.011		0.003		0.002	U
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		0.113	U	0.107	U	0.098	U	0.163		0.068	U	0.060	U
165		0.004	U	0.005	U	0.003	U	0.004	U	0.002	U	0.002	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		0.048	U	0.051	U	0.070		0.154		0.027	U	0.025	U
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.005	U	0.007	U	0.003	U	0.005	U	0.003	U	0.003	U
170		0.199	U	0.187	U	0.153	U	0.254	U	0.109	U	0.101	U
171	171 + 173	0.107	C U	0.099	C U	0.061	C U	0.081	C U	0.059	C U	0.053	C U
172		0.055	U	0.048	U	0.030	U	0.044	U	0.030	U	0.026	U

Table G-9d
Data Not Used in the RI - 2007 Sediment Removal Monitoring
Semi-Permeable Membrane Device (SPMD) PCB Congener Analysis Results
10/22/07 Retrievals

IUPAC #	COELUTING CONGENERS[1]	071022-SPMD1A L10715-9		071022-SPMD1B L10715-10		071022-SPMD2A L10715-11		071022-SPMD2B L10715-12		071022-SPMD3A L10715-13		071022-SPMD3B L10715-14	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		0.377	U	0.351	U	0.206	U	0.256	U	0.199	U	0.181	U
175		0.026	U	0.023	U	0.012	U	0.017	U	0.014	U	0.012	U
176		0.090	U	0.077	U	0.040	U	0.046	U	0.049	U	0.043	U
177		0.245	U	0.223	U	0.135	U	0.182	U	0.146	U	0.128	U
178		0.144	U	0.131	U	0.069	U	0.087	U	0.081	U	0.073	U
179		0.303	U	0.263	U	0.131	U	0.146	U	0.154	U	0.137	U
180	180 + 193	0.676	C U	0.602	C U	0.411	C U	0.706	C U	0.356	C U	0.320	C U
181		0.004	U	0.021		0.031		0.006	U	0.002	U	0.001	U
182		0.001	U	0.001	U	0.000	U	0.000	U	0.000	U	0.000	U
183	183 + 185	0.379	C U	0.328	C U	0.186	C U	0.241	C U	0.193	C U	0.174	C U
184		0.002	U	0.003	U	0.001	U	0.001	U	0.002	U	0.001	U
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.009	U	0.006	U	0.011	U	0.003	U	0.004	U	0.002	U
187		0.738	U	0.697	U	0.398	U	0.553	U	0.424	U	0.368	U
188		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
189		0.010	U	0.009	U	0.008	U	0.013	U	0.005	U	0.004	U
190		0.061	U	0.054	U	0.041	U	0.060	U	0.039	U	0.033	U
191		0.014	U	0.015	U	0.010	U	0.015	U	0.008	U	0.007	U
192		0.001	EMPC	0.001	U	0.001	U	0.000	U	0.001	U	0.000	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		0.082	U	0.079	U	0.053	U	0.103	U	0.050	U	0.041	U
195		0.046	U	0.041	U	0.025	U	0.034	U	0.024	U	0.020	U
196		0.072	U	0.066	U	0.037	U	0.064	U	0.038	U	0.033	U
197	197 + 200	0.033	C U	0.032	C U	0.014	C U	0.021	C U	0.018	C U	0.017	C U
198	198 + 199	0.150	C U	0.137	C U	0.079	C U	0.155	C U	0.080	C U	0.072	C U
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		0.045	U	0.044	U	0.020	U	0.029	U	0.024	U	0.020	U
202		0.073	U	0.072	U	0.033	U	0.046	U	0.036	U	0.033	U
203		0.109	U	0.102	U	0.057	U	0.086	U	0.064	U	0.055	U
204		0.004	EMPC	0.003	EMPC	0.000	U	0.002	EMPC	0.001	EMPC	0.000	U
205		0.006	U	0.007	U	0.005	U	0.006	U	0.005	U	0.003	U
206		0.059	U	0.047	U	0.030	U	0.049	U	0.034	U	0.030	U
207		0.009	U	0.009	U	0.005	U	0.007	U	0.005	U	0.004	U
208		0.021	U	0.022	U	0.010	U	0.018	U	0.012	U	0.010	U
209		0.088	U	0.077	U	0.034	U	0.039	U	0.033	U	0.023	U

Notes:

All results are in units of pg/L (picograms/Liter)

C = concentration represents coeluting congeners
U = The analyte was not detected above the reported sample specific detection limit.
J = The reported value is an estimate.
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
PCBs = Polychlorinated Biphenyls
[1] = When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.

Table G-9e
Data Not Used in the RI - 2007 Sediment Removal Monitoring
Semi-Permeable Membrane Device (SPMD) PCB Congener Analysis Results
11/02/07 Retrievals

IUPAC #	COELUTING CONGENERS[1]	071102-SPMD1A L10715-15		071102-SPMD1B L10715-16		071102-SPMD2A L10715-17		071102-SPMD2B L10715-18		071102-SPMD3A L10715-19		071102-SPMD3B L10715-20	
1		0.226	U		R	0.141	U	0.157	U	0.209	U	0.184	U
2		0.102	UJ		R	0.093	U	0.100	UJ	0.161	UJ	0.131	UJ
3		0.158	U		R	0.116	U	0.117	U	0.162	U	0.149	U
4		0.700	U	0.558	U	0.486	U	0.516	U	0.737	U	0.615	U
5		0.069	UJ	0.041	UJ	0.071	U	0.059	UJ	0.071	UJ	0.067	UJ
6		0.285	UJ	0.181	UJ	0.209	U	0.208	UJ	0.302	UJ	0.282	UJ
7		0.063	UJ	0.039	UJ	0.049	U	0.051	UJ	0.075	UJ	0.065	UJ
8		1.305	UJ	0.825	UJ	0.986	U	0.953	UJ	1.370	UJ	1.269	UJ
9		0.102	UJ	0.062	UJ	0.083	U	0.081	UJ	0.124	UJ	0.106	UJ
10		0.021	UJ	0.015	UJ	0.017	U	0.017	UJ	0.021	UJ	0.021	UJ
11		16.614	J	9.113	J	22.357		16.825	J	36.264	J	32.765	J
12	12 + 13	0.246	C UJ	0.176	C UJ	0.222	C U	0.229	C UJ	0.341	C UJ	0.321	C UJ
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.005	J	0.003	UJ	0.003	U	0.004	UJ	0.004	UJ	0.005	UJ
15		0.687	U	0.412	U	0.655	U	0.547	U	0.814	U	0.680	U
16		0.678	UJ	0.382	UJ	0.615	U	0.537	UJ	0.779	U	0.693	UJ
17		0.650	UJ	0.372	UJ	0.643	U	0.537	UJ	0.830	U	0.706	UJ
18	18 + 30	1.206	C UJ	0.651	C UJ	1.130	C U	0.949	C UJ	1.505	C U	1.256	C UJ
19		0.217	UJ	0.139	U	0.181	U	0.185	U	0.227	U	0.191	U
20	20 + 28	2.077	C UJ	1.108	C UJ	2.121	C U	1.787	C UJ	2.688	C U	2.285	C UJ
21	21 + 33	1.207	C UJ	0.646	C UJ	1.154	C U	1.004	C UJ	1.418	C U	1.307	C UJ
22		0.797	UJ	0.423	UJ	0.781	U	0.680	UJ	0.952	U	0.867	UJ
23		0.004	UJ	0.002	UJ	0.003	U	0.003	UJ	0.006	U	0.004	UJ
24		0.028	UJ	0.012	UJ	0.024	U	0.023	UJ	0.038	U	0.025	UJ
25		0.153	UJ	0.080	UJ	0.156	U	0.138	UJ	0.188	U	0.172	UJ
26	26 + 29	0.373	C UJ	0.193	C UJ	0.356	C U	0.308	C UJ	0.457	C U	0.433	C UJ
27		0.100	UJ	0.053	UJ	0.104	U	0.092	UJ	0.123	U	0.108	UJ
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		1.714	UJ	0.900	UJ	1.709	U	1.458	UJ	2.217	U	1.880	UJ
32		0.416	UJ	0.226	UJ	0.389	U	0.346	UJ	0.482	U	0.420	UJ
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.008	UJ	0.004	UJ	0.007	U	0.006	UJ	0.011	U	0.011	UJ
35		0.047	UJ	0.026	UJ	0.062	U	0.044	UJ	0.088	U	0.069	UJ
36		0.009	EMPC	0.004	EMPC	0.012		0.009	UJ	0.022		0.020	EMPC
37		0.424	U	0.205	U	0.473	U	0.404	U	0.533	U	0.463	U
38		0.004	UJ	0.001	UJ	0.007	U	0.004	UJ	0.006	U	0.007	EMPC
39		0.010	UJ	0.006	UJ	0.011	U	0.010	UJ	0.015	U	0.012	UJ
40	40 + 41 + 71	0.712	C U	0.347	C U	0.797	C U	0.709	C U	0.878	C U	0.841	C U
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		0.321	U	0.161	U	0.370	U	0.318	U	0.416	U	0.393	U
43		0.061	U	0.031	U	0.071	U	0.062	U	0.080	U	0.077	U
44	44 + 47 + 65	1.115	C U	0.553	C U	1.417	C U	1.229	C U	1.494	C U	1.384	C U
45	45 + 51	0.251	C U	0.125	C U	0.291	C U	0.237	C U	0.328	C U	0.283	C U
46		0.083	U	0.043	U	0.097	U	0.082	U	0.108	U	0.095	U
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		0.300	U	0.151	U	0.339	U	0.276	U	0.393	U	0.371	U
49	49 + 69	0.660	C U	0.331	C U	0.879	C U	0.761	C U	0.942	C U	0.846	C U
50	50 + 53	0.175	C U	0.085	C U	0.227	C U	0.191	C U	0.233	C U	0.222	C U
51	45 + 51		C45		C45		C45		C45		C45		C45
52		1.184	U	0.596	U	1.770	U	1.580	U	1.776	U	1.555	U
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.005	U	0.003	U	0.007	U	0.007	U	0.007	U	0.006	U
55		0.033	U	0.012	U	0.038	U	0.035	U	0.040	U	0.037	U
56		0.419	U	0.178	U	0.464	U	0.429	U	0.498	U	0.504	U
57		0.006	U	0.003	U	0.007	U	0.006	U	0.008	U	0.007	U
58		0.004	U	0.002	U	0.004	U	0.004	U	0.005	U	0.004	U
59	59 + 62 + 75	0.129	C U	0.064	C U	0.148	C U	0.125	C U	0.172	C U	0.163	C U
60		0.272	U	0.121	U	0.319	U	0.277	U	0.355	U	0.341	U
61	61 + 70 + 74 + 76	1.556	C U	0.718	C U	2.135	C U	1.955	C U	2.181	C U	2.112	C U
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		0.040	U	0.019	U	0.054	U	0.045	U	0.057	U	0.056	U
64		0.519	U	0.248	U	0.635	U	0.542	U	0.704	U	0.649	U
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		0.843	U	0.371	U	1.069	U	0.967	U	1.175	U	1.130	U
67		0.038	U	0.018	U	0.045	U	0.040	U	0.052	U	0.048	U
68		0.013	U	0.005	U	0.016	U	0.015	U	0.020	U	0.015	U
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		0.007	U	0.003	U	0.009	U	0.007	U	0.013	U	0.009	U
73		0.000	U	0.000	U	0.001	U	0.001	U	0.001	U	0.001	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		0.051	U	0.022	U	0.067	U	0.054	U	0.073	U	0.069	U
78		0.004	U	0.002	U	0.004	U	0.005	U	0.006	U	0.004	U
79		0.007	U	0.003	U	0.013	U	0.015	U	0.013	U	0.012	U
80		0.004	U	0.002	U	0.004	U	0.004	U	0.005	U	0.004	U
81		0.004	U	0.002	U	0.004	U	0.004	U	0.007	U	0.004	U
82		0.074	U	0.035	U	0.132	U	0.142	U	0.097	U	0.092	U
83	83 + 99	0.375	C U	0.177	C U	0.749	C U	0.818	C U	0.591	C U	0.551	C U
84		0.189	U	0.092	U	0.333	U	0.350	U	0.274	U	0.249	U
85	85 + 116 + 117	0.136	C U	0.062	C U	0.260	C U	0.284	C U	0.218	C U	0.191	C U
86	86 + 87 + 97 + 108 + 119 + 125	0.501	C U	0.229	C U	0.942	C U	0.970	C U	0.744	C U	0.688	C U
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	0.107	C U	0.052	C U	0.191	C U	0.190	C U	0.158	C U	0.139	C U
89		0.013	U	0.007	U	0.018	U	0.018	U	0.017	U	0.016	U

Table G-9e
Data Not Used in the RI - 2007 Sediment Removal Monitoring
Semi-Permeable Membrane Device (SPMD) PCB Congener Analysis Results
11/02/07 Retrievals

IUPAC #	COELUTING CONGENERS[1]	071102-SPMD1A L10715-15		071102-SPMD1B L10715-16		071102-SPMD2A L10715-17		071102-SPMD2B L10715-18		071102-SPMD3A L10715-19		071102-SPMD3B L10715-20	
90	90 + 101 + 113	0.855	C U	0.404	C U	1.494	C U	1.477	C U	1.302	C U	1.183	C U
91	88 + 91		C88		C88		C88		C88		C88		C88
92		0.146	U	0.069	U	0.258	U	0.244	U	0.235	U	0.210	U
93	93 + 95 + 98 + 100 + 102	0.712	C U	0.344	C U	1.208	C U	1.177	C U	1.070	C U	0.964	C U
94		0.006	U	0.002	U	0.008	U	0.008	U	0.007	U	0.007	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.008	U	0.003	U	0.010	U	0.010	U	0.010	U	0.009	U
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		0.005	U	0.002	U	0.009	U	0.008	U	0.009	U	0.008	U
104		0.003	U	0.001	U	0.001	U	0.001	U	0.001	U	0.006	
105		0.215	U	0.093	U	0.503	U	0.586		0.353	U	0.333	U
106		0.003	U	0.002	U	0.003	U	0.004	U	0.004	U	0.004	U
107	107 + 124	0.024	C U	0.010	C U	0.050	C U	0.049	C U	0.037	C U	0.035	C U
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		0.039	U	0.017	U	0.081	U	0.101		0.070	U	0.064	U
110	110 + 115	0.809	C U	0.358	C U	1.556	C U	1.588	C U	1.263	C U	1.122	C U
111		0.001	U	0.000	U	0.002	U	0.001	U	0.001	U	0.001	U
112		0.001	U	0.000	U	0.001	U	0.001	U	0.001	U	0.001	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		0.014	U	0.007	U	0.032	U	0.042		0.021	U	0.021	U
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		0.531	U	0.233	U	1.291	U	1.632		0.840	U	0.796	U
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		0.003	EMPC	0.001	EMPC	0.002	EMPC	0.002	EMPC	0.005	EMPC	0.004	
121		0.001	U	0.000	U	0.001	U	0.001	U	0.001	U	0.001	U
122		0.006	U	0.003	U	0.012	U	0.014		0.008	U	0.009	U
123		0.013	U	0.006	U	0.028	U	0.030	U	0.021	U	0.020	U
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		0.003	U	0.002	U	0.004	U	0.005	U	0.006	U	0.005	U
127		0.003	U	0.002	U	0.004	U	0.005	U	0.005	U	0.005	U
128	128 + 166	0.093	C U	0.038	C U	0.184	C	0.194	C	0.135	C U	0.128	C U
129	129 + 138 + 160 + 163	0.740	C U	0.333	C U	1.314	C U	1.433	C U	1.104	C U	1.128	C U
130		0.045	U	0.017	U	0.077	U	0.076	U	0.063	U	0.065	U
131		0.008	U	0.004	U	0.017	U	0.016	U	0.011	U	0.013	U
132		0.250	U	0.109	U	0.374	U	0.378	U	0.332	U	0.322	U
133		0.014	U	0.005	U	0.021	U	0.020	U	0.021	U	0.020	U
134	134 + 143	0.048	C U	0.021	C U	0.070	C U	0.068	C U	0.063	C U	0.056	C U
135	135 + 151 + 154	0.446	C U	0.206	C U	0.562	C U	0.485	C U	0.593	C U	0.572	C U
136		0.130	U	0.062	U	0.166	U	0.149	U	0.165	U	0.156	U
137		0.019	U	0.008	U	0.060		0.076		0.029	U	0.027	U
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	0.010	C U	0.004	C U	0.021	C	0.020	C	0.015	C U	0.015	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		0.165	U	0.072	U	0.225	U	0.206	U	0.203	U	0.218	U
142		0.002	U	0.002	U	0.002	U	0.002	U	0.004	U	0.003	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		0.061	U	0.029	U	0.074	U	0.069	U	0.075	U	0.077	U
145		0.000	EMPC	0.000	EMPC	0.000	EMPC	0.000	EMPC	0.000	EMPC	0.000	EMPC
146		0.129	U	0.056	U	0.199	U	0.198	U	0.189	U	0.198	U
147	147 + 149	0.865	C U	0.390	C U	1.154	C U	1.064	C U	1.137	C U	1.138	C U
148		0.001	U	0.001	U	0.001	U	0.001	U	0.002	U	0.002	EMPC
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.001	U	0.000	U	0.002	U	0.001	U	0.001	U	0.001	U
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.002	U	0.000	U	0.001	U	0.001	U	0.001	U	0.005	EMPC
153	153 + 168	0.833	C U	0.370	C U	1.263	C U	1.353	C U	1.155	C U	1.186	C U
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.001	U	0.000	U	0.001	U	0.001	U	0.001	U	0.001	U
156	156 + 157	0.056	C U	0.024	C U	0.146	C U	0.189	C	0.078	C U	0.091	C U
157	156 + 157		C156		C156		C156		C156		C156		C156
158		0.074	U	0.033	U	0.140	U	0.138	U	0.106	U	0.112	U
159		0.010	U	0.004	U	0.012	U	0.012	U	0.013	U	0.014	U
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.002	U	0.001	U	0.002	U	0.002	U	0.004	U	0.003	U
162		0.003	U	0.002	U	0.004		0.005		0.004	U	0.003	EMPC
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		0.057	U	0.024	U	0.088	U	0.088	U	0.076	U	0.080	U
165		0.002	U	0.002	U	0.002	U	0.002	U	0.004	U	0.003	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		0.022	U	0.010	U	0.053	U	0.065		0.033	U	0.036	U
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.003	U	0.002	U	0.003	U	0.003	U	0.005	U	0.003	U
170		0.099	U	0.046	U	0.151	U	0.178	U	0.135	U	0.150	U
171	171 + 173	0.054	C U	0.024	C U	0.074	C U	0.072	C U	0.075	C U	0.076	C U
172		0.027	U	0.012	U	0.037	U	0.040	U	0.037	U	0.041	U
173	171 + 173		C171		C171		C171		C171		C171		C171
174		0.197	U	0.090	U	0.250	U	0.242	U	0.269	U	0.283	U
175		0.013	U	0.006	U	0.016	U	0.016	U	0.016	U	0.019	U
176		0.046	U	0.020	U	0.052	U	0.044	U	0.055	U	0.054	U
177		0.121	U	0.056	U	0.157	U	0.159	U	0.175	U	0.179	U
178		0.070	U	0.032	U	0.082	U	0.080	U	0.098	U	0.092	U

Table G-9e
Data Not Used in the RI - 2007 Sediment Removal Monitoring
Semi-Permeable Membrane Device (SPMD) PCB Congener Analysis Results
11/02/07 Retrievals

IUPAC #	COELUTING CONGENERS[1]	071102-SPMD1A L10715-15		071102-SPMD1B L10715-16		071102-SPMD2A L10715-17		071102-SPMD2B L10715-18		071102-SPMD3A L10715-19		071102-SPMD3B L10715-20	
179		0.150	U	0.065	U	0.162	U	0.148	U	0.185	U	0.189	U
180	180 + 193	0.341	C U	0.150	C U	0.453	C U	0.539	C U	0.458	C U	0.511	C U
181		0.002	U	0.007	EMPC	0.004	U	0.003	U	0.005	U	0.026	
182		0.001	U	0.001	EMPC	0.001	U	0.000	U	0.001	EMPC	0.000	U
183	183 + 185	0.185	C U	0.081	C U	0.221	C U	0.226	C U	0.238	C U	0.262	C U
184		0.001	U	0.001	U	0.001	U	0.001	U	0.002	U	0.001	U
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.002	U	0.001	U	0.003	U	0.002	U	0.002	U	0.005	U
187		0.370	U	0.163	U	0.444	U	0.472	U	0.499	U	0.522	U
188		0.001	U	0.000	U	0.001	U	0.001	U	0.001	U	0.001	U
189		0.004	U	0.002	U	0.008	U	0.008	U	0.005	U	0.007	U
190		0.030	U	0.013	U	0.040	U	0.048	U	0.044	U	0.043	U
191		0.007	U	0.003	U	0.012	U	0.011	U	0.010	U	0.011	U
192		0.001	U	0.000	EMPC	0.001	EMPC	0.001	U	0.001	U	0.001	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		0.044	U	0.018	U	0.055	U	0.077	U	0.053	U	0.069	U
195		0.022	U	0.010	U	0.027	U	0.035	U	0.030	U	0.033	U
196		0.040	U	0.017	U	0.046	U	0.057	U	0.046	U	0.053	U
197	197 + 200	0.020	C U	0.008	C U	0.022	C U	0.023	C U	0.023	C U	0.024	C U
198	198 + 199	0.078	C U	0.033	C U	0.097	C U	0.115	C U	0.101	C U	0.113	C U
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		0.024	U	0.009	U	0.027	U	0.029	U	0.032	U	0.033	U
202		0.035	U	0.015	U	0.042	U	0.037	U	0.043	U	0.048	U
203		0.058	U	0.025	U	0.066	U	0.077	U	0.077	U	0.083	U
204		0.001	EMPC	0.000	U	0.001	U	0.001	U	0.001	EMPC	0.002	EMPC
205		0.004	U	0.002	U	0.005	U	0.006	U	0.005	U	0.005	U
206		0.031	U	0.011	U	0.029	U	0.032	U	0.029	U	0.041	U
207		0.005	U	0.002	U	0.006	U	0.006	U	0.005	U	0.006	U
208		0.010	U	0.005	U	0.012	U	0.014	U	0.013	U	0.017	U
209		0.031	U	0.010	U	0.031	U	0.024	U	0.034	U	0.061	U

Notes:

All results are in units of pg/L (picograms/Liter)

C = concentration represents coeluting congeners
U = The analyte was not detected above the reported sample specific detection limit.
J = The reported value is an estimate.
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
PCBs = Polychlorinated Biphenyls
[1] = When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.

APPENDIX H
PCB AND PAH SUMMATIONS

Memorandum

URS

To: Mike Gross, PE, U.S. Army Corps of Engineers, Portland District

From: Mike Powell, Laura McWilliams, and Chi-Wah Wong

Date: September 30, 2010

Subject: Modified Approach for Calculating Total Concentrations of PCBs and PAHs
Bradford Island Remedial Investigation
Cascade Locks, Oregon

Background

During negotiations with the Technical Advisory Group (TAG) in early 2010, the following conventions were developed for summing total concentrations of polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) for use in the Bradford Island Remedial Investigation (RI) and risk assessments (RAs):

Total PCBs (as Congeners) – Total concentrations would be calculated using half of the reported detection limit (RDL) as a substitution value for the undetected congeners, and half of the reported value as a substitution value for the estimated maximum potential concentration (EMPC)-qualified data.

Total PCBs (as Aroclors) – Individual Aroclors which were never detected in a given media would be excluded from the sums. Aroclors that may be undetected in a certain sample but detected at least once in the remaining samples of a given media would be included in the sample-specific summations using half of the method detection limit (MDL) as a substitution value.

Total PAHs – Total concentrations would be calculated for low-molecular weight PAHs (LPAHs), high-molecular weight PAHs (HPAHs), and all PAHs (tPAHs). Individual PAHs never detected in a given media would be excluded from the sums. PAHs that may be undetected in a certain sample but detected at least once in the remaining samples of a given media would be included in the sample-specific summations using half of the MDL as a substitution value.

USACE Center of Expertise Recommendations

Upon review of the draft RI report by the USACE center of expertise, the reviewers recommended that, instead of the substitution method, the Kaplan-Meier method be used to calculate sums whenever possible. The substitution method (no matter what value – zero, the MDL, or half the MDL – is selected for the substitution) is not recommended by statisticians or the EPA (Helsel 1990, 2005b, 2005c, 2009; EPA 2006, 2010). Instead, the EPA currently recommends the Kaplan-Meier method with Efron's bias correction (EPA, 2010) which is generally applicable for summing data sets in which at least three of the components are detected. Use of the Kaplan-Meier method for calculating sums is

also consistent with the fact that the Kaplan-Meier method is already used in the RI Report for calculating statistical parameters, including mean, standard deviation, and 95% UCL (upper confidence limit on the mean), for data sets with undetected results.

In order to comply with the recently updated Department of Defense Quality Systems Manual (DoD QSM) version 4.1 (DOD, 2009), the reviewers recommended that full method reporting limit (MRL) should be used for censoring undetected values and that the full reported value should be used for censoring EMPC-qualified data. The reviewers acknowledged that statisticians strongly recommend against insider censoring (e.g., Helsel, 2005a) in which undetected results are censored using MRL values, which are greater than the "J"-flagged detected data (which fall between the MDL and the MRL and are used at face value). However, the Kaplan-Meier method is non-parametric and the plotting position of survival function is based on the detected results; therefore, this method is relatively insensitive to the choice of censoring values. The reviewers recommended that the sums could be calculated twice, once using the MDLs and once using the MRLs for censoring non-detects, and the differences discussed in the uncertainty sections of the report.

Where the Kaplan-Meier method cannot be used, the reviewers recommended using the substitution method, substituting the full method reporting limit (MRL) for undetected compounds (in compliance with the DoD QSM; DOD, 2009). The reviewers agreed that individual compounds that were never detected in site media should be excluded from the sums for total PCBs as Aroclors.

Proposed Modifications to the RI Report

The Kaplan-Meier method is a non-parametric statistical method and does not require assumptions of normality (Kaplan and Meier, 1958). It is currently the recommended method used in EPA's ProUCL software for calculating the 95% UCL for data sets with one or more censored results (EPA 2009a, 2009b). In the application of summing a group of related compounds, the Kaplan-Meier mean is estimated from a set of data (consisting of detected and non-detected values) coming from a given sample, and this Kaplan-Meier mean is then multiplied by the number of compounds (mean × n) to compute the sum for the sample.

In the revised RI Report, the Kaplan-Meier method (as encoded in the ProUCL software) will be used to calculate total PCB and PAH concentrations, with the incorporation of the Efron's bias correction, in which the minimum result (if it is a censored value) is re-coded as a detected result (EPA, 2010). The Kaplan-Meier method is used whenever it is feasible with the ProUCL software (i.e., when there are five or more components to the sum and at least two detected results [three coded-detected results if Efron's bias correction is used]). To safeguard against a potential biased-high estimate of the KM mean, if the aforementioned summation method results in a total concentration greater than a simple summation of detected concentrations and full censoring concentrations

(MDL, MRL, RDL, or EMPC value) of the non-detected data, the simple sum will establish an upper bound of the total concentration.

Total PCBs (as Congeners) – Total concentrations would be calculated using the Kaplan-Meier method, censoring undetected data at the reported detection limit (RDL) and EMPC-qualified at the reported concentration. (Please note that although censoring using a MRL was suggested by the reviewers, the laboratory only provided RDL values.) The resulting total concentration will be capped by the simple sum of detected concentrations, EMPC-qualified concentrations, and RDLs for undetected congeners. This method is more statistically robust, as well as more conservative than calculating the sums by substitution of half of the RDL for undetected results and half of the reported value for EMPC-qualified data. However, it does not change the conclusions derived from the sums (i.e., comparison to screening level values).

For all samples used in the RI Report, the attached table compares the concentrations of total PCB (as congeners) computed in five different ways:

- Simple sum with undetected and EMPC-qualified data set to zero.
- Simple sum with undetected results set at one half the RDL and EMPC-qualified data at one half the reported value.
- Simple sum with undetected results set at the RDL and EMPC-qualified data at the reported value.
- Kaplan-Meier based sum.
- Kaplan-Meier based sum, capped at the simple sum with undetected results set at the RDL and EMPC-qualified data at the reported value

URS proposes that the final column (capped Kaplan-Meier method) be used in the RI Report and associated RAs.

Total PCBs (as Aroclors) – Since no more than two individual Aroclors were ever detected in a given sample, the Kaplan-Meier method cannot be used. Therefore, the substitution method will be used. Individual compounds that were never detected in a given media will be excluded from the sums. Two sums will be calculated for each sample. In the first sum, Aroclors that may be undetected in a certain sample but detected at least once in the remaining samples of a given media would be included in the sample-specific summations using the MDL as a substitution value. In the second sum, these Aroclors would be included using the MRL as a substitution value.

Total PAHs – Total concentrations will be calculated for low-molecular weight PAHs (LPAHs), high-molecular weight PAHs (HPAHs), and all PAHs (tPAHs). No individual PAHs will be excluded from the sums. The sums will be calculated twice: once using the MDL as the censoring value for non-detects, and once using the MRL as the censoring value for non-detects. Whenever a minimum of five component PAHs are included in

the sum, and at least two component PAHs are detected, the sum will be calculated using the Kaplan-Meier method, capped by the simple sum with undetected results set at the MDL (or MRL). When these requirements are not met, the sum will be calculated as the simple sum with undetected results set at the MDL (or MRL).

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Table 1. Comparison of Concentrations of Total PCBs (as Congeners) Calculated by Different Methods

Medium	Area	Station	Prep. Fraction	Units	No. of Congeners (Excl. coeluted congeners)	No. of Detected Congeners (Excl. NDs and EMPCs)	Percentage of Detected Congeners	Total PCBs (as Congeners)				
								Simple Sum (NDs=0 and EMPCs=0)	Simple Sum (NDs=half RDL and EMPCs=half value)	Simple Sum (NDs=RDL and EMPCs=full value)	Kaplan-Meier method, Efron's corrected	Kaplan-Meier method, Efron's corrected, capped
Sediment	Reference	P22	Total	ug/kg	159	109	69%	0.4116	0.4136	0.4156	0.4134	0.4134
Sediment	Reference	P24	Total	ug/kg	159	102	64%	0.4451	0.4478	0.4505	0.4484	0.4484
Sediment	Reference	P26	Total	ug/kg	159	109	69%	0.3589	0.3613	0.3638	0.3609	0.3609
Sediment	Reference	P27	Total	ug/kg	159	118	74%	0.9282	0.9324	0.9366	0.9317	0.9317
Sediment	Reference	P28	Total	ug/kg	159	107	67%	0.4556	0.4582	0.4609	0.4579	0.4579
Sediment	Reference	P29	Total	ug/kg	159	114	72%	0.5831	0.5851	0.5872	0.5851	0.5851
Sediment	Reference	P34	Total	ug/kg	159	128	81%	1.2017	1.2031	1.2046	1.2036	1.2036
Sediment	Reference	P35	Total	ug/kg	159	104	65%	0.4019	0.4051	0.4083	0.4055	0.4055
Sediment	Reference	P36	Total	ug/kg	159	102	64%	0.3987	0.4017	0.4048	0.4023	0.4023
Sediment	Reference	P37	Total	ug/kg	159	99	62%	0.3749	0.3792	0.3834	0.3784	0.3784
Sediment	Reference	P38	Total	ug/kg	159	110	69%	0.5886	0.5905	0.5924	0.5915	0.5915
Sediment	Reference	P39	Total	ug/kg	159	91	57%	0.2673	0.2719	0.2766	0.2719	0.2719
Sediment	Reference	P40	Total	ug/kg	159	101	64%	0.4385	0.4416	0.4447	0.4420	0.4420
Sediment	Reference	P41	Total	ug/kg	159	94	59%	0.2702	0.2743	0.2784	0.2735	0.2735
Sediment	Reference	P42	Total	ug/kg	159	73	46%	0.1558	0.1622	0.1686	0.1606	0.1606
Sediment	Reference	P85	Total	ug/kg	159	107	67%	0.6319	0.6348	0.6377	0.6344	0.6344
Sediment	Reference	P86	Total	ug/kg	159	96	60%	0.3216	0.3261	0.3305	0.3260	0.3260
Sediment	Reference	P87	Total	ug/kg	159	103	65%	0.4052	0.4089	0.4126	0.4086	0.4086
Sediment	Forebay	P04	Total	ug/kg	159	130	82%	29.7236	29.7355	29.7475	29.7330	29.7330
Sediment	Forebay	P05	Total	ug/kg	159	88	55%	0.2970	0.3014	0.3058	0.3005	0.3005
Sediment	Forebay	P06	Total	ug/kg	159	97	61%	0.7718	0.7781	0.7843	0.7775	0.7775
Sediment	Forebay	P07	Total	ug/kg	159	110	69%	1.6887	1.6924	1.6962	1.6854	1.6854
Sediment	Forebay	P08	Total	ug/kg	159	105	66%	1.0805	1.0845	1.0885	1.0844	1.0844
Sediment	Forebay	P09	Total	ug/kg	159	113	71%	2.0879	2.0929	2.0978	2.0988	2.0978
Sediment	Forebay	P10	Total	ug/kg	159	120	75%	1.2338	1.2370	1.2403	1.2370	1.2370
Sediment	Forebay	P11	Total	ug/kg	159	126	79%	1.1191	1.1223	1.1256	1.1210	1.1210
Sediment	Forebay	P13	Total	ug/kg	159	108	68%	0.6788	0.6873	0.6957	0.6837	0.6837
Sediment	Forebay	P14	Total	ug/kg	159	72	45%	0.1378	0.1466	0.1553	0.1435	0.1435
Sediment	Forebay	P15	Total	ug/kg	159	114	72%	0.9703	0.9746	0.9790	0.9731	0.9731
Sediment	Forebay	P16	Total	ug/kg	159	108	68%	0.8324	0.8374	0.8424	0.8363	0.8363
Sediment	Forebay	P17	Total	ug/kg	159	105	66%	0.5856	0.5895	0.5934	0.5883	0.5883
Sediment	Forebay	P18	Total	ug/kg	159	113	71%	0.5202	0.5220	0.5239	0.5231	0.5231
Sediment	Forebay	P21	Total	ug/kg	159	108	68%	0.5681	0.5715	0.5749	0.5708	0.5708
Sediment	Forebay	P65	Total	ug/kg	159	103	65%	0.3966	0.3993	0.4019	0.3991	0.3991
Sediment	Forebay	P67	Total	ug/kg	159	61	38%	0.0559	0.0614	0.0670	0.0611	0.0611
Sediment	Forebay	P88	Total	ug/kg	159	95	60%	0.2008	0.2033	0.2058	0.2035	0.2035
Sediment	Forebay	P89	Total	ug/kg	159	79	50%	0.1460	0.1536	0.1612	0.1510	0.1510
Sediment	Other	P110	Total	ug/kg	159	105	66%	1.1946	1.2052	1.2158	1.2005	1.2005
Sediment	Other	P111	Total	ug/kg	159	106	67%	1.3351	1.3455	1.3559	1.3404	1.3404
Sediment	Other	P46	Total	ug/kg	159	59	37%	0.0821	0.0905	0.0990	0.0880	0.0880
Sediment	Other	P47	Total	ug/kg	159	85	53%	0.2099	0.2154	0.2210	0.2147	0.2147
Sediment	Other	P48	Total	ug/kg	159	86	54%	0.1684	0.1746	0.1808	0.1733	0.1733
Sediment	Other	P49	Total	ug/kg	159	103	65%	0.4123	0.4210	0.4297	0.4182	0.4182
Sediment	Other	P50	Total	ug/kg	159	110	69%	0.9151	0.9191	0.9230	0.9174	0.9174
Sediment	Other	P51	Total	ug/kg	159	77	48%	0.2079	0.2157	0.2235	0.2131	0.2131
Clam	Reference	P22	Total	ug/kg	159	144	91%	30.9084	30.9116	30.9149	30.8460	30.8460
Clam	Reference	P24	Total	ug/kg	159	139	87%	28.2942	28.3235	28.3528	28.3020	28.3020
Clam	Reference	P26	Total	ug/kg	159	123	77%	31.5801	31.5897	31.5992	31.6410	31.5992
Clam	Reference	P27	Total	ug/kg	159	123	77%	32.9696	32.9783	32.9870	32.9130	32.9130
Clam	Reference	P28	Total	ug/kg	159	140	88%	31.3838	31.3931	31.4023	31.3230	31.3230
Clam	Reference	P29	Total	ug/kg	159	144	91%	29.7757	29.7812	29.7867	29.7330	29.7330
Clam	Reference	P34	Total	ug/kg	159	141	89%	30.3789	30.3846	30.3904	30.3690	30.3690
Clam	Reference	P35	Total	ug/kg	159	142	89%	34.4403	34.4457	34.4510	34.5030	34.4510
Clam	Reference	P36	Total	ug/kg	159	144	91%	33.6567	33.6640	33.6713	33.7080	33.6713
Clam	Reference	P37	Total	ug/kg	159	141	89%	30.1738	30.2054	30.2370	30.2100	30.2100
Clam	Reference	P38	Total	ug/kg	159	138	87%	28.6382	28.6609	28.6836	28.6200	28.6200
Clam	Reference	P39	Total	ug/kg	159	136	86%	34.3547	34.3822	34.4096	34.3440	34.3440
Clam	Reference	P40	Total	ug/kg	159	142	89%	32.9312	32.9550	32.9788	32.9130	32.9130
Clam	Reference	P41	Total	ug/kg	159	139	87%	32.7845	32.8239	32.8632	32.7540	32.7540
Clam	Reference	P42	Total	ug/kg	159	131	82%	29.7961	29.8198	29.8434	29.7330	29.7330
Clam	Reference	P85	Total	ug/kg	159	135	85%	30.7472	30.7784	30.8096	30.6870	30.6870
Clam	Reference	P86	Total	ug/kg	159	134	84%	26.9842	27.0119	27.0397	27.0300	27.0300
Clam	Reference	P87	Total	ug/kg	159	136	86%	26.7974	26.8375	26.8776	26.8710	26.8710
Clam	Forebay	P04	Total	ug/kg	159	141	89%	311.5719	311.5856	311.5994	311.6400	311.5994
Clam	Forebay	P05	Total	ug/kg	159	136	86%	65.7648	65.7838	65.8028	65.8260	65.8028
Clam	Forebay	P06	Total	ug/kg	159	137	86%	95.0478	95.0562	95.0645	95.0820	95.0645
Clam	Forebay	P07	Total	ug/kg	159	138	87%	65.6834	65.6892	65.6949	65.6670	65.6670
Clam	Forebay	P08	Total	ug/kg	159	140	88%	51.5058	51.5112	51.5165	51.5160	51.5160
Clam	Forebay	P10	Total	ug/kg	159	138	87%	30.6211	30.6256	30.6302	30.6870	30.6302
Clam	Forebay	P11	Total	ug/kg	159	137	86%	26.7326	26.7378	26.7430	26.7120	26.7120
Clam	Forebay	P13	Total	ug/kg	159	140	88%	33.1352	33.1625	33.1897	33.0720	33.0720
Clam	Forebay	P14	Total	ug/kg	159	137	86%	33.9755	33.9859	33.9962	34.0260	33.9962
Clam	Forebay	P15	Total	ug/kg	159	137	86%	26.8951	26.9008	26.9065	26.8710	26.8710
Clam	Forebay	P16	Total	ug/kg	159	134	84%	25.5247	25.5304	25.5360	25.5990	25.5360
Clam	Forebay	P17	Total	ug/kg	159	139	87%	24.4511	24.4563	24.4616	24.4860	24.4616
Clam	Forebay	P18	Total	ug/kg	159	142	89%	25.9071	25.9117	25.9162	25.9170	25.9162
Clam	Forebay	P21	Total	ug/kg	159	138	87%	24.6565	24.6616	24.6668	24.6450	24.6450
Clam	Forebay	P65	Total	ug/kg	159	141	89%	33.1260	33.1315	33.1369	33.0720	33.0720
Clam	Forebay	P88	Total	ug/kg	159	139	87%	33.2737	33.3114	33.3491	33.2310	33.2310
Clam	Forebay	P89	Total	ug/kg	159	135	85%	31.6524	31.6631	31.6739	31.6410	31.6410
Clam	Other	P110	Total	ug/kg	159	136	86%	21.4316	21.4404	21.4493	21.4650	21.4493
Crayfish	Reference	P100-CF	Total	ug/kg	159	90	57%	0.9414	0.9495	0.9576	0.9461	0.9461
Crayfish	Reference	P22-CF	Total	ug/kg	159	54	34%	0.3581	0.3746	0.3910	0.3657	0.3657
Crayfish	Reference	P33-CF	Total	ug/kg	159	89	56%	0.6280	0.6377	0.6474	0.6344	0.6344
Crayfish	Reference	P38/42-CF	Total	ug/kg	159	95	60%	0.7127	0.7208	0.7289	0.7187	0.7187
Crayfish	Reference	P72-CF	Total	ug/kg	159	83	52%	0.6870	0.6966	0.7061	0.6917	0.6917
Crayfish	Reference	P73-CF	Total	ug/kg	159	86	54%	0.7288	0.7375	0.7461	0.7346	0.7346
Crayfish	Reference	P74-CF	Total	ug/kg	159	88	55%	0.7699	0.7763	0.7826	0.7743	0.7743
Crayfish	Reference	P75-CF	Total	ug/kg	159	76	48%	0.9428	0.9635	0.9841	0.9524	0.9524
Crayfish	Reference	P76-CF	Total	ug/kg	159	79	50%	0.4509	0.4602	0.4695	0.4563	0.4563
Crayfish	Reference	P78-CF	Total	ug/kg	159	86	54%	0.4903	0.5001	0.5100	0.4961	0.4961
Crayfish	Reference	P79-CF	Total	ug/kg	159	92	58%	0.8716	0.8802	0.8888	0.8761	0.8761
Crayfish	Reference	P82-CF	Total	ug/kg	159	91	57%	1.9386	1.9470	1.9554	1.9398	1.9398
Crayfish	Reference	P90-CF	Total	ug/kg	159	74	47%	1.1117	1.1234	1.1351	1.1178	1.1178
Crayfish	Reference	P91-CF	Total	ug/kg	159	88	55%	1.0105	1.0189	1.0274	1.0160	1.0160
Crayfish	Reference	P92-CF	Total	ug/kg	159	49	31%	0.4780	0.5031	0.5282	0.4977	0.4977
Crayfish	Reference	P94-CF	Total	ug/kg	159	79	50%	0.6428	0.6540	0.6653	0.6503	0.6503
Crayfish	Reference	P98-CF	Total	ug/kg	159	80	50%	0.6038	0.6121	0.6204	0.6090	0.6090
Crayfish	Forebay	P01-CF	Total	ug/kg	159	83	52%	1.4370	1.4500	1.4630	1.4421	1.4421
Crayfish	Forebay	P04-CF	Total	ug/kg	159	100	63%	16.8132	16.8268	16.8404	16.8540	16.8404
Crayfish	Forebay	P05-CF	Total	ug/kg	159	106	67%	16.8786	16.8903	16.9019	16.8540	16.8540
Crayfish	Forebay	P06-CF	Total	ug/kg	159	100	63%	42.6168	42.6752	42.7335	42.6120	42.6120
Crayfish	Forebay	P07-CF	Total	ug/kg	159	86	54%	12.4228	12.4470	12.4712	12.4338	12.4338
Crayfish	Forebay	P08-CF	Total	ug/kg	159	80	50%	3.1129	3.1255	3.1381	3.1164	3.1164
Crayfish	Forebay	P13-CF	Total	ug/kg	159	72	45%	0.5853	0.5983	0.6114	0.5915	0.5915

Crayfish	Forebay	P14-CF	Total	ug/kg	159	69	43%	0.8179	0.8318	0.8457	0.8252	0.8252
Crayfish	Forebay	P15-CF	Total	ug/kg	159	82	52%	0.8096	0.8205	0.8314	0.8157	0.8157
Crayfish	Forebay	P16-CF	Total	ug/kg	159	78	49%	1.3270	1.3438	1.3607	1.3356	1.3356
Crayfish	Forebay	P17-CF	Total	ug/kg	159	74	47%	0.5291	0.5420	0.5549	0.5358	0.5358
Crayfish	Forebay	P18-CF	Total	ug/kg	159	79	50%	1.1124	1.1219	1.1315	1.1178	1.1178
Crayfish	Forebay	P19-CF	Total	ug/kg	159	65	41%	0.7585	0.7753	0.7922	0.7664	0.7664
Crayfish	Forebay	P20-CF	Total	ug/kg	159	75	47%	0.9049	0.9204	0.9359	0.9111	0.9111
Crayfish	Forebay	P21-CF	Total	ug/kg	159	81	51%	0.9597	0.9750	0.9903	0.9667	0.9667
Crayfish	Other	P110	Total	ug/kg	159	74	47%	0.5785	0.5961	0.6138	0.5867	0.5867
Largescale Sucker	Forebay	COMP	Total	ug/kg	159	144	91%	200.9127	200.9290	200.9454	200.9760	200.9454
Sculpin	Reference	SR-01	Total	ug/kg	159	126	79%	16.8023	16.8121	16.8220	16.8540	16.8220
Sculpin	Reference	SR-02	Total	ug/kg	159	122	77%	21.9892	22.0006	22.0120	21.9420	21.9420
Sculpin	Reference	SR-03	Total	ug/kg	159	116	73%	37.5176	37.5320	37.5464	37.5240	37.5240
Sculpin	Reference	SR-04	Total	ug/kg	159	124	78%	15.9040	15.9134	15.9229	15.9000	15.9000
Sculpin	Reference	SR-05	Total	ug/kg	159	131	82%	38.3594	38.3772	38.3950	38.3190	38.3190
Sculpin	Reference	SR-06	Total	ug/kg	159	116	73%	12.2426	12.2569	12.2712	12.2430	12.2430
Sculpin	Reference	SR-07	Total	ug/kg	159	130	82%	19.2796	19.2901	19.3006	19.2390	19.2390
Sculpin	Reference	SR-08	Total	ug/kg	159	121	76%	18.1615	18.1723	18.1832	18.1260	18.1260
Sculpin	Reference	SR-09	Total	ug/kg	159	127	80%	18.5073	18.5180	18.5287	18.4440	18.4440
Sculpin	Reference	SR-10	Total	ug/kg	159	121	76%	23.9278	23.9495	23.9712	24.0090	23.9712
Sculpin	Reference	SR-11	Total	ug/kg	159	127	80%	32.4198	32.4295	32.4391	32.4360	32.4360
Sculpin	Reference	SR-12	Total	ug/kg	159	124	78%	27.5318	27.5436	27.5555	27.5070	27.5070
Sculpin	Reference	SR-13	Total	ug/kg	159	124	78%	31.4036	31.4288	31.4541	31.4820	31.4541
Sculpin	Reference	SR-14	Total	ug/kg	159	116	73%	22.2700	22.3073	22.3446	22.2600	22.2600
Sculpin	Reference	SR-15	Total	ug/kg	159	114	72%	27.1501	27.1789	27.2077	27.1890	27.1890
Sculpin	Reference	SR-16	Total	ug/kg	159	112	70%	17.3192	17.3592	17.3992	17.3310	17.3310
Sculpin	Reference	SR-17	Total	ug/kg	159	119	75%	30.5089	30.5330	30.5571	30.5280	30.5280
Sculpin	Reference	SR-18	Total	ug/kg	159	115	72%	24.2010	24.2384	24.2758	24.1680	24.1680
Sculpin	Forebay	SF-01	Total	ug/kg	159	121	76%	14.9477	14.9579	14.9681	14.9460	14.9460
Sculpin	Forebay	SF-02	Total	ug/kg	159	124	78%	48.8494	48.8617	48.8740	48.8130	48.8130
Sculpin	Forebay	SF-03	Total	ug/kg	159	90	57%	4770.5365	4777.1656	4783.7947	4773.1800	4773.1800
Sculpin	Forebay	SF-04	Total	ug/kg	159	135	85%	914.9107	914.9568	915.0028	914.8860	914.8860
Sculpin	Forebay	SF-05	Total	ug/kg	159	136	86%	558.8605	558.9068	558.9531	558.8850	558.8850
Sculpin	Forebay	SF-06	Total	ug/kg	159	133	84%	141.1439	141.1665	141.1891	141.1920	141.1891
Sculpin	Forebay	SF-07	Total	ug/kg	159	133	84%	22.9315	22.9377	22.9439	22.8960	22.8960
Sculpin	Forebay	SF-08	Total	ug/kg	159	131	82%	26.1371	26.1439	26.1507	26.0760	26.0760
Sculpin	Forebay	SF-09	Total	ug/kg	159	123	77%	12.2765	12.2835	12.2905	12.2748	12.2748
Sculpin	Forebay	SF-10	Total	ug/kg	159	130	82%	23.0658	23.0725	23.0793	23.0550	23.0550
Sculpin	Forebay	SF-11	Total	ug/kg	159	124	78%	24.1122	24.1225	24.1329	24.1680	24.1329
Sculpin	Forebay	SF-12	Total	ug/kg	159	128	81%	39.6412	39.6596	39.6779	39.5910	39.5910
Sculpin	Forebay	SF-13	Total	ug/kg	159	117	74%	9.8654	9.8839	9.9025	9.8739	9.8739
Sculpin	Forebay	SF-14	Total	ug/kg	159	127	80%	35.3683	35.3792	35.3901	35.2980	35.2980
Sculpin	Forebay	SF-15	Total	ug/kg	159	108	68%	19.4409	19.5325	19.6240	19.3980	19.3980
Sculpin	Forebay	SF-16	Total	ug/kg	159	128	81%	35.5799	35.5899	35.5999	35.6160	35.5999
Sculpin	Forebay	SF-17	Total	ug/kg	159	125	79%	40.6241	40.6405	40.6570	40.7040	40.6570
Sculpin	Other	P110	Total	ug/kg	159	112	70%	8.1340	8.1510	8.1680	8.1408	8.1408
Smallmouth Bass	Reference	R01	Total	ug/kg	159	106	67%	47.7134	47.8705	48.0277	47.8590	47.8590
Smallmouth Bass	Reference	R02	Total	ug/kg	159	112	70%	41.7646	41.9358	42.1071	41.8170	41.8170
Smallmouth Bass	Reference	R03	Total	ug/kg	159	96	60%	44.6252	44.8868	45.1484	44.6790	44.6790
Smallmouth Bass	Reference	R04	Total	ug/kg	159	95	60%	22.0679	22.2896	22.5113	22.1010	22.1010
Smallmouth Bass	Reference	R05	Total	ug/kg	159	118	74%	163.5171	163.8233	164.1295	163.6110	163.6110
Smallmouth Bass	Reference	R06	Total	ug/kg	159	100	63%	44.2532	44.6093	44.9655	44.3610	44.3610
Smallmouth Bass	Reference	R07	Total	ug/kg	159	98	62%	41.5362	41.7459	41.9557	41.6580	41.6580
Smallmouth Bass	Reference	R10	Total	ug/kg	159	140	88%	117.0512	117.0581	117.0650	117.0240	117.0240
Smallmouth Bass	Reference	R11	Total	ug/kg	159	138	87%	35.7970	35.8007	35.8043	35.7750	35.7750
Smallmouth Bass	Reference	R12	Total	ug/kg	159	134	84%	39.7672	39.7718	39.7765	39.7500	39.7500
Smallmouth Bass	Reference	R13	Total	ug/kg	159	143	90%	69.0534	69.0565	69.0595	69.0060	69.0060
Smallmouth Bass	Reference	R14	Total	ug/kg	159	136	86%	50.1909	50.1949	50.1989	50.2440	50.1989
Smallmouth Bass	Reference	R15	Total	ug/kg	159	137	86%	43.1015	43.1060	43.1105	43.0890	43.0890
Smallmouth Bass	Reference	R16	Total	ug/kg	159	137	86%	498.8557	498.8649	498.8741	498.7830	498.7830
Smallmouth Bass	Reference	R17	Total	ug/kg	159	141	89%	44.2266	44.2303	44.2340	44.2020	44.2020
Smallmouth Bass	Reference	R18	Total	ug/kg	159	135	85%	60.5882	60.6034	60.6185	60.5790	60.5790
Smallmouth Bass	Reference	R19	Total	ug/kg	159	134	84%	77.8704	77.8783	77.8862	77.9100	77.8862
Smallmouth Bass	Reference	R20	Total	ug/kg	159	131	82%	52.9297	52.9442	52.9588	52.9470	52.9470
Smallmouth Bass	Reference	R21	Total	ug/kg	159	131	82%	52.8095	52.8196	52.8297	52.7880	52.7880
Smallmouth Bass	Forebay	100	Total	ug/kg	159	137	86%	33.7364	33.7395	33.7427	33.7080	33.7080
Smallmouth Bass	Forebay	101	Total	ug/kg	159	146	92%	1440.1098	1440.1202	1440.1306	1440.0630	1440.0630
Smallmouth Bass	Forebay	102	Total	ug/kg	159	131	82%	325.1847	325.2013	325.2180	325.1550	325.1550
Smallmouth Bass	Forebay	103	Total	ug/kg	159	139	87%	1305.4760	1305.4941	1305.5122	1305.5490	1305.5122
Smallmouth Bass	Forebay	104	Total	ug/kg	159	145	91%	32.1574	32.1638	32.1701	32.1180	32.1180
Smallmouth Bass	Forebay	200	Total	ug/kg	159	142	89%	879.1798	879.1880	879.1962	879.1110	879.1110
Smallmouth Bass	Forebay	201	Total	ug/kg	159	142	89%	96.6697	96.6741	96.6784	96.6720	96.6720
Smallmouth Bass	Forebay	202	Total	ug/kg	159	141	89%	42.0157	42.0183	42.0209	41.9760	41.9760
Smallmouth Bass	Forebay	203	Total	ug/kg	159	144	91%	137.0552	137.0602	137.0653	137.0580	137.0580
Smallmouth Bass	Forebay	204	Total	ug/kg	159	143	90%	59.3803	59.3837	59.3872	59.3070	59.3070
Smallmouth Bass	Forebay	205	Total	ug/kg	159	144	91%	1733.6659	1733.6791	1733.6922	1733.1000	1733.1000
Smallmouth Bass	Forebay	207	Total	ug/kg	159	142	89%	69.7090	69.7128	69.7167	69.6420	69.6420
Smallmouth Bass	Forebay	208	Total	ug/kg	159	139	87%	148.8190	148.8257	148.8324	148.8240	148.8240
Smallmouth Bass	Forebay	209	Total	ug/kg	159	140	88%	19309.3807	19309.7193	19310.0579	19302.6000	19302.6000
Smallmouth Bass	Forebay	210	Total	ug/kg	159	145	91%	54.7992	54.8091	54.8191	54.8550	54.8191
Smallmouth Bass	Forebay	402	Total	ug/kg	159	147	92%	1192.7822	1192.8669	1192.9516	1192.8180	1192.8180
Smallmouth Bass	Forebay	403	Total	ug/kg	159	142	89%	26504.4301	26507.4819	26510.5336	26505.3000	26505.3000
Smallmouth Bass	Forebay	405	Total	ug/kg	159	142	89%	2482.1407	2482.2499	2482.3591	2481.9900	2481.9900
Smallmouth Bass	Forebay	406	Total	ug/kg	159	140	88%	40.7778	40.7861	40.7944	40.7040	40.7040
Surface Water	Reference	P57	Column	ug/L	159	79	50%	1.5341E-04	1.5392E-04	1.5444E-04	1.5363E-04	1.5363E-04
Surface Water	Reference	P57	Filter	ug/L	159	71	45%	2.4036E-05	2.4762E-05	2.5487E-05	2.4251E-05	2.4251E-05
Surface Water	Reference	P58	Column	ug/L	159	98	62%	1.0922E-04	1.0941E-04	1.0960E-04	1.0931E-04	1.0931E-04
Surface Water	Reference	P58	Filter	ug/L	159	78	49%	2.0978E-05	2.1527E-05	2.2077E-05	2.1150E-05	2.1150E-05
Surface Water	Reference	P59	Column	ug/L	159	78	49%	1.4923E-04	1.4968E-04	1.5013E-04	1.4938E-04	1.4938E-04
Surface Water	Reference	P59	Filter	ug/L	159	71	45%	2.2544E-05	2.3246E-05	2.3947E-05	2.2751E-05	2.2751E-05
Surface Water	Reference	P60	Column	ug/L	159	86	54%	1.4540E-04	1.4606E-04	1.4672E-04	1.4557E-04	1.4557E-04
Surface Water	Reference	P60	Filter	ug/L	159	82	52%	2.6497E-05	2.7069E-05	2.7640E-05	2.6698E-05	2.6698E-05
Surface Water	Reference	P61	Column	ug/L	159	90	57%	1.2263E-04	1.2288E-04	1.2312E-04	1.2273E-04	1.2273E-04
Surface Water	Reference	P61	Filter	ug/L	159	85	53%	2.5442E-05	2.5892E-05	2.6340E-05	2.5599E-05	2.5599E-05
Surface Water	Forebay	P52	Column	ug/L	159	71	45%	9.7480E-05	9.8263E-05	9.9044E-05	9.7709E-05	9.7709E-05
Surface Water	Forebay	P52	Filter	ug/L	159	70	44%	1.4492E-05	1.5376E-05	1.6260E-05	1.4750E-05	1.4750E-05
Surface Water	Forebay	P53	Column	ug/L	159	83	52%	1.5308E-04	1.5364E-04	1.5419E-04	1.5326E-04	1.5326E-04
Surface Water	Forebay	P53	Filter	ug/L	159	106	67%	5.5479E-05	5.5946E-05	5.6412E-05	5.5671E-05	5.5671E-05
Surface Water	Forebay	P54	Column	ug/L	159	73	46%	9.5450E-05	9.6191E-05	9.6932E-05	9.5656E-05	9.5656E-05
Surface Water	Forebay	P54	Filter	ug/L	159	103	65%	6.0943E-05	6.1530E-05	6.2116E-05	6.1161E-05	6.1161E-05
Surface Water	Forebay	P55	Column	ug/L	159	90	57%	1.5427E-04	1.5486E-04	1.5546E-04	1.5446E-04	1.5446E-04
Surface Water	Forebay	P55	Filter	ug/L	159	74	47%	2.2402E-05	2.3150E-05	2.3899E-05	2.2619E-05	2.2619E-05
Surface Water	Forebay	P56	Column	ug/L	159	63	40%	1.3763E-04	1.3870E-04	1.3977E-04	1.3790E-04	1.3790E-04
Surface Water	Forebay	P56	Filter	ug/L	159	88	55%	2.6282E-05	2.6730E-05	2.7178E-05	2.6439E-05	2.6439E-05

Notes:

EMPC = data flagged as estimated maximum potential concentration

ND = non-detect results

RDL = reported detection limit

ug/kg = micrograms per kilogram

ug/L = micrograms per liter

Table H-1
Landfill AOPC Soil (0-3 ft bgs) PAH Analysis Results
(Page 1 of 4)

Site ID	BIL01SSI		BIL02SSI		BIL03SSI		BIL04SSI		BIL05SSI		BIL06SSI		BIL09SSI		BIL10SSI		BIL11SSI	
Sample ID	990920BIL01SS		990920BIL02SS		990920BIL03SS		990920BIL04SS		990920BIL05SS		990920BIL06SS		990920BIL09SS		990920BIL10SS		990921BIL11SS	
Sample Date	9/20/1999		9/20/1999		9/20/1999		9/20/1999		9/20/1999		9/20/1999		9/20/1999		9/20/1999		9/21/1999	
Sample Depth (feet bgs)	0-0.33		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs																		
2-Methylnaphthalene	180 U	180 U	170 U	170 U	180 U	180 U	**57.0 J**	**57.0 J**	180 U	180 U	**76.0 J**	**76.0 J**	180 U	180 U	180 U	180 U	190 U	190 U
Acenaphthene	180 U	180 U	**42.0 J**	**42.0 J**	**53.0 J**	**53.0 J**	**2,600 J**	**2,600 J**	**500**	**500**	**171 J**	**171 J**	180 U	180 U	180 U	180 U	**140 J**	**140 J**
Acenaphthylene	180 U	180 U	170 U	170 U	180 U	180 U	**74.0 J**	**74.0 J**	180 U	180 U	**22.0 J**	**22.0 J**	180 U	180 U	180 U	180 U	190 U	190 U
Anthracene	**12.0 J**	**12.0 J**	**18.0 J**	**18.0 J**	**110 J**	**110 J**	**2,700**	**2,700**	**460**	**460**	**176 J**	**176 J**	180 U	180 U	180 U	180 U	**100 J**	**100 J**
Fluorene	180 U	180 U	170 U	170 U	**47.0 J**	**47.0 J**	**1,200**	**1,200**	**170 J**	**170 J**	**145 J**	**145 J**	180 U	180 U	180 U	180 U	**67.0 J**	**67.0 J**
Naphthalene	180 U	180 U	170 U	170 U	180 U	180 U	**100 J**	**100 J**	**19.0 J**	**19.0 J**	**360**	**360**	180 U	180 U	180 U	180 U	190 U	190 U
Phenanthrene	**39.0 J**	**39.0 J**	**68.0 J**	**68.0 J**	**300**	**300**	**12,000**	**12,000**	**1,900**	**1,900**	**1,230**	**1,230**	**40.0 J**	**40.0 J**	**36.0 J**	**36.0 J**	**370**	**370**
Total LPAHs (full MDL/MRL)	**771 J**	**771 J**	**638 J**	**638 J**	**870 J**	**870 J**	**18,674 J**	**18,674 J**	**3,229 J**	**3,229 J**	**2,105 J**	**2,105 J**	**940 J**	**940 J**	**936 J**	**936 J**	**1,057 J**	**1,057 J**
Total LPAHs (KM)	**153 J**	**153 J**	**256 J**	**256 J**	**650 J**	**650 J**	**18,672 J**	**18,672 J**	**3,143 J**	**3,143 J**	**2,105 J**	**2,105 J**	-	-	-	-	**881 J**	**881 J**
Total LPAHs (KM, capped)	**153 J**	**153 J**	**256.02 J**	**256.02 J**	**650 J**	**650 J**	**18,674 J**	**18,674 J**	**3,143 J**	**3,143 J**	**2,105 J**	**2,105 J**	**940 J**	**940 J**	**936 J**	**936 J**	**881 J**	**881 J**
HPAHs																		
Benzo(a)anthracene	**98.0 J**	**98.0 J**	**130 J**	**130 J**	**1,600**	**1,600**	**32,000**	**32,000**	**2,200**	**2,200**	**1,400 J**	**1,400 J**	**82.0 J**	**82.0 J**	**60.0 J**	**60.0 J**	**400**	**400**
Benzo(a)pyrene	**140 J**	**140 J**	**160 J**	**160 J**	**1,800**	**1,800**	**33,000**	**33,000**	**2,200**	**2,200**	**1,400 J**	**1,400 J**	**100 J**	**100 J**	**70.0 J**	**70.0 J**	**420**	**420**
Benzo(b)fluoranthene	**110 J**	**110 J**	**170 J**	**170 J**	**2,000**	**2,000**	**65,000**	**65,000**	**340 J**	**340 J**	**2,350**	**2,350**	**82.0 J**	**82.0 J**	**58.0 J**	**58.0 J**	**66.0 J**	**66.0 J**
Benzo(g,h,i)perylene	**71.0 J**	**71.0 J**	**150 J**	**150 J**	**790**	**790**	**18,000**	**18,000**	**1,800**	**1,800**	**1,250 J**	**1,250 J**	**82.0 J**	**82.0 J**	**51.0 J**	**51.0 J**	**290**	**290**
Benzo(k)fluoranthene	**110 J**	**110 J**	**100 J**	**100 J**	**1,000**	**1,000**	**65,000**	**65,000**	**340 J**	**340 J**	**2,350**	**2,350**	**89.0 J**	**89.0 J**	**64.0 J**	**64.0 J**	**66.0 J**	**66.0 J**
Benzofluoranthenes, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	**120 J**	**120 J**	**160 J**	**160 J**	**1,600**	**1,600**	**32,000**	**32,000**	**1,700**	**1,700**	**1,650 J**	**1,650 J**	**100 J**	**100 J**	**79.0 J**	**79.0 J**	**420**	**420**
Dibenz(a,h)anthracene	**37.0 J**	**37.0 J**	170 U	170 U	**450**	**450**	**9,900**	**9,900**	**540 J**	**540 J**	1,800 U	1,800 U	**32.0 J**	**32.0 J**	**24.0 J**	**24.0 J**	**150 J**	**150 J**
Fluoranthene	**130 J**	**130 J**	**160 J**	**160 J**	**1,600**	**1,600**	**54,000**	**54,000**	**3,300**	**3,300**	**795**	**795**	**120 J**	**120 J**	**88.0 J**	**88.0 J**	**700**	**700**
Indeno(1,2,3-cd)pyrene	**73.0 J**	**73.0 J**	**130 J**	**130 J**	**820**	**820**	**19,000**	**19,000**	**1,700**	**1,700**	**1,180 J**	**1,180 J**	**74.0 J**	**74.0 J**	**48.0 J**	**48.0 J**	**300**	**300**
Pyrene	**160 J**	**160 J**	**210**	**210**	**1,400**	**1,400**	**40,000**	**40,000**	**3,200**	**3,200**	**2,500 J**	**2,500 J**	**130 J**	**130 J**	**98.0 J**	**98.0 J**	**640**	**640**
Total HPAHs (full MDL/MRL)	**1,049 J**	**1,049 J**	**1,540 J**	**1,540 J**	**13,060**	**13,060**	**367,900**	**367,900**	**17,320 J**	**17,320 J**	**16,670 J**	**16,670 J**	**891 J**	**891 J**	**640 J**	**640 J**	**3,452 J**	**3,452 J**
Total HPAHs (KM)	**1,049 J**	**1,049 J**	**1,511 J**	**1,511 J**	**13,060**	**13,060**	**367,900**	**367,900**	**17,320 J**	**17,320 J**	**16,150 J**	**16,150 J**	**891 J**	**891 J**	**640 J**	**640 J**	**3,452 J**	**3,452 J**
Total HPAHs (KM-capped)	**1,049 J**	**1,049 J**	**1,511 J**	**1,511 J**	**13,060**	**13,060**	**367,900**	**367,900**	**17,320 J**	**17,320 J**	**16,150 J**	**16,150 J**	**891 J**	**891 J**	**640 J**	**640 J**	**3,452 J**	**3,452 J**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
- = Not Analyzed

J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-1
Landfill AOPC Soil (0-3 ft bgs) PAH Analysis Results
(Page 2 of 4)

Site ID	BIL12SSI		BIL13SSI*		BIL17		BIL18		BIL22*		BIL28TPM		BIL29TPM		BIL01USE		BIL02USE	
Sample ID	990921BIL12SS		000413BIL13SS		011016BIL17SS		011016BIL18SS		011016BIL22SS		011017BIL28TPM		011017BIL29TPM		070410BIL01SS		070410BIL02SS	
Sample Date	9/21/1999		4/13/2000		10/16/2001		10/16/2001		10/16/2001		10/17/2001		10/17/2001		4/10/2007		4/10/2007	
Sample Depth (feet bgs)	0-0.5		0-0.5		1		2		3		0-10		0-10		0.5		0.5	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs																		
2-Methylnaphthalene	180 U	180 U	49.8 U	49.8 U	**37.5**	**37.5**	**43.4**	**43.4**	2.22 U	14.2 U	**1,530**	**1,530**	**625**	**625**	20.0 U	20.0 U	20.0 U	20.0 U
Acenaphthene	180 U	180 U	49.8 U	49.8 U	**323**	**323**	**2,530**	**2,530**	**576**	**576**	83.3 U	168 U	**168**	**168**	**16.0 J**	**16.0 J**	**23.0**	**23.0**
Acenaphthylene	180 U	180 U	49.8 U	49.8 U	**78.1**	**78.1**	**111**	**111**	**51.4**	**51.4**	73.4 U	168 U	66.4 U	152 U	20.0 U	20.0 U	20.0 U	20.0 U
Anthracene	180 U	180 U	49.8 U	49.8 U	**773**	**773**	**8,440**	**8,440**	**1,780**	**1,780**	**1,750**	**1,750**	**503**	**503**	**35.0**	**35.0**	**65.0**	**65.0**
Fluorene	180 U	180 U	49.8 U	49.8 U	**244**	**244**	**1,610**	**1,610**	**370**	**370**	78.6 U	168 U	71.1 U	152 U	20.0 U	20.0 U	**12.0 J**	**12.0 J**
Naphthalene	180 U	180 U	49.8 U	49.8 U	**78.1**	**78.1**	**176**	**176**	**47.8**	**47.8**	**791**	**791**	**823**	**823**	20.0 U	20.0 U	20.0 U	20.0 U
Phenanthrene	**13.0 J**	**13.0 J**	49.8 U	49.8 U	**2,910**	**2,910**	**21,900**	**21,900**	**4,700**	**4,700**	**5,020**	**5,020**	**1,480**	**1,480**	**180**	**180**	**300**	**300**
Total LPAHs (full MDL/MRL)	**913 J**	**913 J**	299 U	299 U	**4,406**	**4,406**	**34,767**	**34,767**	**7,531 J**	**7,531 J**	**7,796 J**	**8,065 J**	**3,112 J**	**3,278 J**	**291 J**	**291 J**	**440 J**	**440 J**
Total LPAHs (KM)	-	-	-	-	**4,406**	**4,406**	**34,770**	**34,770**	**7,530 J**	**7,530 J**	**7,782 J**	**8,064 J**	**3,107 J**	**3,278 J**	**279 J**	**279 J**	**424 J**	**424 J**
Total LPAHs (KM, capped)	**913 J**	**913 J**	299 U	299 U	**4,406**	**4,406**	**34,767**	**34,767**	**7,531 J**	**7,531 J**	**7,782 J**	**8,064 J**	**3,107 J**	**3,278 J**	**279 J**	**279 J**	**424 J**	**424 J**
HPAHs																		
Benzo(a)anthracene	**29.0 J**	**29.0 J**	49.8 U	49.8 U	**9,620**	**9,620**	**28,200**	**28,200**	**9,420**	**9,420**	**9,780**	**9,780**	92.9 U	305 U	**530**	**530**	**960**	**960**
Benzo(a)pyrene	**28.0 J**	**28.0 J**	49.8 U	49.8 U	**10,500**	**10,500**	**34,000**	**34,000**	**7,700**	**7,700**	**7,100**	**7,100**	35.5 U	152 U	**600**	**600**	**1,200**	**1,200**
Benzo(b)fluoranthene	**34.0 J**	**34.0 J**	49.8 U	49.8 U	-	-	-	-	-	-	-	-	-	-	**680**	**680**	**1,200**	**1,200**
Benzo(g,h,i)perylene	**20.0 J**	**20.0 J**	49.8 U	49.8 U	**6,150**	**6,150**	**17,000**	**17,000**	**3,020**	**3,020**	27.8 U	168 U	25.1 U	152 U	**280**	**280**	**530**	**530**
Benzo(k)fluoranthene	**40.0 J**	**40.0 J**	49.8 U	49.8 U	-	-	-	-	-	-	-	-	-	-	**450**	**450**	**1,100**	**1,100**
Benzofluoranthenes, Total	-	-	-	-	**14,700**	**14,700**	**31,300**	**31,300**	**8,490**	**8,490**	**5,100**	**5,100**	**1,080**	**1,080**	-	-	-	-
Chrysene	**62.0 J**	**62.0 J**	49.8 U	49.8 U	**8,430**	**8,430**	**35,300 J**	**35,300 J**	**8,420**	**8,420**	**8,210**	**8,210**	**2,060**	**2,060**	**670**	**670**	**1,200**	**1,200**
Dibenz(a,h)anthracene	**18.0 J**	**18.0 J**	49.8 U	49.8 U	**695**	**695**	**1,940**	**1,940**	**573**	**573**	39.2 U	168 U	35.5 U	152 U	**71.0**	**71.0**	**150**	**150**
Fluoranthene	**42.0 J**	**42.0 J**	49.8 U	49.8 U	**19,400**	**19,400**	**48,300**	**48,300**	**17,800**	**17,800**	**13,600**	**13,600**	71.1 U	152 U	**1,300**	**1,300**	**2,100**	**2,100**
Indeno(1,2,3-cd)pyrene	**18.0 J**	**18.0 J**	49.8 U	49.8 U	**6,990**	**6,990**	**20,000**	**20,000**	**2,030**	**2,030**	39.2 U	168 U	35.5 U	152 U	**270**	**270**	**510**	**510**
Pyrene	**43.0 J**	**43.0 J**	49.8 UJ	49.8 UJ	**22,900**	**22,900**	**67,100**	**67,100**	**24,200**	**24,200**	**15,500**	**15,500**	**2,540**	**2,540**	**1,200**	**1,200**	**2,400**	**2,400**
Total HPAHs (full MDL/MRL)	**334 J**	**334 J**	498 UJ	498 UJ	**84,685**	**84,685**	**251,840 J**	**251,840 J**	**73,156**	**73,156**	**54,296 J**	**54,694 J**	**4,896 J**	**5,665 J**	**6,051**	**6,051**	**11,350**	**11,350**
Total HPAHs (KM)	**334 J**	**334 J**	-	-	**84,688**	**84,688**	**251,840 J**	**251,840 J**	**73,152**	**73,152**	**54,272 J**	**54,696 J**	**4,750 J**	**5,512 J**	**6,051**	**6,051**	**11,350**	**11,350**
Total HPAHs (KM-capped)	**334 J**	**334 J**	498 UJ	498 UJ	**84,685**	**84,685**	**251,840** J	**251,840** J	**73,156**	**73,156**	**54,272 J**	**54,694 J**	**4,750 J**	**5,512 J**	**6,051**	**6,051**	**11,350**	**11,350**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
- = Not Analyzed

J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-1
Landfill AOPC Soil (0-3 ft bgs) PAH Analysis Results
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Site ID	BIL03USE		BIL04USE		BIL05USE		BIL06USE		BIL07USE		BIL08USE		BIL09USE		L-01		L-01	
Sample ID	070410BIL03SS		070410BIL04SS		070410BIL05SS		070410BIL06SS		070410BIL07SS		070410BIL08SS		070410BIL09SS		090129-L-L1-0-1So		090129-L-L1-1-3So	
Sample Date	4/10/2007		4/10/2007		4/10/2007		4/10/2007		4/10/2007		4/10/2007		4/10/2007		1/29/2009		1/29/2009	
Sample Depth (feet bgs)	0.5		0.5		0.5		0.5		0.5		0.5		0.5		0-1		1-3	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs																		
2-Methylnaphthalene	20.0 U	20.0 U	**11.0 J**	**11.0 J**	20.0 U	20.0 U	20.0 U	20.0 U	59.0 U	59.0 U	20.0 U	20.0 U	20.0 U	20.0 U	-	-	-	-
Acenaphthene	**15.0 J**	**15.0 J**	**170**	**170**	20.0 U	20.0 U	**24.0**	**24.0**	**270**	**270**	**46.0**	**46.0**	20.0 U	20.0 U	**66.0**	**66.0**	**170**	**170**
Acenaphthylene	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	59.0 U	59.0 U	20.0 U	20.0 U	20.0 U	20.0 U	**3.40**	**3.40**	**12.0**	**12.0**
Anthracene	**30.0**	**30.0**	**180**	**180**	**15.0 J**	**15.0 J**	**34.0**	**34.0**	**740**	**740**	**110**	**110**	**30.0**	**30.0**	**99.0**	**99.0**	**400**	**400**
Fluorene	20.0 U	20.0 U	**73.0**	**73.0**	20.0 U	20.0 U	**13.0 J**	**13.0 J**	**140**	**140**	**24.0**	**24.0**	**10.0 J**	**10.0 J**	**33.0**	**33.0**	**99.0**	**99.0**
Naphthalene	20.0 U	20.0 U	**20.0**	**20.0**	20.0 U	20.0 U	20.0 U	20.0 U	59.0 U	59.0 U	20.0 U	20.0 U	20.0 U	20.0 U	**5.00**	**5.00**	**22.0**	**22.0**
Phenanthrene	**200**	**200**	**1,500**	**1,500**	**66.0**	**66.0**	**180**	**180**	**3,000**	**3,000**	**550**	**550**	**160**	**160**	**350**	**350**	**1,500**	**1,500**
Total LPAHs (full MDL/MRL)	**305 J**	**305 J**	**1,963 J**	**1,963 J**	**161 J**	**161 J**	**291 J**	**291 J**	**4,268 J**	**4,268 J**	**770 J**	**770 J**	**260 J**	**260 J**	**556**	**556**	**2,203**	**2,203**
Total LPAHs (KM)	**290 J**	**290 J**	**1,963 J**	**1,963 J**	**141 J**	**141 J**	**277 J**	**277 J**	**4,268 J**	**4,268 J**	**770 J**	**770 J**	**230 J**	**230 J**	**556**	**556**	**2,203**	**2,203**
Total LPAHs (KM, capped)	**290 J**	**290 J**	**1,963 J**	**1,963 J**	**141 J**	**141 J**	**277 J**	**277 J**	**4,268 J**	**4,268 J**	**770 J**	**770 J**	**230 J**	**230 J**	**556**	**556**	**2,203**	**2,203**
HPAHs																		
Benzo(a)anthracene	**330**	**330**	**1,000**	**1,000**	**78.0**	**78.0**	**250**	**250**	**4,500**	**4,500**	**1,000**	**1,000**	**180**	**180**	**690**	**690**	**4,500**	**4,500**
Benzo(a)pyrene	**360**	**360**	**1,600**	**1,600**	**85.0**	**85.0**	**240**	**240**	**6,200**	**6,200**	**1,300**	**1,300**	**140**	**140**	**820**	**820**	**5,800**	**5,800**
Benzo(b)fluoranthene	**420**	**420**	**1,600**	**1,600**	**110**	**110**	**310**	**310**	**8,200**	**8,200**	**1,500**	**1,500**	**170**	**170**	**990**	**990**	**7,100**	**7,100**
Benzo(g,h,i)perylene	**210**	**210**	**870**	**870**	**67.0**	**67.0**	**160**	**160**	**1,800**	**1,800**	**480**	**480**	**75.0**	**75.0**	**460**	**460**	**3,300**	**3,300**
Benzo(k)fluoranthene	**310**	**310**	**1,200**	**1,200**	**77.0**	**77.0**	**220**	**220**	**2,500**	**2,500**	**990**	**990**	**130**	**130**	**310**	**310**	**2,400**	**2,400**
Benzofluoranthenes, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	**450**	**450**	**1,300**	**1,300**	**96.0**	**96.0**	**280**	**280**	**5,900**	**5,900**	**1,400**	**1,400**	**190**	**190**	**790**	**790**	**5,000**	**5,000**
Dibenz(a,h)anthracene	**55.0**	**55.0**	**240**	**240**	**29.0**	**29.0**	**76.0**	**76.0**	**730**	**730**	**160**	**160**	**18.0 J**	**18.0 J**	**130**	**130**	**970**	**970**
Fluoranthene	**580**	**580**	**2,700**	**2,700**	**150**	**150**	**460**	**460**	**14,000**	**14,000**	**2,800**	**2,800**	**300**	**300**	**1,200**	**1,200**	**7,700**	**7,700**
Indeno(1,2,3-cd)pyrene	**200**	**200**	**780**	**780**	**58.0**	**58.0**	**160**	**160**	**2,100**	**2,100**	**530**	**530**	**74.0**	**74.0**	**620**	**620**	**4,500**	**4,500**
Pyrene	**730**	**730**	**3,100**	**3,100**	**130**	**130**	**360**	**360**	**9,100**	**9,100**	**2,900**	**2,900**	**240 J**	**240 J**	**1,200**	**1,200**	**7,500**	**7,500**
Total HPAHs (full MDL/MRL)	**3,645**	**3,645**	**14,390**	**14,390**	**880**	**880**	**2,516**	**2,516**	**55,030**	**55,030**	**13,060**	**13,060**	**1,517 J**	**1,517 J**	**7,210**	**7,210**	**48,770**	**48,770**
Total HPAHs (KM)	**3,645**	**3,645**	**14,390**	**14,390**	**880**	**880**	**2,516**	**2,516**	**55,030**	**55,030**	**13,060**	**13,060**	**1,517 J**	**1,517 J**	**7,210**	**7,210**	**48,770**	**48,770**
Total HPAHs (KM-capped)	**3,645**	**3,645**	**14,390**	**14,390**	**880**	**880**	**2,516**	**2,516**	**55,030**	**55,030**	**13,060**	**13,060**	**1,517 J**	**1,517 J**	**7,210**	**7,210**	**48,770**	**48,770**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
- = Not Analyzed

J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-1
Landfill AOPC Soil (0-3 ft bgs) PAH Analysis Results
(Page 4 of 4)

Site ID	L-02		L-02		L-03		L-03		L-04*		L-04	
Sample ID	090129-L-L2-0-1So		090129-L-L2-1-3So		090129-L-L3-0-1So		090129-L-L3-1-3So		090129-L-L4-0-1So		090129-L-L4-1-3So	
Sample Date	1/29/2009		1/29/2009		1/29/2009		1/29/2009		1/29/2009		1/29/2009	
Sample Depth (feet bgs)	0-1		1-3		0-1		1-3		0-1		1-3	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs												
2-Methylnaphthalene	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	**220**	**220**	**1,900**	**1,900**	**700**	**700**	**360**	**360**	**1,160**	**1,160**	**420**	**420**
Acenaphthylene	**15.0**	**15.0**	**41.0**	**41.0**	**13.0**	**13.0**	**15.0**	**15.0**	**19.0**	**19.0**	**13.0**	**13.0**
Anthracene	**650**	**650**	**2,100**	**2,100**	**880**	**880**	**900**	**900**	**1,070**	**1,070**	**740**	**740**
Fluorene	**130**	**130**	**630**	**630**	**340**	**340**	**210**	**210**	**510**	**510**	**240**	**240**
Naphthalene	**14.0**	**14.0**	**140**	**140**	**49.0**	**49.0**	**49.0**	**49.0**	**79.0**	**79.0**	**57.0**	**57.0**
Phenanthrene	**2,000**	**2,000**	**7,400**	**7,400**	**3,400**	**3,400**	**2,800**	**2,800**	**4,200**	**4,200**	**2,800**	**2,800**
Total LPAHs (full MDL/MRL)	**3,029**	**3,029**	**12,211**	**12,211**	**5,382**	**5,382**	**4,334**	**4,334**	**7,043**	**7,043**	**4,270**	**4,270**
Total LPAHs (KM)	**3,029**	**3,029**	**12,210**	**12,210**	**5,382**	**5,382**	**4,334**	**4,334**	**7,044**	**7,044**	**4,270**	**4,270**
Total LPAHs (KM, capped)	**3,029**	**3,029**	**12,211**	**12,211**	**5,382**	**5,382**	**4,334**	**4,334**	**7,043**	**7,043**	**4,270**	**4,270**
HPAHs												
Benzo(a)anthracene	**4,100**	**4,100**	**11,000**	**11,000**	**4,500**	**4,500**	**4,800**	**4,800**	**4,500**	**4,500**	**4,800**	**4,800**
Benzo(a)pyrene	**4,700**	**4,700**	**16,000**	**16,000**	**5,900**	**5,900**	**5,800**	**5,800**	**5,800**	**5,800**	**6,200**	**6,200**
Benzo(b)fluoranthene	**5,700**	**5,700**	**16,000**	**16,000**	**6,400**	**6,400**	**6,500**	**6,500**	**6,500**	**6,500**	**7,200**	**7,200**
Benzo(g,h,i)perylene	**2,500**	**2,500**	**9,500**	**9,500**	**3,300**	**3,300**	**3,100**	**3,100**	**3,250**	**3,250**	**3,500**	**3,500**
Benzo(k)fluoranthene	**2,000**	**2,000**	**5,900**	**5,900**	**2,300**	**2,300**	**2,400**	**2,400**	**2,300**	**2,300**	**2,500**	**2,500**
Benzofluoranthenes, Total	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	**4,900**	**4,900**	**14,000**	**14,000**	**5,000**	**5,000**	**5,400**	**5,400**	**5,150**	**5,150**	**5,600**	**5,600**
Dibenz(a,h)anthracene	**710**	**710**	**2,300**	**2,300**	**1,000**	**1,000**	**900**	**900**	**900**	**900**	**1,100**	**1,100**
Fluoranthene	**7,000**	**7,000**	**21,000**	**21,000**	**8,200**	**8,200**	**8,700**	**8,700**	**8,700**	**8,700**	**8,600**	**8,600**
Indeno(1,2,3-cd)pyrene	**3,500**	**3,500**	**13,000**	**13,000**	**4,600**	**4,600**	**4,400**	**4,400**	**4,450**	**4,450**	**4,900**	**4,900**
Pyrene	**6,700**	**6,700**	**21,000**	**21,000**	**7,900**	**7,900**	**9,400**	**9,400**	**8,150**	**8,150**	**8,600**	**8,600**
Total HPAHs (full MDL/MRL)	**41,810**	**41,810**	**129,700**	**129,700**	**49,100**	**49,100**	**51,400**	**51,400**	**49,700**	**49,700**	**53,000**	**53,000**
Total HPAHs (KM)	**41,810**	**41,810**	**129,700**	**129,700**	**49,100**	**49,100**	**51,400**	**51,400**	**49,700**	**49,700**	**53,000**	**53,000**
Total HPAHs (KM-capped)	**41,810**	**41,810**	**129,700**	**129,700**	**49,100**	**49,100**	**51,400**	**51,400**	**49,700**	**49,700**	**53,000**	**53,000**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
- = Not Analyzed

J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-2
Sandblast Area AOPC Soil (0-3 ft bgs) PAH Analysis Results
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Site ID	DSA01		DSA02		DSA03		DSA04		DSA05		DSA06		DSA07		DSA08		DSA09		DSA10	
Sample ID	011204DSA01SS		011204DSA02SS		011204DSA03SS		011204DSA04SS		011204DSA05SS		011204DSA06SS		011204DSA07SS		011204DSA08SS		011204DSA09SS		011204DSA10SS	
Sample Date	12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001	
Sample Depth (feet bgs)	0		0		0		0		0		0		0		0		0		0	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs																				
2-Methylnaphthalene	0.191 U	1.23 U	0.183 U	1.17 U	0.205 U	1.31 U	0.221 U	1.41 U	0.217 U	1.39 U	**2.98**	**2.98**	0.203 U	1.30 U	0.191 U	1.22 U	0.225 U	1.44 U	2.28 U	14.6 U
Acenaphthene	0.607 U	1.23 U	**6.44**	**6.44**	0.649 U	1.31 U	0.700 U	1.41 U	**4.46**	**4.46**	0.738 U	1.49 U	**2.60**	**2.60**	**2.81**	**2.81**	**15.4**	**15.4**	**29.3**	**29.3**
Acenaphthylene	0.535 U	1.23 U	0.510 U	1.17 U	**3.67**	**3.67**	0.616 U	1.41 U	0.607 U	1.39 U	0.650 U	1.49 U	0.567 U	1.30 U	0.533 U	1.22 U	0.629 U	1.44 U	6.38 U	14.6 U
Anthracene	**1.72**	**1.72**	**4.21**	**4.21**	**5.25**	**5.25**	0.356 U	1.41 U	**9.19**	**9.19**	**11.3**	**11.3**	**2.08**	**2.08**	**2.20**	**2.20**	**18.0**	**18.0**	**80.5**	**80.5**
Fluorene	0.573 U	1.23 U	**2.46**	**2.46**	**3.02**	**3.02**	0.660 U	1.41 U	**3.06**	**3.06**	**7.01**	**7.01**	**1.69**	**1.69**	**1.83**	**1.83**	**7.65**	**7.65**	**24.9**	**24.9**
Naphthalene	0.574 U	1.23 U	0.548 U	1.17 U	**1.70**	**1.70**	0.662 U	1.41 U	**1.95**	**1.95**	**4.17**	**4.17**	0.609 U	1.30 U	0.572 U	1.22 U	0.676 U	1.44 U	6.85 U	14.6 U
Phenanthrene	**5.64**	**5.64**	**19.4**	**19.4**	**21.8**	**21.8**	**5.80**	**5.80**	**31.3**	**31.3**	**49.8**	**49.8**	**11.3**	**11.3**	**13.6**	**13.6**	**59.0**	**59.0**	**345**	**345**
Total LPAHs (full MDL/MRL)	**9.65 J**	**12.3 J**	**33.6 J**	**34.9 J**	**36.1 J**	**36.8 J**	**8.79 J**	**12.9 J**	**50.6 J**	**51.4 J**	**73.7 J**	**75.3 J**	**18.8 J**	**20.3 J**	**21.5 J**	**22.9 J**	**101 J**	**103 J**	**493 J**	**509 J**
Total LPAHs (KM)	**9.50 J**	**12.3 J**	**33.5 J**	**34.8 J**	**36.1 J**	**36.8 J**	**-**	**-**	**50.6 J**	**51.3 J**	**73.6 J**	**75.2 J**	**18.8 J**	**20.3 J**	**21.5 J**	**22.9 J**	**101 J**	**103 J**	**492 J**	**509 J**
Total LPAHs (KM, capped)	**9.50 J**	**12.3 J**	**33.5 J**	**34.8 J**	**36.1 J**	**36.8 J**	**8.79 J**	**12.9 J**	**50.6 J**	**51.3 J**	**73.6 J**	**75.2 J**	**18.8 J**	**20.3 J**	**21.5 J**	**22.9 J**	**101 J**	**103 J**	**492 J**	**509 J**
HPAHs																				
Benzo(a)anthracene	0.749 U	2.45 U	**15.0**	**15.0**	**15.6**	**15.6**	**3.96**	**3.96**	**66.6**	**66.6**	**29.5**	**29.5**	**7.28**	**7.28**	**16.5**	**16.5**	**46.3**	**46.3**	**398**	**398**
Benzo(a)pyrene	**10.2**	**10.2**	**20.4**	**20.4**	**20.3**	**20.3**	**7.49**	**7.49**	**151**	**151**	**43.5**	**43.5**	**14.0**	**14.0**	**25.4**	**25.4**	**52.0**	**52.0**	**435**	**435**
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	0.202 U	1.23 U	**9.72**	**9.72**	0.216 U	1.31 U	0.233 U	1.41 U	**107**	**107**	0.246 U	1.49 U	**6.89**	**6.89**	**13.7**	**13.7**	**21.2**	**21.2**	**195**	**195**
Benzo(k)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
'Benzofluoranthenes, Total	**13.5**	**13.5**	**26.3**	**26.3**	**35.8**	**35.8**	**10.2**	**10.2**	**175**	**175**	**74.2**	**74.2**	**17.8**	**17.8**	**36.3**	**36.3**	**72.2**	**72.2**	**682**	**682**
Chrysene	**6.50**	**6.50**	**16.3**	**16.3**	**22.8**	**22.8**	**6.36**	**6.36**	**68.4**	**68.4**	**45.9**	**45.9**	**9.89**	**9.89**	**20.3**	**20.3**	**56.6**	**56.6**	**465**	**465**
Dibenz(a,h)anthracene	0.286 U	1.23 U	0.273 U	1.17 U	0.306 U	1.31 U	0.329 U	1.41 U	**25.8**	**25.8**	0.347 U	1.49 U	0.303 U	1.30 U	0.285 U	1.22 U	0.336 U	1.44 U	3.41 U	14.6 U
Fluoranthene	**8.47**	**8.47**	**31.6**	**31.6**	**35.4**	**35.4**	**10.0**	**10.0**	**75.9**	**75.9**	**62.9**	**62.9**	**19.0**	**19.0**	**27.2**	**27.2**	**98.2**	**98.2**	**806**	**806**
Indeno(1,2,3-cd)pyrene	0.286 U	1.23 U	**11.1**	**11.1**	**14.3**	**14.3**	**3.68**	**3.68**	**97.8**	**97.8**	0.347 U	1.49 U	**7.02**	**7.02**	**14.3**	**14.3**	**21.1**	**21.1**	**202**	**202**
Pyrene	**11.0**	**11.0**	**31.0**	**31.0**	**32.3**	**32.3**	**10.0**	**10.0**	**83.8**	**83.8**	**68.6**	**68.6**	**21.2**	**21.2**	**35.1**	**35.1**	**106**	**106**	**844**	**844**
Total HPAHs (full MDL/MRL)	**37.7 J**	**42.3 J**	**135 J**	**136 J**	**141 J**	**143 J**	**42.1 J**	**44.3 J**	**676**	**676**	**251 J**	**255 J**	**85.6 J**	**86.6 J**	**153 J**	**154 J**	**402 J**	**403 J**	**3348.41 J**	**3359.6 J**
Total HPAHs (KM)	**37.0 J**	**41.1 J**	**135 J**	**136 J**	**141 J**	**143 J**	**42.0 J**	**44.3 J**	**676**	**676**	**251 J**	**255 J**	**85.6 J**	**86.6 J**	**153 J**	**154 J**	**402 J**	**403 J**	**3348.8 J**	**3360 J**
Total HPAHs (KM-capped)	**37.0 J**	**41.1 J**	**135 J**	**136 J**	**141 J**	**143 J**	**42.0 J**	**44.3 J**	**676**	**676**	**251 J**	**255 J**	**85.6 J**	**86.6 J**	**153 J**	**154 J**	**402 J**	**403 J**	**3348.41 J**	**3359.6 J**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
- = Not Analyzed

J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-2
Sandblast Area AOPC Soil (0-3 ft bgs) PAH Analysis Results
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Site ID	DSA11*		DSA12*		SBB18		HA1*		HA2		HA3		HA4		HA5		HA9		HA10	
Sample ID	011204DSA11SS		011204DSA12SS		011205SBB20SS		041122SGA14SS		041122SGA16SS		041122SGA17SS		041122SGA21SS		041122SGA23SS		041123SGA28SS		041123SGA29SS	
Sample Date	12/4/2001		12/4/2001		12/5/2001		11/22/2004		11/22/2004		11/22/2004		11/22/2004		11/22/2004		11/23/2004		11/23/2004	
Sample Depth (feet bgs)	0		0		2.5		0.5		0.5		0.5		3		3		0.5		0.5	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs																				
2-Methylnaphthalene	**22.9**	**22.9**	**150**	**150**	**124 J**	**124 J**	**4.84 J**	**4.84 J**	**2.53 J**	**2.53 J**	**31.8**	**31.8**	0.657 U	2.53 U	0.651 U	2.50 U	**1.29 J**	**1.29 J**	0.539 U	2.07 U
Acenaphthene	**132**	**132**	**470**	**470**	**3,200 J**	**3,200 J**	**10.9**	**10.9**	**16.1**	**16.1**	**296**	**296**	**328**	**328**	0.642 U	2.50 U	**5.41**	**5.41**	0.531 U	2.07 U
Acenaphthylene	**27.6**	**27.6**	**87.7**	**87.7**	**295 J**	**295 J**	**4.33**	**4.33**	**4.65**	**4.65**	**54.7**	**54.7**	**9.14**	**9.14**	0.737 U	2.50 U	**1.39 J**	**1.39 J**	0.610 U	2.07 U
Anthracene	**304**	**304**	**822**	**822**	**2,040 J**	**2,040 J**	**14.7**	**14.7**	**21.3**	**21.3**	**832**	**832**	**447**	**447**	0.476 U	2.50 U	**5.03**	**5.03**	0.394 U	2.07 U
Fluorene	**94.6**	**94.6**	**462**	**462**	**779 J**	**779 J**	**8.53**	**8.53**	**10.5**	**10.5**	**278**	**278**	**164**	**164**	0.809 U	2.50 U	0.714 U	2.21 U	0.669 U	2.07 U
Naphthalene	**26.8**	**26.8**	**227**	**227**	**256 J**	**256 J**	**4.11**	**4.11**	0.934 U	2.11 U	**78.2**	**78.2**	1.12 U	2.53 U	**2.04 J**	**2.04 J**	**2.56**	**2.56**	0.918 U	2.07 U
Phenanthrene	**1,050**	**1,050**	**3,020**	**3,020**	**6,550 J**	**6,550 J**	**116 J**	**116 J**	**115**	**115**	**3,250**	**3,250**	**1,580**	**1,580**	**2.47 J**	**2.47 J**	**38.2**	**38.2**	**7.86**	**7.86**
Total LPAHs (full MDL/MRL)	**1,639**	**1,639**	**5,089**	**5,089**	**13,120 J**	**13,120 J**	**158 J**	**158 J**	**168 J**	**170 J**	**4,789**	**4,789**	**2,529 J**	**2,531 J**	**7.17 J**	**14.5 J**	**53.304 J**	**54.8 J**	**11.0 J**	**18.2 J**
Total LPAHs (KM)	**1,639**	**1,639**	**5,089**	**5,089**	**13,122 J**	**13,122 J**	**158 J**	**158 J**	**168 J**	**170 J**	**4,789**	**4,789**	**2,529 J**	**2,531 J**	**6.41 J**	**13.5 J**	**53.304 J**	**54.0 J**	**-**	**-**
Total LPAHs (KM, capped)	**1,639**	**1,639**	**5,089**	**5,089**	**13,120 J**	**13,120 J**	**158 J**	**158 J**	**168 J**	**170 J**	**4,789**	**4,789**	**2,529 J**	**2,531 J**	**6.41 J**	**13.5 J**	**53.304 J**	**54.0 J**	**11.0 J**	**18.2 J**
HPAHs																				
Benzo(a)anthracene	**1,640**	**1,640**	**1,320**	**1,320**	**12,300 J**	**12,300 J**	**183 J**	**183 J**	**114 J**	**114 J**	**6,440**	**6,440**	**2,030**	**2,030**	1.26 U	2.50 U	**62.3 J**	**62.3 J**	1.05 U	2.07 U
Benzo(a)pyrene	**2,040**	**2,040**	**1,580**	**1,580**	**11,700 J**	**11,700 J**	**160**	**160**	**108**	**108**	**6,470**	**6,470**	**1,970**	**1,970**	0.792 U	2.50 U	**74.1**	**74.1**	0.656 U	2.07 U
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	**1,010**	**1,010**	**558**	**558**	**3,350 J**	**3,350 J**	**94.6 J**	**94.6 J**	**61.9 J**	**61.9 J**	**3,830**	**3,830**	**914**	**914**	**4.33 J**	**4.33 J**	**66.4 J**	**66.4 J**	0.498 U	2.07 U
Benzo(k)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
'Benzofluoranthenes, Total	**2,840**	**2,840**	**1,850**	**1,850**	**16,300 J**	**16,300 J**	**290**	**290**	**212**	**212**	**12,100**	**12,100**	**3,040**	**3,040**	**7.70**	**7.70**	**135**	**135**	0.939 U	4.14 U
Chrysene	**1,640**	**1,640**	**1,620**	**1,620**	**12,000 J**	**12,000 J**	**224**	**224**	**129**	**129**	**7,590**	**7,590**	**1,910**	**1,910**	0.895 U	2.50 U	**75.3**	**75.3**	0.741 U	2.07 U
Dibenz(a,h)anthracene	**418**	**418**	**216**	**216**	**1,080 J**	**1,080 J**	**34.2 J**	**34.2 J**	**25.4 J**	**25.4 J**	**1,430**	**1,430**	**347**	**347**	0.777 U	2.50 U	**16.5 J**	**16.5 J**	0.643 U	2.07 U
Fluoranthene	**2,290**	**2,290**	**2,610**	**2,610**	**28,600 J**	**28,600 J**	**218**	**218**	**216**	**216**	**20,700**	**20,700**	**4,330**	**4,330**	**6.29**	**6.29**	**71.9**	**71.9**	1.05 U	2.07 U
Indeno(1,2,3-cd)pyrene	**998**	**998**	**546**	**546**	**4,170 J**	**4,170 J**	**83.6 J**	**83.6 J**	**60.8 J**	**60.8 J**	**3,910**	**3,910**	**939**	**939**	**3.52 J**	**3.52 J**	**49.8 J**	**49.8 J**	0.472 U	2.07 U
Pyrene	**2,480**	**2,480**	**3,480**	**3,480**	**32,000 J**	**32,000 J**	**366 J**	**366 J**	**217**	**217**	**21,900**	**21,900**	**5,470 J**	**5,470 J**	**9.14**	**9.14**	**79.3**	**79.3**	0.352 U	2.07 U
Total HPAHs (full MDL/MRL)	**12,525**	**12,525**	**11,941**	**11,941**	**105,200 J**	**105,200 J**	**1,364 J**	**1,364 J**	**932 J**	**932 J**	**72,270**	**72,270**	**17,910 J**	**17,910 J**	**27.0 J**	**33.3 J**	**496 J**	**496 J**	5.46 U	16.6 U
Total HPAHs (KM)	**12,528**	**12,528**	**11,944**	**11,944**	**105,200 J**	**105,200 J**	**1,364 J**	**1,364 J**	**932 J**	**932 J**	**72,272**	**72,272**	**17,912 J**	**17,912 J**	**26.4 J**	**33.3 J**	**496 J**	**496 J**	**-**	**-**
Total HPAHs (KM-capped)	**12,525**	**12,525**	**11,941**	**11,941**	**105,200 J**	**105,200 J**	**1,364 J**	**1,364 J**	**932 J**	**932 J**	**72,270**	**72,270**	**17,910 J**	**17,910 J**	**26.4 J**	**33.3 J**	**496 J**	**496 J**	5.46 U	16.6 U

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
- = Not Analyzed

J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-2
Sandblast Area AOPC Soil (0-3 ft bgs) PAH Analysis Results
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Site ID	HA11		HA11		LD-01		LD-01		LD-02		LD-02		LD-03		LD-03		LD-04		LD-04	
Sample ID	041123SGA30SS		041123SGA31SS		090320-LD-1So-0-1		090320-LD-1So-1-3		090320-LD-2So-0-1		090320-LD-2So-1-3		090320-LD-3So-0-1		090320-LD-3So-1-3		090320-LD-4So-0-1		090320-LD-4So-1-3	
Sample Date	11/23/2004		11/23/2004		3/20/2009		3/20/2009		3/20/2009		3/20/2009		3/20/2009		3/20/2009		3/20/2009		3/20/2009	
Sample Depth (feet bgs)	1		3		0-1		1-3		0-1		1-3		0-1		1-3		0-1		1-3	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs																				
2-Methylnaphthalene	0.641 U	2.46 U	0.656 U	2.52 U	**40.0 J**	**40.0 J**	1.20 U	6.90 U	**40.0 J**	**40.0 J**	**3.30 J**	**3.30 J**	**43.0 J**	**43.0 J**	1.20 U	6.80 U	1.20 U	6.40 U	1.20 U	6.50 U
Acenaphthene	**5.88**	**5.88**	0.648 U	2.52 U	**160 J**	**160 J**	**1.10 J**	**1.10 J**	**140 J**	**140 J**	**9.00**	**9.00**	**430**	**430**	**4.10 J**	**4.10 J**	**1.50 J**	**1.50 J**	1.00 U	6.50 U
Acenaphthylene	0.726 U	2.46 U	0.744 U	2.52 U	35.0 U	180 U	1.40 U	6.90 U	**37.0 J**	**37.0 J**	1.40 U	6.80 U	35.0 U	170 U	1.40 U	6.80 U	1.40 U	6.40 U	1.40 U	6.50 U
Anthracene	**8.55**	**8.55**	0.480 U	2.52 U	**330**	**330**	**1.80 J**	**1.80 J**	**280**	**280**	**14.0**	**14.0**	**780**	**780**	**11.0**	**11.0**	**2.00 J**	**2.00 J**	1.40 U	6.50 U
Fluorene	**7.13**	**7.13**	0.816 U	2.52 U	**130 J**	**130 J**	1.70 U	6.90 U	**120 J**	**120 J**	**9.70**	**9.70**	**380**	**380**	**3.80 J**	**3.80 J**	1.70 U	6.40 U	1.70 U	6.50 U
Naphthalene	**2.50**	**2.50**	1.12 U	2.52 U	**66.0 J**	**66.0 J**	1.30 U	6.90 U	**69.0 J**	**69.0 J**	**6.30 J**	**6.30 J**	**62.0 J**	**62.0 J**	**2.20 J**	**2.20 J**	1.30 U	6.40 U	1.30 U	6.50 U
Phenanthrene	**24.8**	**24.8**	0.750 U	2.52 U	**1,900**	**1,900**	**15.0**	**15.0**	**1,900**	**1,900**	**71.0**	**71.0**	**4,000**	**4,000**	**59.0**	**59.0**	**16.0**	**16.0**	1.30 U	6.50 U
Total LPAHs (full MDL/MRL)	**49.6 J**	**51.3 J**	4.56 U	15.1 U	**2,621 J**	**2,766 J**	**22.3 J**	**38.6 J**	**2,546 J**	**2,546 J**	**111 J**	**117 J**	**5,687 J**	**5,822 J**	**81.5 J**	**86.9 J**	**23.9 J**	**38.7 J**	8.10 U	39.0 U
Total LPAHs (KM)	**49.6 J**	**51.3 J**	**-**	**-**	**2,621 J**	**2,705 J**	**21.2 J**	**22.2 J**	**2,546 J**	**2,546 J**	**111 J**	**116 J**	**5,687 J**	**5,714 J**	**81.5 J**	**83.5 J**	**23.5 J**	**24.8 J**	**-**	**-**
Total LPAHs (KM, capped)	**49.6 J**	**51.3 J**	4.56 U	15.1 U	**2,621 J**	**2,705 J**	**21.198 J**	**22.2 J**	**2,546 J**	**2,546 J**	**111 J**	**116 J**	**5,687 J**	**5,714 J**	**81.5 J**	**83.5 J**	**23.5 J**	**24.8 J**	8.10 U	39.0 U
HPAHs																				
Benzo(a)anthracene	**48.3 J**	**48.3 J**	1.28 U	2.52 U	**1,500**	**1,500**	**15.0**	**15.0**	**2,700**	**2,700**	**37.0**	**37.0**	**2,100**	**2,100**	**71.0**	**71.0**	**27.0**	**27.0**	1.40 U	6.50 U
Benzo(a)pyrene	**40.4**	**40.4**	0.799 U	2.52 U	**1,400**	**1,400**	**19.0**	**19.0**	**2,800**	**2,800**	**35.0**	**35.0**	**1,900**	**1,900**	**72.0**	**72.0**	**38.0**	**38.0**	1.60 U	6.50 U
Benzo(b)fluoranthene	-	-	-	-	**2,000**	**2,000**	**27.0**	**27.0**	**4,100**	**4,100**	**45.0**	**45.0**	**2,600**	**2,600**	**100**	**100**	**53.0**	**53.0**	2.50 U	6.50 U
Benzo(g,h,i)perylene	**29.8 J**	**29.8 J**	0.607 U	2.52 U	**950**	**950**	**21.0**	**21.0**	**2,000**	**2,000**	**33.0**	**33.0**	**1,100**	**1,100**	**54.0**	**54.0**	**42.0**	**42.0**	2.30 U	6.50 U
Benzo(k)fluoranthene	-	-	-	-	**770**	**770**	**10.0**	**10.0**	**1,400**	**1,400**	**16.0**	**16.0**	**880**	**880**	**36.0**	**36.0**	**19.0**	**19.0**	2.50 U	6.50 U
'Benzofluoranthenes, Total	**73.4**	**73.4**	1.14 U	5.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	**85.8**	**85.8**	0.903 U	2.52 U	**1,900**	**1,900**	**21.0**	**21.0**	**3,500**	**3,500**	**42.0**	**42.0**	**2,300**	**2,300**	**85.0**	**85.0**	**39.0**	**39.0**	**1.80 J**	**1.80 J**
Dibenz(a,h)anthracene	**1.23 J**	**1.23 J**	0.784 U	2.52 U	**270**	**270**	**4.40 J**	**4.40 J**	**640**	**640**	**7.00**	**7.00**	**350**	**350**	**15.0**	**15.0**	**9.70**	**9.70**	2.20 U	6.50 U
Fluoranthene	**52.7**	**52.7**	1.28 U	2.52 U	**3,100**	**3,100**	**29.0**	**29.0**	**4,700**	**4,700**	**71.0**	**71.0**	**5,000**	**5,000**	**130**	**130**	**36.0**	**36.0**	2.20 U	6.50 U
Indeno(1,2,3-cd)pyrene	**26.5 J**	**26.5 J**	0.576 U	2.52 U	**1,100**	**1,100**	**16.0**	**16.0**	**2,200**	**2,200**	**25.0**	**25.0**	**1,300**	**1,300**	**55.0**	**55.0**	**35.0**	**35.0**	1.90 U	6.50 U
Pyrene	**51.6**	**51.6**	0.429 U	2.52 U	**2,800**	**2,800**	**29.0**	**29.0**	**4,400**	**4,400**	**76.0**	**76.0**	**4,200**	**4,200**	**120**	**120**	**47.0**	**47.0**	**2.10 J**	**2.10 J**
Total HPAHs (full MDL/MRL)	**336 J**	**336 J**	6.66 U	20.2 U	**15,790**	**15,790**	**191 J**	**191 J**	**28,440**	**28,440**	**387**	**387**	**21,730**	**21,730**	**738**	**738**	**346**	**346**	**20.5 J**	**55.9 J**
Total HPAHs (KM)	**336 J**	**336 J**	**-**	**-**	**15,790**	**15,790**	**191 J**	**191 J**	**28,440**	**28,440**	**387**	**387**	**21,730**	**21,730**	**738**	**738**	**346**	**346**	**16.5 J**	**19.5 J**
Total HPAHs (KM-capped)	**336 J**	**336 J**	6.66 U	20.2 U	**15,790**	**15,790**	**191 J**	**191 J**	**28,440**	**28,440**	**387**	**387**	**21,730**	**21,730**	**738**	**738**	**346**	**346**	**16.5 J**	**19.5 J**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
- = Not Analyzed

J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-2
Sandblast Area AOPC Soil (0-3 ft bgs) PAH Analysis Results
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Site ID	LD-05		LD-05		LD-06		LD-07		LD-08		LD-09		LD-10		LD-11*		SB-EUA*		SB-EUB	
Sample ID	090320-LD-5So-0-1		090320-LD-5So-1-3		090319-LD-6-So		090319-LD-7-So		090319-LD-8-So		090319-LD-9-So		090319-LD-10-So		090319-LD-11-So		090318-SB-EUA-So		090318-SB-EUB-So	
Sample Date	3/20/2009		3/20/2009		3/19/2009		3/19/2009		3/19/2009		3/19/2009		3/19/2009		3/19/2009		3/18/2009		3/18/2009	
Sample Depth (feet bgs)	0-1		1-3		0-0.17		0-0.17		0-0.17		0-0.17		0-0.17		0-0.17		0-0.17		0-0.17	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs																				
2-Methylnaphthalene	**6.90**	**6.90**	1.20 U	6.40 U	**29.0 J**	**29.0 J**	**27.0 J**	**27.0 J**	1.20 U	10.0 U	**2.80 J**	**2.80 J**	**36.0 J**	**36.0 J**	**7.60 J**	**7.60 J**	30.0 U	160 U	60.0 U	340 U
Acenaphthene	**30.0**	**30.0**	**4.70 J**	**4.70 J**	**210**	**210**	**110**	**110**	1.00 U	10.0 U	**14.0**	**14.0**	**99.0 J**	**99.0 J**	**20.0**	**20.0**	**34.5 J**	**34.5 J**	**68.0 J**	**68.0 J**
Acenaphthylene	**4.60 J**	**4.60 J**	1.40 U	6.40 U	**15.0 J**	**15.0 J**	**31.0 J**	**31.0 J**	1.40 U	10.0 U	**2.60 J**	**2.60 J**	**25.0 J**	**25.0 J**	**3.15 J**	**3.15 J**	35.0 U	160 U	70.0 U	340 U
Anthracene	**90.0**	**90.0**	**13.0**	**13.0**	**220**	**220**	**270**	**270**	**2.90 J**	**2.90 J**	**29.0**	**29.0**	**170**	**170**	**55.0**	**55.0**	**53.5 J**	**53.5 J**	**150 J**	**150 J**
Fluorene	**29.0**	**29.0**	**5.20 J**	**5.20 J**	**130**	**130**	**130**	**130**	1.70 U	10.0 U	**13.0**	**13.0**	**75.0 J**	**75.0 J**	**17.5**	**17.5**	43.0 U	160 U	85.0 U	340 U
Naphthalene	**8.90**	**8.90**	**4.00 J**	**4.00 J**	**78.0 J**	**78.0 J**	**41.0 J**	**41.0 J**	**3.90 J**	**3.90 J**	**6.70 J**	**6.70 J**	**45.0 J**	**45.0 J**	**8.75 J**	**8.75 J**	33.0 U	160 U	65.0 U	340 U
Phenanthrene	**460**	**460**	**79.0**	**79.0**	**1,100**	**1,100**	**1,800**	**1,800**	**16.0**	**16.0**	**180**	**180**	**810**	**810**	**260**	**260**	**360**	**360**	**940**	**940**
Total LPAHs (full MDL/MRL)	**623 J**	**623 J**	**107 J**	**112 J**	**1,753 J**	**1,753 J**	**2,382 J**	**2,382 J**	**26.9 J**	**52.8 J**	**245 J**	**245 J**	**1,224 J**	**1,224 J**	**364 J**	**364 J**	**559 J**	**928 J**	**1,378 J**	**2,178 J**
Total LPAHs (KM)	**623 J**	**623 J**	**107 J**	**111 J**	**1,753 J**	**1,753 J**	**2,382 J**	**2,382 J**	**25.8 J**	**33.0 J**	**245 J**	**245 J**	**1,224 J**	**1,224 J**	**364 J**	**364 J**	**549 J**	**580 J**	**1,356 J**	**1,485 J**
Total LPAHs (KM, capped)	**623 J**	**623 J**	**107 J**	**111 J**	**1,753 J**	**1,753 J**	**2,382 J**	**2,382 J**	**25.8 J**	**33.0 J**	**245 J**	**245 J**	**1,224 J**	**1,224 J**	**364 J**	**364 J**	**549 J**	**580 J**	**1,356 J**	**1,485 J**
HPAHs																				
Benzo(a)anthracene	**530**	**530**	**96.0**	**96.0**	**960**	**960**	**1,800**	**1,800**	**16.0**	**16.0**	**190**	**190**	**660**	**660**	**275**	**275**	**455**	**455**	**1,200**	**1,200**
Benzo(a)pyrene	**450**	**450**	**86.0**	**86.0**	**1,100**	**1,100**	**1,600**	**1,600**	**17.0**	**17.0**	**200**	**200**	**670**	**670**	**265**	**265**	**435**	**435**	**1,000**	**1,000**
Benzo(b)fluoranthene	**640**	**640**	**120**	**120**	**1,500**	**1,500**	**2,600**	**2,600**	**25.0**	**25.0**	**290**	**290**	**1,100**	**1,100**	**365**	**365**	**645**	**645**	**1,600**	**1,600**
Benzo(g,h,i)perylene	**280**	**280**	**54.0**	**54.0**	**820**	**820**	**1,100**	**1,100**	**11.0**	**11.0**	**120**	**120**	**440**	**440**	**165**	**165**	**270**	**270**	**590**	**590**
Benzo(k)fluoranthene	**220**	**220**	**45.0**	**45.0**	**560**	**560**	**860**	**860**	**8.30 J**	**8.30 J**	**89.0**	**89.0**	**360**	**360**	**125**	**125**	**230**	**230**	**570**	**570**
'Benzofluoranthenes, Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	**620**	**620**	**120**	**120**	**1,100**	**1,100**	**2,100**	**2,100**	**20.0**	**20.0**	**220**	**220**	**870**	**870**	**305**	**305**	**575**	**575**	**1,500**	**1,500**
Dibenz(a,h)anthracene	**91.0**	**91.0**	**18.0**	**18.0**	**240**	**240**	**350**	**350**	2.20 U	10.0 U	**38.0**	**38.0**	**130**	**130**	**47.0**	**47.0**	**95.5 J**	**95.5 J**	**220 J**	**220 J**
Fluoranthene	**1,100**	**1,100**	**170**	**170**	**1,700**	**1,700**	**3,300**	**3,300**	**31.0**	**31.0**	**350**	**350**	**1,300**	**1,300**	**555**	**555**	**825**	**825**	**2,100**	**2,100**
Indeno(1,2,3-cd)pyrene	**320**	**320**	**60.0**	**60.0**	**880**	**880**	**1,200**	**1,200**	**12.0**	**12.0**	**130**	**130**	**450**	**450**	**180**	**180**	**300**	**300**	**690**	**690**
Pyrene	**950**	**950**	**150**	**150**	**1,600**	**1,600**	**2,800**	**2,800**	**28.0**	**28.0**	**310**	**310**	**1,300**	**1,300**	**500**	**500**	**775**	**775**	**1,900**	**1,900**
Total HPAHs (full MDL/MRL)	**5,201**	**5,201**	**919**	**919**	**10,460**	**10,460**	**17,710**	**17,710**	**171 J**	**178 J**	**1,937**	**1,937**	**7,280**	**7,280**	**2,782**	**2,782**	**4,606 J**	**4,606 J**	**11,370 J**	**11,370 J**
Total HPAHs (KM)	**5,201**	**5,201**	**919**	**919**	**10,460**	**10,460**	**17,710**	**17,710**	**171 J**	**177 J**	**1,937**	**1,937**	**7,280**	**7,280**	**2,782**	**2,782**	**4,606 J**	**4,606 J**	**11,370 J**	**11,370 J**
Total HPAHs (KM-capped)	**5,201**	**5,201**	**919**	**919**	**10,460**	**10,460**	**17,710**	**17,710**	**171 J**	**177 J**	**1,937**	**1,937**	**7,280**	**7,280**	**2,782**	**2,782**	**4,606 J**	**4,606 J**	**11,370 J**	**11,370 J**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
- = Not Analyzed

J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-3
Reference Area Soil (0-0.5 ft bgs) PAH Analysis Results
(Page 1 of 2)

Site ID	R-01		R-02		R-03		R-04		R-05		R-06		R-07*	
Sample ID	090128-R-R1-0-0.5So		090128-R-R2-0-0.5So		090128-R-R3-0-0.5So		090128-R-R4-0-0.5So		090128-R-R5-0-0.5So		090128-R-R6-0-0.5So		090128-R-R7-0-0.5So	
Sample Date	1/28/2009		1/28/2009		1/28/2009		1/28/2009		1/28/2009		1/28/2009		1/28/2009	
Sample Depth (feet bgs)	0.0-0.5		0.0-0.5		0.0-0.5		0.0-0.5		0.0-0.5		0.0-0.5		0.0-0.5	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs														
Acenaphthene	**1.90 J**	**1.90 J**	**1.20 J**	**1.20 J**	**3.40 J**	**3.40 J**	1.00 U	10.0 U	**1.60 J**	**1.60 J**	**1.20 J**	**1.20 J**	**1.75 J**	**1.75 J**
Acenaphthylene	1.40 U	9.90 U	1.40 U	10.0 U	**1.60 J**	**1.60 J**	1.40 U	10.0 U	1.40 U	10.0 U	1.40 U	9.90 U	1.40 U	10.0 U
Anthracene	**2.70 J**	**2.70 J**	**2.00 J**	**2.00 J**	**4.90 J**	**4.90 J**	**1.50 J**	**1.50 J**	**1.90 J**	**1.90 J**	**2.00 J**	**2.00 J**	**3.30 J**	**3.30 J**
Fluorene	1.70 U	9.90 U	1.70 U	10.0 U	**3.20 J**	**3.20 J**	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.90 U	1.70 U	10.0 U
Naphthalene	1.30 U	9.90 U	**1.60 J**	**1.60 J**	**2.20 J**	**2.20 J**	1.30 U	10.0 U	1.30 U	10.0 U	**1.30 J**	**1.30 J**	**1.80 J**	**1.80 J**
Phenanthrene	**16.0**	**16.0**	**16.0**	**16.0**	**34.0**	**34.0**	**9.10 J**	**9.10 J**	**13.0**	**13.0**	**9.60 J**	**9.60 J**	**16.0**	**16.0**
Total LPAHs (full MDL/MRL)	**25.0 J**	**50.3 J**	**23.9 J**	**40.8 J**	**49.3 J**	**49.3 J**	**16.0 J**	**50.6 J**	**20.9 J**	**46.5 J**	**17.2 J**	**33.9 J**	**26.0 J**	**42.9 J**
Total LPAHs (KM)	**24.5 J**	**27.5 J**	**23.3 J**	**24.0 J**	**49.3 J**	**49.3 J**	**14.7 J**	**31.8 J**	**20.5 J**	**21.8 J**	**16.6 J**	**21.2 J**	**25.7 J**	**27.4 J**
Total LPAHs (KM, capped)	**24.5 J**	**27.5 J**	**23.3 J**	**24.0 J**	**49.3 J**	**49.3 J**	**14.7 J**	**31.8 J**	**20.5 J**	**21.8 J**	**16.6 J**	**21.2 J**	**25.7 J**	**27.4 J**
HPAHs														
Benzo(a)anthracene	**16.0**	**16.0**	**17.0**	**17.0**	**34.0**	**34.0**	**9.90 J**	**9.90 J**	**17.0**	**17.0**	**11.0**	**11.0**	**20.5**	**20.5**
Benzo(a)pyrene	**20.0**	**20.0**	**22.0**	**22.0**	**45.0**	**45.0**	**11.0**	**11.0**	**20.0**	**20.0**	**16.0**	**16.0**	**26.5**	**26.5**
Benzo(b)fluoranthene	**27.0**	**27.0**	**29.0**	**29.0**	**55.0**	**55.0**	**16.0**	**16.0**	**27.0**	**27.0**	**19.0**	**19.0**	**33.0**	**33.0**
Benzo(g,h,i)perylene	**14.0**	**14.0**	**16.0**	**16.0**	**32.0**	**32.0**	**11.0**	**11.0**	**16.0**	**16.0**	**13.0**	**13.0**	**20.5**	**20.5**
Benzo(k)fluoranthene	**8.30 J**	**8.30 J**	**9.70 J**	**9.70 J**	**19.0**	**19.0**	**6.70 J**	**6.70 J**	**9.50 J**	**9.50 J**	**7.70 J**	**7.70 J**	**10.8 J**	**10.8 J**
Chrysene	**20.0**	**20.0**	**23.0**	**23.0**	**45.0**	**45.0**	**13.0**	**13.0**	**22.0**	**22.0**	**17.0**	**17.0**	**25.5**	**25.5**
Dibenz(a,h)anthracene	**4.30 J**	**4.30 J**	2.20 U	10.0 U	**6.90 J**	**6.90 J**	2.20 U	10.0 U	**3.60 J**	**3.60 J**	**3.70 J**	**3.70 J**	**4.90 J**	**4.90 J**
Fluoranthene	**31.0**	**31.0**	**33.0**	**33.0**	**66.0**	**66.0**	**19.0**	**19.0**	**31.0**	**31.0**	**22.0**	**22.0**	**39.5**	**39.5**
Indeno(1,2,3-cd)pyrene	**17.0**	**17.0**	**16.0**	**16.0**	**34.0**	**34.0**	**12.0**	**12.0**	**16.0**	**16.0**	**12.0**	**12.0**	**22.0**	**22.0**
Pyrene	**29.0**	**29.0**	**31.0**	**31.0**	**64.0**	**64.0**	**18.0**	**18.0**	**30.0**	**30.0**	**23.0**	**23.0**	**39.0**	**39.0**
Total HPAHs (full MDL/MRL)	**187 J**	**187 J**	**199 J**	**207 J**	**401 J**	**401 J**	**119 J**	**127 J**	**192 J**	**192 J**	**144 J**	**144 J**	**242 J**	**242 J**
Total HPAHs (KM)	**187 J**	**187 J**	**199 J**	**206 J**	**401 J**	**401 J**	**119 J**	**125 J**	**192 J**	**192 J**	**144 J**	**144 J**	**242 J**	**242 J**
Total HPAHs (KM-capped)	**187 J**	**187 J**	**199 J**	**206 J**	**401 J**	**401 J**	**119 J**	**125 J**	**192 J**	**192 J**	**144 J**	**144 J**	**242 J**	**242 J**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
NC = Not calculated

J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-3
Reference Area Soil (0-0.5 ft bgs) PAH Analysis Results
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Site ID	R-08		R-09		R-10		R-11		R-12		R-13		R-14	
Sample ID	090128-R-R8-0-0.5So		090128-R-R9-0-0.5So		090128-R-R10-0-0.5So		090128-R-R11-0-0.5So		090128-R-R12-0-0.5So		090128-R-R13-0-0.5So		090128-R-R14-0-0.5So	
Sample Date	1/28/2009		1/28/2009		1/28/2009		1/28/2009		1/28/2009		1/28/2009		1/28/2009	
Sample Depth (feet bgs)	0.0-0.5		0.0-0.5		0.0-0.5		0.0-0.5		0.0-0.5		0.0-0.5		0.0-0.5	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs														
Acenaphthene	**1.80 J**	**1.80 J**	1.00 U	10.0 U	**1.50 J**	**1.50 J**	1.00 U	9.90 U	**1.40 J**	**1.40 J**	1.00 U	10.0 U	1.00 U	10.0 U
Acenaphthylene	1.40 U	10.0 U	1.40 U	10.0 U	1.40 U	10.0 U	1.40 U	9.90 U	1.40 U	10.0 U	1.40 U	10.0 U	1.40 U	10.0 U
Anthracene	**2.20 J**	**2.20 J**	**3.50 J**	**3.50 J**	**2.10 J**	**2.10 J**	1.40 U	9.90 U	**1.70 J**	**1.70 J**	**1.80 J**	**1.80 J**	1.40 U	10.0 U
Fluorene	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Naphthalene	**1.60 J**	**1.60 J**	1.30 U	10.0 U	**1.70 J**	**1.70 J**	1.30 U	9.90 U	1.30 U	10.0 U	1.30 U	10.0 U	1.30 U	10.0 U
Phenanthrene	**18.0**	**18.0**	**13.0**	**13.0**	**11.0**	**11.0**	**5.50 J**	**5.50 J**	**9.60 J**	**9.60 J**	**8.30 J**	**8.30 J**	**5.80 J**	**5.80 J**
Total LPAHs (full MDL/MRL)	**26.7 J**	**43.6 J**	**21.9 J**	**56.5 J**	**19.4 J**	**36.3 J**	**12.3 J**	**55.0 J**	**17.1 J**	**42.7 J**	**15.5 J**	**50.1 J**	**12.6 J**	**55.8 J**
Total LPAHs (KM)	**26.5 J**	**27.3 J**	**20.5 J**	**30.5 J**	**19.2 J**	**19.8 J**	-	-	**16.6 J**	**25.4 J**	**14.1 J**	**30.3 J**	-	-
Total LPAHs (KM, capped)	**26.5 J**	**27.3 J**	**20.5 J**	**30.5 J**	**19.2 J**	**19.8 J**	**12.3 J**	**55.0 J**	**16.6 J**	**25.4 J**	**14.1 J**	**30.3 J**	**12.6 J**	**55.8 J**
HPAHs														
Benzo(a)anthracene	**16.0**	**16.0**	**13.0**	**13.0**	**10.0**	**10.0**	**7.40 J**	**7.40 J**	**12.0**	**12.0**	**8.00 J**	**8.00 J**	**4.60 J**	**4.60 J**
Benzo(a)pyrene	**22.0**	**22.0**	**15.0**	**15.0**	**15.0**	**15.0**	**8.30 J**	**8.30 J**	**16.0**	**16.0**	**10.0**	**10.0**	**7.70 J**	**7.70 J**
Benzo(b)fluoranthene	**27.0**	**27.0**	**22.0**	**22.0**	**18.0**	**18.0**	**13.0**	**13.0**	**20.0**	**20.0**	**12.0**	**12.0**	**9.10 J**	**9.10 J**
Benzo(g,h,i)perylene	**15.0**	**15.0**	**11.0**	**11.0**	**12.0**	**12.0**	**8.20 J**	**8.20 J**	**9.70 J**	**9.70 J**	**7.30 J**	**7.30 J**	**5.80 J**	**5.80 J**
Benzo(k)fluoranthene	**8.70 J**	**8.70 J**	**7.10 J**	**7.10 J**	**6.90 J**	**6.90 J**	**3.40 J**	**3.40 J**	**7.20 J**	**7.20 J**	**4.30 J**	**4.30 J**	**2.70 J**	**2.70 J**
Chrysene	**21.0**	**21.0**	**15.0**	**15.0**	**15.0**	**15.0**	**8.90 J**	**8.90 J**	**15.0**	**15.0**	**10.0**	**10.0**	**6.40 J**	**6.40 J**
Dibenz(a,h)anthracene	**4.40 J**	**4.40 J**	2.20 U	10.0 U	2.20 U	10.0 U	**2.70 J**	**2.70 J**	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	10.0 U
Fluoranthene	**31.0**	**31.0**	**26.0**	**26.0**	**21.0**	**21.0**	**13.0**	**13.0**	**21.0**	**21.0**	**15.0**	**15.0**	**10.0**	**10.0**
Indeno(1,2,3-cd)pyrene	**17.0**	**17.0**	**12.0**	**12.0**	**5.20 J**	**5.20 J**	**8.20 J**	**8.20 J**	**12.0**	**12.0**	**7.60 J**	**7.60 J**	**6.00 J**	**6.00 J**
Pyrene	**31.0**	**31.0**	**26.0**	**26.0**	**21.0**	**21.0**	**15.0**	**15.0**	**24.0**	**24.0**	**14.0**	**14.0**	**10.0**	**10.0**
Total HPAHs (full MDL/MRL)	**193 J**	**193 J**	**149 J**	**157 J**	**126 J**	**134 J**	**88.1 J**	**88.1 J**	**139 J**	**147 J**	**90.4 J**	**98.2 J**	**64.5 J**	**72.3 J**
Total HPAHs (KM)	**193 J**	**193 J**	**149 J**	**154 J**	**126 J**	**130 J**	**88.1 J**	**88.1 J**	**139 J**	**145 J**	**90.4 J**	**95.0 J**	**64.5 J**	**68.3 J**
Total HPAHs (KM-capped)	**193 J**	**193 J**	**149 J**	**154 J**	**126 J**	**130 J**	**88.1 J**	**88.1 J**	**139 J**	**145 J**	**90.4 J**	**95.0 J**	**64.5 J**	**68.3 J**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
NC = Not calculated

J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-4
Landfill AOPC Soil (0-10 ft bgs) PCB Aroclor Analysis Results
(Page 1 of 5)

Site ID	BIL01SSI		BIL02SSI		BIL03SSI		BIL04SSI		BIL05SSI		BIL06SSI*		BIL09SSI		BIL10SSI		BIL11SSI	
Sample ID	990920BIL01SS		990920BIL02SS		990920BIL03SS		990920BIL04SS		990920BIL05SS		990920BIL06SS		990920BIL09SS		990920BIL10SS		990921BIL11SS	
Sample Date	9/20/1999		9/20/1999		9/20/1999		9/20/1999		9/20/1999		9/20/1999		9/20/1999		9/20/1999		9/21/1999	
Sample Depth (feet bgs)	0-0.33		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5	
Censoring Level for Undetected Results	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**
Aroclor 1016	35.0 UJ	35.0 UJ	34.0 UJ	34.0 UJ	35.0 UJ	35.0 UJ	34.0 UJ	34.0 UJ	36.0 UJ	36.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	37.0 UJ	37.0 UJ
Aroclor 1221	35.0 UJ	35.0 UJ	34.0 UJ	34.0 UJ	35.0 UJ	35.0 UJ	34.0 UJ	34.0 UJ	36.0 UJ	36.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	37.0 UJ	37.0 UJ
Aroclor 1232	35.0 UJ	35.0 UJ	34.0 UJ	34.0 UJ	35.0 UJ	35.0 UJ	34.0 UJ	34.0 UJ	36.0 UJ	36.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	37.0 UJ	37.0 UJ
Aroclor 1242	35.0 UJ	35.0 UJ	34.0 UJ	34.0 UJ	35.0 UJ	35.0 UJ	34.0 UJ	34.0 UJ	36.0 UJ	36.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	37.0 UJ	37.0 UJ
Aroclor 1248	35.0 UJ	35.0 UJ	34.0 UJ	34.0 UJ	35.0 UJ	35.0 UJ	34.0 UJ	34.0 UJ	36.0 UJ	36.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	37.0 UJ	37.0 UJ
Aroclor 1254	35.0 UJ	35.0 UJ	34.0 UJ	34.0 UJ	35.0 UJ	35.0 UJ	34.0 UJ	34.0 UJ	36.0 UJ	36.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	37.0 UJ	37.0 UJ
Aroclor 1260	**58.0 J**	**58.0 J**	**420 J**	**420 J**	**48.0 J**	**48.0 J**	**660 J**	**660 J**	**160 J**	**160 J**	**81.5 J**	**81.5 J**	35.0 UJ	35.0 UJ	35.0 UJ	35.0 UJ	37.0 UJ	37.0 UJ
Total PCBs as Aroclors [1]	**128 J**	**128 J**	**488 J**	**488 J**	**118 J**	**118 J**	**728 J**	**728 J**	**232 J**	**232 J**	**152 J**	**152 J**	105 UJ	105 UJ	105 UJ	105 UJ	111 UJ	111 UJ

Notes:
[1] Only Aroclors 1248, 1254, and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Landfill AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-4
Landfill AOPC Soil (0-10 ft bgs) PCB Aroclor Analysis Results
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Site ID	BIL12SSI		BIL13SSI		BIL01TPG		BIL02TPG		BIL03TPG		BIL04TPG		BIL05		BIL06		BIL07	
Sample ID	990921BIL12SS		000413BIL13SS		011015BIL01TPG		011015BIL02TPG		011015BIL03TPG		011015BIL04TPG		011016BIL05SS		011016BIL06SS		011016BIL07SS	
Sample Date	9/21/1999		4/13/2000		10/15/2001		10/15/2001		10/15/2001		10/15/2001		10/16/2001		10/16/2001		10/16/2001	
Sample Depth (feet bgs)	0-0.5		0-0.5		0-10		0-10		0-10		0-10		8.0		8.0		5.0	
Censoring Level for Undetected Results	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**
Aroclor 1016	35.0 UJ	35.0 UJ	50.0 UJ	50.0 UJ	1.49 U	13.6 U	1.30 U	11.8 U	1.35 U	12.3 U	1.25 U	11.3 U	1.23 U	11.2 U	1.18 U	10.8 U	1.17 U	10.6 U
Aroclor 1221	35.0 UJ	35.0 UJ	50.0 UJ	50.0 UJ	6.39 U	13.6 U	5.55 U	11.8 U	5.78 U	12.3 U	5.34 U	11.3 U	5.28 U	11.2 U	5.07 U	10.8 U	5.02 U	10.6 U
Aroclor 1232	35.0 UJ	35.0 UJ	50.0 UJ	50.0 UJ	5.10 U	13.6 U	4.43 U	11.8 U	4.61 U	12.3 U	4.26 U	11.3 U	4.21 U	11.2 U	4.04 U	10.8 U	4.00 U	10.6 U
Aroclor 1242	35.0 UJ	35.0 UJ	50.0 UJ	50.0 UJ	2.73 U	13.6 U	2.37 U	11.8 U	2.47 U	12.3 U	2.28 U	11.3 U	2.25 U	11.2 U	2.16 U	10.8 U	2.14 U	10.6 U
Aroclor 1248	35.0 UJ	35.0 UJ	50.0 UJ	50.0 UJ	**968**	**968**	5.89 U	11.8 U	**61.5**	**61.5**	5.66 U	11.3 U	5.60 U	11.2 U	5.38 U	10.8 U	5.32 U	10.6 U
Aroclor 1254	35.0 UJ	35.0 UJ	50.0 UJ	50.0 UJ	2.12 U	13.6 U	1.84 U	11.8 U	1.91 U	12.3 U	1.77 U	11.3 U	1.75 U	11.2 U	**26.7**	**26.7**	1.66 U	10.6 U
Aroclor 1260	35.0 UJ	35.0 UJ	50.0 UJ	50.0 UJ	**26.3**	**26.3**	**22.2**	**22.2**	**87.6**	**87.6**	**12.5**	**12.5**	**10.2 J**	**10.2 J**	**12.8**	**12.8**	**36.7**	**36.7**
Total PCBs as Aroclors [1]	105 UJ	105 UJ	150 UJ	150 UJ	**996 J**	**1007.9 J**	**29.9 J**	**45.8 J**	**151.01 J**	**161 J**	**19.9 J**	**35.1 J**	**17.6 J**	**32.6 J**	**44.9 J**	**50.3 J**	**43.7 J**	**57.9 J**

Notes:
[1] Only Aroclors 1248, 1254, and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Landfill AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-4
Landfill AOPC Soil (0-10 ft bgs) PCB Aroclor Analysis Results
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Site ID	BIL08		BIL09		BIL10		BIL11*		BIL13		BIL14		BIL15		BIL16		BIL17	
Sample ID	011016BIL08SS		011016BIL09SS		011016BIL10SS		011016BIL11SS		011016BIL13SS		011016BIL14SS		011016BIL15SS		011016BIL16SS		011016BIL17SS	
Sample Date	10/16/2001		10/16/2001		10/16/2001		10/16/2001		10/16/2001		10/16/2001		10/16/2001		10/16/2001		10/16/2001	
Sample Depth (feet bgs)	5.0		6.0		5.0		8.0		4.0		6.0		8.0		4.0		1.0	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	1.18 U	10.7 U	1.27 U	11.5 U	1.14 U	10.4 U	1.32 U	12.0 U	1.23 U	11.2 U	1.20 U	10.9 U	1.21 U	11.0 U	1.16 U	10.5 U	1.36 U	12.4 U
Aroclor 1221	5.06 U	10.7 U	5.43 U	11.5 U	4.88 U	10.4 U	5.66 U	12.0 U	5.27 U	11.2 U	5.13 U	10.9 U	5.16 U	11.0 U	4.97 U	10.5 U	5.83 U	12.4 U
Aroclor 1232	4.04 U	10.7 U	4.33 U	11.5 U	3.90 U	10.4 U	4.51 U	12.0 U	4.21 U	11.2 U	4.10 U	10.9 U	4.12 U	11.0 U	3.97 U	10.5 U	4.65 U	12.4 U
Aroclor 1242	2.16 U	10.7 U	2.32 U	11.5 U	2.08 U	10.4 U	2.41 U	12.0 U	2.25 U	11.2 U	2.19 U	10.9 U	2.20 U	11.0 U	2.12 U	10.5 U	2.49 U	12.4 U
Aroclor 1248	5.37 U	10.7 U	5.76 U	11.5 U	5.18 U	10.4 U	6.00 U	12.0 U	5.60 U	11.2 U	5.45 U	10.9 U	5.48 U	11.0 U	5.27 U	10.5 U	6.19 U	12.4 U
Aroclor 1254	1.68 U	10.7 U	1.80 U	11.5 U	1.62 U	10.4 U	**55.3**	**55.3**	**499**	**499**	1.70 U	10.9 U	1.71 U	11.0 U	1.65 U	10.5 U	**78.6**	**78.6**
Aroclor 1260	1.68 U	10.7 U	**55.3**	**55.3**	1.62 U	10.4 U	**39.8**	**39.8**	**158**	**158**	**15.0**	**15.0**	**52.4**	**52.4**	**445**	**445**	**68.0**	**68.0**
Total PCBs as Aroclors [1]	8.73 U	32.1 U	**62.9 J**	**78.3 J**	8.42 U	31.2 U	**101 J**	**107 J**	**663 J**	**668 J**	**22.2 J**	**36.8 J**	**59.6 J**	**74.4 J**	**452 J**	**466 J**	**153 J**	**159 J**

Notes:
[1] Only Aroclors 1248, 1254, and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Landfill AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-4
Landfill AOPC Soil (0-10 ft bgs) PCB Aroclor Analysis Results
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Site ID	BIL18		BIL19		BIL20		BIL21		BIL22		BIL28TPM		BIL28TPM		BIL01USE		BIL02USE	
Sample ID	011016BIL18SS		011016BIL19SS		011016BIL20SS		011016BIL21SS		011016BIL22SS		011017BIL28TPM		011017BIL28TPM		070410BIL01SS		070410BIL02SS	
Sample Date	10/16/2001		10/16/2001		10/16/2001		10/16/2001		10/16/2001		10/17/2001		10/17/2001		4/10/2007		4/10/2007	
Sample Depth (feet bgs)	2.0		5.0		8.0		5.0		3.0		0-10		0-10		0.5		0.5	
Censoring Level for Undetected Results	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**
Aroclor 1016	1.16 U	10.5 U	1.16 U	10.6 U	1.31 U	11.9 U	1.10 U	10.0 U	1.14 U	10.4 U	1.39 U	12.7 U	1.39 U	12.7 U	3.90 U	3.90 U	3.90 U	3.90 U
Aroclor 1221	4.96 U	10.5 U	4.98 U	10.6 U	5.62 U	11.9 U	4.72 U	10.0 U	4.89 U	10.4 U	5.96 U	12.7 U	5.96 U	12.7 U	3.90 U	3.90 U	3.90 U	3.90 U
Aroclor 1232	3.96 U	10.5 U	3.97 U	10.6 U	4.49 U	11.9 U	3.77 U	10.0 U	3.90 U	10.4 U	4.76 U	12.7 U	4.76 U	12.7 U	3.90 U	3.90 U	3.90 U	3.90 U
Aroclor 1242	2.12 U	10.5 U	2.12 U	10.6 U	2.40 U	11.9 U	2.01 U	10.0 U	2.09 U	10.4 U	2.54 U	12.7 U	2.54 U	12.7 U	3.90 U	3.90 U	3.90 U	3.90 U
Aroclor 1248	5.27 U	10.5 U	5.28 U	10.6 U	5.97 U	11.9 U	5.01 U	10.0 U	5.19 U	10.4 U	6.33 U	12.7 U	6.33 U	12.7 U	3.90 U	3.90 U	3.90 U	3.90 U
Aroclor 1254	**48.4**	**48.4**	**54.9**	**54.9**	1.86 U	11.9 U	**37.2**	**37.2**	**104**	**104**	1.98 U	12.7 U	1.98 U	12.7 U	**26.0**	**26.0**	**27.0**	**27.0**
Aroclor 1260	**39.0**	**39.0**	**74.6**	**74.6**	**2.05 J**	**2.05 J**	**41.8**	**41.8**	**91.2**	**91.2**	**46.5**	**46.5**	**46.5**	**46.5**	**50.0**	**50.0**	**24.0**	**24.0**
Total PCBs as Aroclors [1]	**92.7 J**	**97.9 J**	**135 J**	**140 J**	**9.88 J**	**25.9 J**	**84.0 J**	**89.0 J**	**200 J**	**206 J**	**54.8 J**	**71.9 J**	**54.8 J**	**71.9 J**	**79.9 J**	**79.9 J**	**54.9 J**	**54.9 J**

Notes:
[1] Only Aroclors 1248, 1254, and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Landfill AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-4
Landfill AOPC Soil (0-10 ft bgs) PCB Aroclor Analysis Results
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Site ID	BIL03USE		BIL04USE		BIL05USE		BIL06USE		BIL07USE		BIL08USE		BIL09USE	
Sample ID	070410BIL03SS		070410BIL04SS		070410BIL05SS		070410BIL06SS		070410BIL07SS		070410BIL08SS		070410BIL09SS	
Sample Date	4/10/2007		4/10/2007		4/10/2007		4/10/2007		4/10/2007		4/10/2007		4/10/2007	
Sample Depth (feet bgs)	0.5		0.5		0.5		0.5		0.5		0.5		0.5	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	3.90 U	3.90 U	3.90 U	3.90 U	4.00 U	4.00 U	3.90 U	3.90 U	3.90 U	3.90 U	4.00 U	4.00 U	3.80 U	3.80 U
Aroclor 1221	3.90 U	3.90 U	3.90 U	3.90 U	4.00 U	4.00 U	3.90 U	3.90 U	3.90 U	3.90 U	4.00 U	4.00 U	3.80 U	3.80 U
Aroclor 1232	3.90 U	3.90 U	3.90 U	3.90 U	4.00 U	4.00 U	3.90 U	3.90 U	3.90 U	3.90 U	4.00 U	4.00 U	3.80 U	3.80 U
Aroclor 1242	3.90 U	3.90 U	3.90 U	3.90 U	4.00 U	4.00 U	3.90 U	3.90 U	3.90 U	3.90 U	4.00 U	4.00 U	3.80 U	3.80 U
Aroclor 1248	3.90 U	3.90 U	3.90 U	3.90 U	4.00 U	4.00 U	3.90 U	3.90 U	3.90 U	3.90 U	4.00 U	4.00 U	3.80 U	3.80 U
Aroclor 1254	**19.0**	**19.0**	**8.30**	**8.30**	4.00 U	4.00 U	19.0 U	19.0 U	**49.0**	**49.0**	**24.0**	**24.0**	**5.50**	**5.50**
Aroclor 1260	**31.0 J**	**31.0 J**	**33.0**	**33.0**	**12.0**	**12.0**	**92.0**	**92.0**	**74.0**	**74.0**	**42.0**	**42.0**	**19.0**	**19.0**
Total PCBs as Aroclors [1]	**53.9 J**	**53.9 J**	**45.2 J**	**45.2 J**	**20.0 J**	**20.0 J**	**115 J**	**115 J**	**127 J**	**127 J**	**70.0 J**	**70.0 J**	**28.3 J**	**28.3 J**

Notes:
[1] Only Aroclors 1248, 1254, and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Landfill AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-5
Sandblast Area AOPC Soil (0 to >10 ft bgs) PCB Aroclor Analysis Results
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Site ID	DSA01		DSA02		DSA03		DSA04		DSA05		DSA06		DSA07		DSA08		DSA09		DSA10	
Sample ID	011204DSA01SS		011204DSA02SS		011204DSA03SS		011204DSA04SS		011204DSA05SS		011204DSA06SS		011204DSA07SS		011204DSA08SS		011204DSA09SS		011204DSA10SS	
Sample Date	12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001	
Sample Depth (feet bgs)	0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
Media	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Censoring Level for Undetected Results	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**
Aroclor 1016	1.20 U	10.9 U	1.09 U	9.88 U	1.22 U	11.1 U	1.24 U	11.2 U	1.08 U	9.82 U	1.22 U	11.1 U	1.14 U	10.3 U	1.09 U	9.93 U	1.22 U	11.1 U	1.19 U	10.8 U
Aroclor 1221	5.13 U	10.9 U	4.66 U	9.88 U	5.23 U	11.1 U	5.29 U	11.2 U	4.63 U	9.82 U	5.22 U	11.1 U	4.87 U	10.3 U	4.68 U	9.93 U	5.21 U	11.1 U	5.10 U	10.8 U
Aroclor 1232	4.09 U	10.9 U	3.72 U	9.88 U	4.18 U	11.1 U	4.22 U	11.2 U	3.69 U	9.82 U	4.17 U	11.1 U	3.89 U	10.3 U	3.73 U	9.93 U	4.16 U	11.1 U	4.07 U	10.8 U
Aroclor 1242	2.19 U	10.9 U	1.99 U	9.88 U	2.23 U	11.1 U	2.26 U	11.2 U	1.97 U	9.82 U	2.23 U	11.1 U	2.08 U	10.3 U	2.00 U	9.93 U	2.22 U	11.1 U	2.17 U	10.8 U
Aroclor 1248	5.44 U	10.9 U	4.94 U	9.88 U	5.55 U	11.1 U	5.62 U	11.2 U	4.91 U	9.82 U	5.54 U	11.1 U	5.17 U	10.3 U	4.96 U	9.93 U	5.53 U	11.1 U	5.41 U	10.8 U
Aroclor 1254	1.70 U	10.9 U	1.54 U	9.88 U	1.73 U	11.1 U	1.75 U	11.2 U	1.53 U	9.82 U	1.73 U	11.1 U	1.61 U	10.3 U	1.55 U	9.93 U	1.73 U	11.1 U	1.69 U	10.8 U
Aroclor 1260	**2.00 J**	**2.00 J**	1.54 U	9.88 U	**2.23 J**	**2.23 J**	**2.08 J**	**2.08 J**	**7.79 J**	**7.79 J**	**16.8**	**16.8**	1.61 U	10.3 U	1.55 U	9.93 U	**2.12 J**	**2.12 J**	**2.48 J**	**2.48 J**
Aroclor 1262	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1268	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PCBs as Aroclors [1]	**3.70 J**	**12.9 J**	3.08 U	19.8 U	**3.96 J**	**13.3 J**	**3.83 J**	**13.3 J**	**9.32 J**	**17.6 J**	**18.5 J**	**27.9 J**	3.22 U	20.6 U	3.10 U	19.9 U	**3.85 J**	**13.2 J**	**4.17 J**	**13.3 J**

Notes:
[1] Only Aroclors 1254 and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Sandlbast Area AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-5
Sandblast Area AOPC Soil (0 to >10 ft bgs) PCB Aroclor Analysis Results
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Site ID	DSA11*		DSA12*		SBB01*		SBB03		SBB04		SBB05		SBB06		SBB07*		SBB09		SBB10	
Sample ID	011204DSA11SS		011204DSA12SS		011205SBB01SBG		011205SBB03SBG		011205SBB04SBG		011205SBB05SBG		011205SBB06SBG		011205SBB07SBG		011205SBB09SBG		011205SBB10SBG	
Sample Date	12/4/2001		12/4/2001		12/5/2001		12/5/2001		12/5/2001		12/5/2001		12/5/2001		12/5/2001		12/5/2001		12/5/2001	
Sample Depth (feet bgs)	0.0		0.0		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5		0-0.5	
Media	Soil		Soil		Sandblast Grit		Sandblast Grit		Sandblast Grit		Sandblast Grit		Sandblast Grit		Sandblast Grit		Sandblast Grit		Sandblast Grit	
Censoring Level for Undetected Results	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**
Aroclor 1016	1.21 U	11.0 U	1.25 U	11.4 U	1.28 U	11.7 U	1.23 U	11.2 U	1.19 U	10.8 U	1.29 U	11.7 U	1.25 U	11.4 U	1.43 U	13.0 U	1.22 U	11.1 U	1.18 U	10.7 U
Aroclor 1221	5.19 U	11.0 U	5.51 U	11.4 U	5.50 U	11.7 U	5.26 U	11.2 U	5.08 U	10.8 U	5.53 U	11.7 U	5.37 U	11.4 U	6.14 U	13.0 U	5.23 U	11.1 U	5.04 U	10.7 U
Aroclor 1232	4.15 U	11.0 U	4.28 U	11.4 U	4.39 U	11.7 U	4.20 U	11.2 U	4.06 U	10.8 U	4.42 U	11.7 U	4.29 U	11.4 U	4.90 U	13.0 U	4.17 U	11.1 U	4.02 U	10.7 U
Aroclor 1242	2.22 U	11.0 U	2.29 U	11.4 U	2.35 U	11.7 U	2.25 U	11.2 U	2.17 U	10.8 U	2.36 U	11.7 U	2.29 U	11.4 U	2.62 U	13.0 U	2.23 U	11.1 U	2.15 U	10.7 U
Aroclor 1248	5.51 U	11.0 U	5.70 U	11.4 U	5.84 U	11.7 U	5.59 U	11.2 U	5.40 U	10.8 U	5.87 U	11.7 U	5.70 U	11.4 U	6.52 U	13.0 U	5.55 U	11.1 U	5.35 U	10.7 U
Aroclor 1254	1.72 U	11.0 U	1.78 U	11.4 U	1.82 U	11.7 U	1.74 U	11.2 U	1.68 U	10.8 U	1.83 U	11.7 U	1.78 U	11.4 U	2.03 U	13.0 U	1.73 U	11.1 U	1.67 U	10.7 U
Aroclor 1260	**21.0**	**21.0**	**8.30 J**	**8.30 J**	**6.44 J**	**6.44 J**	**30.6**	**30.6**	**17.7**	**17.7**	**23.7**	**23.7**	**15.5**	**15.5**	**5.78 J**	**5.78 J**	**81.8**	**81.8**	**26.0**	**26.0**
Aroclor 1262	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1268	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PCBs as Aroclors [1]	**22.7 J**	**32.0 J**	**10.1 J**	**19.7 J**	**8.26 J**	**18.1 J**	**32.3 J**	**41.8 J**	**19.4 J**	**28.5 J**	**25.5 J**	**35.4 J**	**17.3 J**	**26.9 J**	**7.81 J**	**18.8 J**	**83.5 J**	**92.9 J**	**27.7 J**	**36.7 J**

Notes:
[1] Only Aroclors 1254 and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Sandlbast Area AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-5
Sandblast Area AOPC Soil (0 to >10 ft bgs) PCB Aroclor Analysis Results
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Site ID	SBB11		SBB12		SBB13		SBB14		SBB15		SBB15		SBB16		SBB16		SBB17		SBB17	
Sample ID	011205SBB11SBG		011205SBB12SBG		011205SBB13SBG		011205SBB14SBG		011205SBB15SBG		011205SBB21SS		011205SBB16SBG		011206SBB22ss		011205SBB17SBG		011205SBB19SS	
Sample Date	12/5/2001		12/5/2001		12/5/2001		12/5/2001		12/5/2001		12/5/2001		12/5/2001		12/6/2001		12/5/2001		12/5/2001	
Sample Depth (feet bgs)	0-0.5		0-0.5		2.0		2.0		0-0.5		1.0		0-0.5		1.5		0-0.5		3.0	
Media	Sandblast Grit		Sandblast Grit		Soil		Sandblast Grit		Sandblast Grit		Soil		Sandblast Grit		Soil		Sandblast Grit		Soil	
Censoring Level for Undetected Results	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**
Aroclor 1016	1.17 U	10.6 U	1.24 U	11.3 U	1.41 U	12.8 U	1.24 U	11.3 U	1.09 U	9.90 U	1.22 U	11.1 U	1.18 U	10.8 U	1.33 U	12.1 U	1.23 U	11.2 U	1.38 U	12.5 U
Aroclor 1221	5.02 U	10.6 U	5.32 U	11.3 U	6.04 U	12.8 U	5.32 U	11.3 U	4.66 U	9.90 U	5.21 U	11.1 U	5.07 U	10.8 U	5.70 U	12.1 U	5.28 U	11.2 U	5.89 U	12.5 U
Aroclor 1232	4.00 U	10.6 U	4.24 U	11.3 U	4.82 U	12.8 U	4.24 U	11.3 U	3.72 U	9.90 U	4.16 U	11.1 U	4.05 U	10.8 U	4.55 U	12.1 U	4.21 U	11.2 U	4.70 U	12.5 U
Aroclor 1242	2.14 U	10.6 U	2.27 U	11.3 U	2.58 U	12.8 U	2.27 U	11.3 U	1.99 U	9.90 U	2.23 U	11.1 U	2.16 U	10.8 U	2.43 U	12.1 U	2.25 U	11.2 U	2.51 U	12.5 U
Aroclor 1248	5.32 U	10.6 U	5.64 U	11.3 U	6.41 U	12.8 U	5.64 U	11.3 U	4.95 U	9.90 U	5.54 U	11.1 U	5.39 U	10.8 U	6.05 U	12.1 U	5.60 U	11.2 U	6.26 U	12.5 U
Aroclor 1254	1.66 U	10.6 U	1.76 U	11.3 U	2.00 U	12.8 U	1.76 U	11.3 U	1.54 U	9.90 U	1.73 U	11.1 U	1.68 U	10.8 U	1.89 U	12.1 U	1.75 U	11.2 U	1.95 U	12.5 U
Aroclor 1260	**52.1**	**52.1**	**202**	**202**	2.00 U	12.8 U	**4.95 J**	**4.95 J**	**64.0**	**64.0**	**20.8**	**20.8**	**193**	**193**	**13.4**	**13.4**	**18.7**	**18.7**	**4.17 J**	**4.17 J**
Aroclor 1262	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1268	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PCBs as Aroclors [1]	**53.8 J**	**62.7 J**	**204 J**	**213 J**	4.00 U	25.6 U	**6.71 J**	**16.3 J**	**65.5 J**	**73.9 J**	**22.5 J**	**31.9 J**	**195 J**	**204 J**	**15.3 J**	**25.5 J**	**20.5 J**	**29.9 J**	**6.12 J**	**16.7 J**

Notes:
[1] Only Aroclors 1254 and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Sandlbast Area AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-5
Sandblast Area AOPC Soil (0 to >10 ft bgs) PCB Aroclor Analysis Results
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Site ID	SBB18		SBB18		SBB23		SBB24		TRA01		TRA01		TRA02		TRA03		TRA03		TRA04	
Sample ID	011205SBB18SBG		011205SBB20SS		011206SBB23SBG		011206SBB24SBG		011204TRA01SS		011204TRA14SS		011204TRA02SS		011204TRA03SS		011204TRA13SS		011204TRA04SS	
Sample Date	12/5/2001		12/5/2001		12/6/2001		12/6/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001		12/4/2001	
Sample Depth (feet bgs)	0-0.5		2.5		0-0.5		0-0.5		0-1		3.0		0-1		0-1		1.8		0-1	
Media	Sandblast Grit		Soil		Sandblast Grit		Sandblast Grit		Soil		Soil		Soil		Soil		Soil		Soil	
Censoring Level for Undetected Results	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**
Aroclor 1016	1.20 U	10.9 U	1.45 U	13.2 U	1.32 U	12.0 U	1.28 U	11.6 U	1.20 U	10.9 U	1.38 U	12.6 U	1.16 U	10.6 U	1.22 U	11.1 U	1.28 U	11.7 U	1.25 U	11.4 U
Aroclor 1221	5.15 U	10.9 U	6.21 U	13.2 U	5.67 U	12.0 U	5.49 U	11.6 U	5.16 U	10.9 U	5.91 U	12.6 U	4.98 U	10.6 U	5.24 U	11.1 U	5.49 U	11.7 U	5.37 U	11.4 U
Aroclor 1232	4.11 U	10.9 U	4.95 U	13.2 U	4.53 U	12.0 U	4.38 U	11.6 U	4.12 U	10.9 U	4.72 U	12.6 U	3.98 U	10.6 U	4.18 U	11.1 U	4.39 U	11.7 U	4.28 U	11.4 U
Aroclor 1242	2.20 U	10.9 U	2.65 U	13.2 U	2.42 U	12.0 U	2.34 U	11.6 U	2.20 U	10.9 U	2.52 U	12.6 U	2.13 U	10.6 U	2.24 U	11.1 U	2.34 U	11.7 U	2.29 U	11.4 U
Aroclor 1248	5.46 U	10.9 U	6.59 U	13.2 U	6.02 U	12.0 U	5.82 U	11.6 U	5.47 U	10.9 U	6.28 U	12.6 U	5.29 U	10.6 U	5.57 U	11.1 U	5.83 U	11.7 U	5.70 U	11.4 U
Aroclor 1254	1.70 U	10.9 U	2.06 U	13.2 U	1.88 U	12.0 U	1.82 U	11.6 U	1.71 U	10.9 U	1.96 U	12.6 U	1.65 U	10.6 U	1.74 U	11.1 U	1.82 U	11.7 U	1.78 U	11.4 U
Aroclor 1260	**17.4**	**17.4**	2.06 U	13.2 U	**7.09 J**	**7.09 J**	**6.95 J**	**6.95 J**	**23.5**	**23.5**	1.96 U	12.6 U	**42.2**	**42.2**	**43.2**	**43.2**	**2.64 J**	**2.64 J**	**98.8**	**98.8**
Aroclor 1262	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1268	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PCBs as Aroclors [1]	**19.1 J**	**28.3 J**	4.12 U	26.4 U	**8.97 J**	**19.1 J**	**8.77 J**	**18.6 J**	**25.2 J**	**34.4 J**	3.92 U	25.2 U	**43.9 J**	**52.8 J**	**44.9 J**	**54.3 J**	**4.46 J**	**14.3 J**	**101 J**	**110 J**

Notes:
[1] Only Aroclors 1254 and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Sandlbast Area AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-5
Sandblast Area AOPC Soil (0 to >10 ft bgs) PCB Aroclor Analysis Results
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Site ID	TRA05		TRA05		TRA06*		TRA07		TRA07		TRA09*		TRA11		TRA12		DP5		DP6	
Sample ID	011204TRA05SS		011206TRA16ss		011204TRA06SS		011204TRA07SS		011206TRA15ss		011204TRA09SS		011204TRA11SS		011204TRA12SS		041116SGA02SS		041117SGA04SS	
Sample Date	12/4/2001		12/6/2001		12/4/2001		12/4/2001		12/6/2001		12/4/2001		12/4/2001		12/4/2001		11/16/2004		11/17/2004	
Sample Depth (feet bgs)	0-1		2.5		0-1		0-1		2.0		0-1		0-1		0-1		21-23		15-17	
Media	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Censoring Level for Undetected Results	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**
Aroclor 1016	1.25 U	11.3 U	1.28 U	11.6 U	1.28 U	11.7 U	1.31 U	11.9 U	1.24 U	11.3 U	1.32 U	12.0 U	1.27 U	11.5 U	1.27 U	11.6 U	2.61 U	8.84 U	2.85 U	9.67 U
Aroclor 1221	5.34 U	11.3 U	5.47 U	11.6 U	5.49 U	11.7 U	5.61 U	11.9 U	5.33 U	11.3 U	5.67 U	12.0 U	5.42 U	11.5 U	5.44 U	11.6 U	2.61 U	8.84 U	2.85 U	9.67 U
Aroclor 1232	4.26 U	11.3 U	4.36 U	11.6 U	4.39 U	11.7 U	4.48 U	11.9 U	4.25 U	11.3 U	4.52 U	12.0 U	4.33 U	11.5 U	4.35 U	11.6 U	2.61 U	8.84 U	2.85 U	9.67 U
Aroclor 1242	2.28 U	11.3 U	2.33 U	11.6 U	2.22 U	11.1 U	2.39 U	11.9 U	2.27 U	11.3 U	2.42 U	12.0 U	2.31 U	11.5 U	2.32 U	11.6 U	2.61 U	8.84 U	2.85 U	9.67 U
Aroclor 1248	5.67 U	11.3 U	5.80 U	11.6 U	5.83 U	11.7 U	5.95 U	11.9 U	5.66 U	11.3 U	6.02 U	12.0 U	5.75 U	11.5 U	5.78 U	11.6 U	2.61 U	8.84 U	2.85 U	9.67 U
Aroclor 1254	1.77 U	11.3 U	1.81 U	11.6 U	1.82 U	11.7 U	1.86 U	11.9 U	1.76 U	11.3 U	1.88 U	12.0 U	1.80 U	11.5 U	1.80 U	11.6 U	1.43 U	8.84 U	1.57 U	9.67 U
Aroclor 1260	**121**	**121**	1.81 U	11.6 U	**65.8**	**65.8**	**21.7**	**21.7**	**4.42 J**	**4.42 J**	**26.8**	**26.8**	**282**	**282**	**96.2**	**96.2**	1.43 U	8.84 U	1.57 U	9.67 U
Aroclor 1262	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1268	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PCBs as Aroclors [1]	**123 J**	**132 J**	3.62 U	23.2 U	**67.6 J**	**77.5 J**	**23.6 J**	**33.6 J**	**6.18 J**	**15.7 J**	**28.7 J**	**38.8 J**	**284 J**	**294 J**	**98.0 J**	**108 J**	2.86 U	17.7 U	3.14 U	19.3 U

Notes:
[1] Only Aroclors 1254 and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Sandlbast Area AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-5
Sandblast Area AOPC Soil (0 to >10 ft bgs) PCB Aroclor Analysis Results
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Site ID	DP7*		DP8		DP9		HA1*		HA2		HA3		HA9		HA10		HA11		HA11	
Sample ID	041117SGA05SS		041117SGA08SS		041117SGA09SS		041122SGA14SS		041122SGA16SS		041122SGA17SS		041123SGA28SS		041123SGA29SS		041123SGA30SS		041123SGA31SS	
Sample Date	11/17/2004		11/17/2004		11/17/2004		11/22/2004		11/22/2004		11/22/2004		11/23/2004		11/23/2004		11/23/2004		11/23/2004	
Sample Depth (feet bgs)	14-16.5		13-15		14-17		0.5		0.5		0.5		0.5		0.5		1.0		3.0	
Media	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	2.76 U	9.34 U	2.65 U	8.98 U	3.00 U	10.2 U	3.41 U	11.6 U	3.01 U	10.2 U	3.23 U	10.9 U	3.15 U	10.7 U	2.90 U	9.83 U	3.48 U	11.8 U	3.47 U	11.8 U
Aroclor 1221	2.76 U	9.34 U	2.65 U	8.98 U	3.00 U	10.2 U	3.41 U	11.6 U	3.01 U	10.2 U	3.23 U	10.9 U	3.15 U	10.7 U	2.90 U	9.83 U	3.48 U	11.8 U	3.47 U	11.8 U
Aroclor 1232	2.76 U	9.34 U	2.65 U	8.98 U	3.00 U	10.2 U	3.41 U	11.6 U	3.01 U	10.2 U	3.23 U	10.9 U	3.15 U	10.7 U	2.90 U	9.83 U	3.48 U	11.8 U	3.47 U	11.8 U
Aroclor 1242	2.76 U	9.34 U	2.65 U	8.98 U	3.00 U	10.2 U	3.41 U	11.6 U	3.01 U	10.2 U	3.23 U	10.9 U	3.15 U	10.7 U	2.90 U	9.83 U	3.48 U	11.8 U	3.47 U	11.8 U
Aroclor 1248	2.76 U	9.34 U	2.65 U	8.98 U	3.00 U	10.2 U	3.41 U	11.6 U	3.01 U	10.2 U	3.23 U	10.9 U	3.15 U	10.7 U	2.90 U	9.83 U	3.48 U	11.8 U	3.47 U	11.8 U
Aroclor 1254	1.51 U	9.34 U	1.45 U	8.98 U	1.65 U	10.2 U	1.87 U	11.6 U	1.65 U	10.2 U	1.77 U	10.9 U	1.73 U	10.7 U	1.59 U	9.83 U	1.91 U	11.8 U	1.91 U	11.8 U
Aroclor 1260	1.51 U	9.34 U	1.45 U	8.98 U	1.65 U	10.2 U	**8.54 J**	**8.54 J**	**4.11 J**	**4.11 J**	**26.1**	**26.1**	**11.9**	**11.9**	1.59 U	9.83 U	**6.40 J**	**6.40 J**	1.91 U	11.8 U
Aroclor 1262	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1268	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PCBs as Aroclors [1]	3.02 U	18.7 U	2.90 U	18.0 U	3.30 U	20.4 U	**10.4 J**	**20.1 J**	**5.76 J**	**14.3 J**	**27.9 J**	**37.0 J**	**13.6 J**	**22.6 J**	3.18 U	19.7 U	**8.31 J**	**18.2 J**	3.82 U	23.6 U

Notes:
[1] Only Aroclors 1254 and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Sandlbast Area AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-5
Sandblast Area AOPC Soil (0 to >10 ft bgs) PCB Aroclor Analysis Results
(Page 1 of 8)

Site ID	LD-01		LD-01		LD-02		LD-02		LD-03		LD-03		LD-04		LD-04		LD-05		LD-05	
Sample ID	090320-LD-1So-0-1		090320-LD-1So-1-3		090320-LD-2So-0-1		090320-LD-2So-1-3		090320-LD-3So-0-1		090320-LD-3So-1-3		090320-LD-4So-0-1		090320-LD-4So-1-3		090320-LD-5So-0-1		090320-LD-5So-1-3	
Sample Date	3/20/2009		3/20/2009		3/20/2009		3/20/2009		3/20/2009		3/20/2009		3/20/2009		3/20/2009		3/20/2009		3/20/2009	
Sample Depth (feet bgs)	0-1		1-3		0-1		1-3		0-1		1-3		0-1		1-3		0-1		1-3	
Media	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Censoring Level for Undetected Results	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**
Aroclor 1016	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	9.80 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	9.90 U	11.0 U	49.0 U	2.10 U	9.70 U
Aroclor 1221	2.10 U	20.0 U	2.10 U	20.0 U	2.10 U	20.0 U	2.10 U	20.0 U	2.10 U	20.0 U	2.10 U	20.0 U	2.10 U	20.0 U	2.10 U	20.0 U	11.0 U	98.0 U	2.10 U	20.0 U
Aroclor 1232	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	9.80 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	9.90 U	11.0 U	49.0 U	2.10 U	9.70 U
Aroclor 1242	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	9.80 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	9.90 U	11.0 U	49.0 U	2.10 U	9.70 U
Aroclor 1248	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	9.80 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	9.90 U	11.0 U	49.0 U	2.10 U	9.70 U
Aroclor 1254	**700**	**700**	**23.0**	**23.0**	**280**	**280**	**16.0**	**16.0**	**160**	**160**	**11.0**	**11.0**	2.10 U	10.0 U	2.10 U	9.90 U	**1,500**	**1,500**	**230**	**230**
Aroclor 1260	**690**	**690**	**22.0**	**22.0**	**130**	**130**	**18.0**	**18.0**	**160**	**160**	**11.0**	**11.0**	2.10 U	10.0 U	2.10 U	9.90 U	**480**	**480**	**130**	**130**
Aroclor 1262	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	9.80 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	9.90 U	11.0 U	49.0 U	2.10 U	9.70 U
Aroclor 1268	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	9.80 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	9.90 U	11.0 U	49.0 U	2.10 U	9.70 U
Total PCBs as Aroclors [1]	**1390**	**1390**	**45.0**	**45.0**	**410**	**410**	**34.0**	**34.0**	**320**	**320**	**22.0**	**22.0**	4.20 U	20.0 U	4.20 U	19.8 U	**1980**	**1980**	**360**	**360**

Notes:
[1] Only Aroclors 1254 and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Sandlbast Area AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-5
Sandblast Area AOPC Soil (0 to >10 ft bgs) PCB Aroclor Analysis Results
(Page 2 of 8)

Site ID	LD-06		LD-07		LD-08		LD-09		LD-10		LD-11*		SB-EUA*		SB-EUB	
Sample ID	090319-LD-6-So		090319-LD-7-So		090319-LD-8-So		090319-LD-9-So		090319-LD-10-So		090319-LD-11-So		090318-SB-EUA-So		090318-SB-EUB-So	
Sample Date	3/19/2009		3/19/2009		3/19/2009		3/19/2009		3/19/2009		3/19/2009		3/18/2009		3/18/2009	
Sample Depth (feet bgs)	0-0.17		0-0.17		0-0.17		0-0.17		0-0.17		0-0.17		0-0.17		0-0.17	
Media	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	2.10 U	9.90 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	11.0 U	50.0 U	2.10 U	9.90 U	2.10 U	6.30 U	2.10 U	6.60 U
Aroclor 1221	2.10 U	20.0 U	2.10 U	20.0 U	2.10 U	20.0 U	2.10 U	20.0 U	11.0 U	100 U	2.10 U	20.0 U	2.10 U	13.0 U	2.10 U	14.0 U
Aroclor 1232	2.10 U	9.90 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	11.0 U	50.0 U	2.10 U	9.90 U	2.10 U	6.30 U	2.10 U	6.60 U
Aroclor 1242	2.10 U	9.90 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	11.0 U	50.0 U	2.10 U	9.90 U	2.10 U	6.30 U	2.10 U	6.60 U
Aroclor 1248	2.10 U	9.90 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	11.0 U	50.0 U	2.10 U	9.90 U	2.10 U	6.30 U	2.10 U	6.60 U
Aroclor 1254	2.10 U	9.90 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	**1,700**	**1,700**	**475**	**475**	2.10 U	6.30 U	2.10 U	6.60 U
Aroclor 1260	**50.0**	**50.0**	**660 J**	**660 J**	2.10 U	10.0 U	**7.50 J**	**7.50 J**	**440**	**440**	**215**	**215**	**27.0**	**27.0**	**67.0**	**67.0**
Aroclor 1262	2.10 U	9.90 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	11.0 U	50.0 U	2.10 U	9.90 U	2.10 U	6.30 U	2.10 U	6.60 U
Aroclor 1268	2.10 U	9.90 U	2.10 U	10.0 U	2.10 U	10.0 U	2.10 U	10.0 U	11.0 U	50.0 U	2.10 U	9.90 U	2.10 U	6.30 U	2.10 U	6.60 U
Total PCBs as Aroclors [1]	**52.1 J**	**59.9 J**	**662 J**	**670 J**	4.20 U	20.0 U	**9.60 J**	**17.5 J**	**2140**	**2140**	**690**	**690**	**29.1 J**	**33.3 J**	**69.1 J**	**73.6 J**

Notes:
[1] Only Aroclors 1254 and 1260 were included in summing Total PCBs as Aroclors because all other aroclors were undected in Sandlbast Area AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-6
Bulb Slope AOPC Soil (0-1 ft bgs) PCB Aroclor Analysis Results
(Page 1 of 2)

Site ID	AREA A04		AREA A05		AREA B06		AREA B07		AREA C01		AREA C02*	
Sample ID	021120BSA04SS		021120BSA05SS		021120BSB06SS		021120BSB07SS		021120BSC01SS		021120BSC02SS	
Sample Date	11/20/2002		11/20/2002		11/20/2002		11/20/2002		11/20/2002		11/20/2002	
Sample Depth (feet bgs)	0.17-0.33		0.17-0.33		0.17-0.33		0.17-0.33		0.08-0.25		0.17-0.33	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	20.0 U	20.0 U	19.0 U	19.0 U	19.0 U	19.0 U	20.0 U	20.0 U	20.0 U	20.0 U	19.0 U	19.0 U
Aroclor 1221	40.0 U	40.0 U	39.0 U	39.0 U	38.0 U	38.0 U	39.0 U	39.0 U	39.0 U	39.0 U	38.0 U	38.0 U
Aroclor 1232	20.0 U	20.0 U	19.0 U	19.0 U	19.0 U	19.0 U	20.0 U	20.0 U	20.0 U	20.0 U	19.0 U	19.0 U
Aroclor 1242	20.0 U	20.0 U	19.0 U	19.0 U	19.0 U	19.0 U	20.0 U	20.0 U	20.0 U	20.0 U	19.0 U	19.0 U
Aroclor 1248	20.0 U	20.0 U	19.0 U	19.0 U	19.0 U	19.0 U	20.0 U	20.0 U	20.0 U	20.0 U	19.0 U	19.0 U
Aroclor 1254	20.0 U	54.0 U	19.0 U	19.0 U	19.0 U	33.0 U	20.0 U	20.0 U	20.0 U	20.0 U	19.0 U	19.0 U
Aroclor 1260	**78.0**	**78.0**	**37.0**	**37.0**	**160**	**160**	**35.0**	**35.0**	**27.0**	**27.0**	19.0 U	19.0 U
Total PCBs as Aroclors [1]	**78.0**	**78.0**	**37.0**	**37.0**	**160**	**160**	**35.0**	**35.0**	**27.0**	**27.0**	19.0 U	19.0 U

Notes:
[1] Only Aroclor 1260 was included in summing Total PCBs as Aroclors because all other aroclors were undected in Bulb Slope AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-6
Bulb Slope AOPC Soil (0-1 ft bgs) PCB Aroclor Analysis Results
(Page 2 of 2)

Site ID	AREA C08		AREA C09		PILE #3 BANK #1		PILE #3 BANK #2		PILE #3 BANK #3		PILE #3 BANK #4	
Sample ID	021120BSC08SS		021120BSC09SS		020419P3B1SD		020419P3B2SD		020419P3B3SD		020419P3B4SD	
Sample Date	11/20/2002		11/20/2002		4/19/2002		4/19/2002		4/19/2002		4/19/2002	
Sample Depth (feet bgs)	0.17-0.33		0.17-0.33		0		0		0		0	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	20.0 U	20.0 U	20.0 U	20.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U
Aroclor 1221	39.0 U	39.0 U	40.0 U	40.0 U	134 U	134 U	134 U	134 U	134.0 U	134.0 U	134 U	134 U
Aroclor 1232	20.0 U	20.0 U	20.0 U	20.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U
Aroclor 1242	20.0 U	20.0 U	20.0 U	20.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U
Aroclor 1248	20.0 U	20.0 U	20.0 U	20.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U
Aroclor 1254	20.0 U	20.0 U	20.0 U	20.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U	67.0 U
Aroclor 1260	**51.0**	**51.0**	20.0 U	20.0 U	67.0 U	67.0 U	**76.1**	**76.1**	67.0 U	67.0 U	**251**	**251**
Total PCBs as Aroclors [1]	**51.0**	**51.0**	20.0 U	20.0 U	67.0 U	67.0 U	**76.1**	**76.1**	67.0 U	67.0 U	**251**	**251**

Notes:
[1] Only Aroclor 1260 was included in summing Total PCBs as Aroclors because all other aroclors were undected in Bulb Slope AOPC soil samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1
All units are in micrograms per kilogram (µg/kg), dry weight

Table H-7
Smallmouth Bass and Sucker PCB Congener Analysis Results
(Page 1 of 12)

IUPAC #	COELUTING CONGENERS1	Forebay 01 060605100SB 6/5/2006		Forebay 02 060605101SB 6/5/2006		Forebay 03 060605200SB 6/5/2006		Forebay 04 060605201SB 6/5/2006		Forebay 05 060605202SB 6/5/2006		Forebay 06 060605203SB 6/5/2006	
Individual Congeners in pg/g (ng/kg), wet weight													
1		0.186	UJ	0.650	J	0.747	J	0.234	UJ	0.189	UJ	0.346	J
2		0.0880	EMPC	0.698	J	0.482	J	0.129	J	0.276	J	0.407	J
3		0.144	UJ	0.437	UJ	0.438	UJ	0.125	UJ	0.154	UJ	0.378	UJ
4		1.62	J	4.27	J	2.03	J	1.93	J	1.53	J	3.58	J
5		0.124	UJ	0.285	J	0.193	J	0.138	J	0.0720	J	0.222	J
6		0.756	J	2.01	J	1.95	J	1.07	J	1.01	J	1.98	J
7		0.154	J	0.610	J	0.366	J	0.250	J	0.234	J	0.428	J
8		3.33	J	8.87	J	4.46	J	5.10	J	4.44	J	8.56	J
9		0.217	J	0.664	J	0.361	J	0.297	J	0.283	J	0.600	J
10		0.114	UJ	0.267	J	0.125	UJ	0.112	UJ	0.0980	J	0.186	J
11		9.35	J	92.7	J	11.5	J	8.08	J	25.4	J	41.4	J
12	12 + 13	0.111	C UJ	1.12	C J	1.48	C J	0.317	C J	0.0585	C UJ	0.736	C J
13	12 + 13		C12 J		C12 J		C12 J		C12 J		C12 J		C12 J
14		0.112	UJ	0.149	J	0.123	UJ	0.107	UJ	0.0587	UJ	0.0920	J
15		1.25	J	2.68	J	1.31	J	1.02	J	0.809	J	1.91	J
16		4.05	J	11.1	J	5.60	J	8.25	J	6.42	J	11.8	J
17		6.52	J	24.2	J	10.1	J	16.7	J	10.2	J	20.9	J
18	18 + 30	13.9	C J	40.3	C J	19.4	C J	34.3	C J	21.9	C J	43.6	C J
19		1.42	J	3.18	J	1.65	J	2.24	J	1.74	J	3.35	J
20	20 + 28	66.1	C J	255	C J	132	C J	196	C J	99.9	C J	241	C J
21	21 + 33	13.4	C J	34.9	C J	16.8	C J	40.5	C J	18.7	C J	42.7	C J
22		12.4	J	32.9	J	13.2	J	34.1	J	19.2	J	50.5	J
23		0.0849	UJ	0.342	J	0.153	J	0.140	J	0.0860	J	0.293	J
24		0.271	J	0.667	J	0.315	J	0.496	J	0.405	J	1.00	J
25		2.36	J	21.1	J	4.53	J	6.41	J	3.86	J	10.5	J
26	26 + 29	7.60	C J	43.6	C J	13.2	C J	21.4	C J	10.5	C J	28.3	C J
27		0.875	J	4.66	J	1.48	J	2.01	J	1.46	J	3.80	J
28	20 + 28		C20 J		C20 J		C20 J		C20 J		C20 J		C20 J
29	26 + 29		C26 J		C26 J		C26 J		C26 J		C26 J		C26 J
30	18 + 30		C18 J		C18 J		C18 J		C18 J		C18 J		C18 J
31		32.3	J	150	J	46.4	J	90.7	J	55.6	J	147	J
32		2.13	J	12.1	J	2.71	J	6.56	J	2.87	J	6.36	J
33	21 + 33		C21 J		C21 J		C21 J		C21 J		C21 J		C21 J
34		0.0880	J	1.23	J	0.286	J	0.297	J	0.222	J	0.764	J
35		0.0861	UJ	0.0894	UJ	0.148	EMPC	0.129	UJ	0.0812	UJ	0.0808	UJ
36		0.0781	UJ	0.0811	UJ	0.0839	UJ	0.118	UJ	0.0737	UJ	0.0734	UJ
37		5.02	J	39.8	J	13.4	J	6.44	J	6.15	J	17.1	J
38		0.0790	EMPC	1.65	EMPC	0.176	EMPC	0.149	EMPC	0.112	EMPC	0.253	EMPC
39		0.504	J	8.73	EMPC	0.859	J	0.930	EMPC	0.507	J	1.65	J
40	40 + 41 + 71	28.9	C J	1,180	C J	43.8	C J	64.5	C J	42.2	C J	114	C J
41	40 + 41 + 71		C40 J		C40 J		C40 J		C40 J		C40 J		C40 J
42		21.8	J	544	J	42.4	J	43.9	J	31.6	J	112	J
43		4.32	J	91.7	J	9.09	J	13.2	J	7.36	J	18.1	J
44	44 + 47 + 65	152	C J	6,390	C J	1,290	C J	401	C J	253	C J	641	C J
45	45 + 51	6.02	C J	105	C J	10.8	C J	12.9	C J	10.7	C J	29.8	C J
46		1.22	J	15.9	J	1.58	J	2.55	J	2.27	J	4.43	J
47	44 + 47 + 65		C44 J		C44 J		C44 J		C44 J		C44 J		C44 J
48		19.4	J	352	J	32.2	J	46.2	J	25.9	J	79.0	J
49	49 + 69	121	C J	5,360	C J	1,490	C J	317	C J	179	C J	545	C J
50	50 + 53	5.72	C J	249	C J	8.88	C J	10.1	C J	8.80	C J	26.9	C J
51	45 + 51		C45 J		C45 J		C45 J		C45 J		C45 J		C45 J
52		289	J	18,500	J	3,240	J	723	J	476	J	1,220	J
53	50 + 53		C50 J		C50 J		C50 J		C50 J		C50 J		C50 J
54		0.0690	J	1.81	J	0.140	UJ	0.336	J	0.190	J	0.523	J
55		0.202	UJ	0.840	UJ	0.563	UJ	0.311	UJ	0.225	UJ	0.549	UJ
56		18.9	J	1,030	J	272	J	45.6	J	43.9	J	136	J
57		0.920	J	4.37	J	6.79	J	2.03	J	1.44	J	3.01	J
58		0.430	J	0.834	UJ	0.559	UJ	1.51	J	0.221	UJ	0.541	UJ
59	59 + 62 + 75	12.5	C J	131	C J	28.8	C J	31.3	C J	18.2	C J	48.8	C J
60		66.7	J	1,410	J	1,200	J	226	J	91.2	J	237	J
61	61 + 70 + 74 + 76	464	C J	23,500	C J	19,500	C J	1,410	C J	729	C J	2,260	C J
62	59 + 62 + 75		C59 J		C59 J		C59 J		C59 J		C59 J		C59 J
63		24.3	J	368	J	451	J	59.2	J	27.6	J	69.7	J
64		68.3	J	2,610	J	113	J	167	J	113	J	317	J
65	44 + 47 + 65		C44 J		C44 J		C44 J		C44 J		C44 J		C44 J
66		401	J	10,300	J	10,300	J	1,030	J	483	J	1,160	J
67		2.44	J	27.2	J	23.5	J	8.32	J	3.64	J	11.6	J
68		6.74	J	23.5	J	30.1	J	9.21	J	7.08	J	14.4	J
69	49 + 69		C49 J		C49 J		C49 J		C49 J		C49 J		C49 J
70	61 + 70 + 74 + 76		C61 J		C61 J		C61 J		C61 J		C61 J		C61 J
71	40 + 41 + 71		C40 J		C40 J		C40 J		C40 J		C40 J		C40 J
72		4.75	J	39.8	J	33.0	J	12.0	J	7.05	J	15.9	J
73		0.0495	UJ	0.0499	UJ	0.127	UJ	0.0805	UJ	0.0616	UJ	0.0496	UJ
74	61 + 70 + 74 + 76		C61 J		C61 J		C61 J		C61 J		C61 J		C61 J
75	59 + 62 + 75		C59 J		C59 J		C59 J		C59 J		C59 J		C59 J
76	61 + 70 + 74 + 76		C61 J		C61 J		C61 J		C61 J		C61 J		C61 J
77		24.1	J	165	J	205	J	44.8	J	31.5	J	70.3	J
78		0.776	J	16.2	J	31.4	J	1.94	J	0.226	UJ	0.551	UJ
79		4.67	J	683	J	596	J	12.4	J	9.99	J	54.2	J
80		0.176	UJ	0.734	UJ	0.492	UJ	0.279	UJ	0.202	UJ	0.493	UJ
81		1.43	J	19.5	J	23.8	J	3.84	J	2.05	J	4.22	J
82		49.1	J	10,100	J	680	J	78.1	J	95.2	J	296	J
83	83 + 99	1,550	C J	75,300	C J	63,200	C J	5,230	C J	1,820	C J	5,930	C J
84		65.3	J	14,200	J	196	J	125	J	154	J	438	J
85	85 + 116 + 117	464	C J	23,400	C J	18,600	C J	1,470	C J	549	C J	1,650	C J
86	86 + 87 + 97 + 108 + 119 + 125	750	C J	78,300	C J	22,600	C J	1,480	C J	934	C J	3,740	C J
87	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
88	88 + 91	79.4	C J	10,500	C J	608	C J	144	C J	126	C J	487	C J
89		1.87	J	347	J	3.28	J	4.08	J	3.90	J	10.3	J
90	90 + 101 + 113	1,490	C J	117,000	C J	35,800	C J	3,020	C J	1,750	C J	6,610	C J
91	88 + 91		C88 J		C88 J		C88 J		C88 J		C88 J		C88 J
92		272	J	17,600	J	3,430	J	669	J	353	J	1,040	J
93	93 + 95 + 98 + 100 + 102	437	C J	47,700	C J	6,020	C J	939	C J	659	C J	2,360	C J
94		0.746	UJ	88.1	J	1.27	J	1.14	J	1.48	J	5.90	J
95	93 + 95 + 98 + 100 + 102		C93 J		C93 J		C93 J		C93 J		C93 J		C93 J
96		1.41	J	161	J	2.72	J	3.82	J	2.37	J	6.22	J
97	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
98	93 + 95 + 98 + 100 + 102		C93 J		C93 J		C93 J		C93 J		C93 J		C93 J
99	83 + 99		C83 J		C83 J		C83 J		C83 J		C83 J		C83 J
100	93 + 95 + 98 + 100 + 102		C93 J		C93 J		C93 J		C93 J		C93 J		C93 J
101	90 + 101 + 113		C90 J		C90 J		C90 J		C90 J		C90 J		C90 J
102	93 + 95 + 98 + 100 + 102		C93 J		C93 J		C93 J		C93 J		C93 J		C93 J
103		5.30	J	306	J	52.3	J	10.9	J	8.31	J	28.5	J
104		0.0667	UJ	0.994	J	0.252	UJ	0.156	EMPC	0.112	EMPC	0.536	J
105		966	J	50,400	J	45,500	J	2,980	J	1,230	J	3,540	J
106		0.375	UJ	4.07	UJ	3.99	UJ	0.748	UJ	0.433	UJ	0.753	UJ
107	107 + 124	64.3	C J	3,230	C J	3,810	C J	118	C J	60.3	C J	377	C J
108	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
109		295	J	8,940	J	10,600	J	584	J	317	J	954	J
110	110 + 115	1,080	C J	120,000	C J	7,140	C J	2,190	C J	1,500	C J	4,920	C J
111		2.87	J	4.22	J	5.84	J	6.44	J	3.53	J	5.73	EMPC
112		0.479	UJ	1.01	UJ	0.365	UJ	0.231	UJ	0.590	UJ	0.178	UJ
113	90 + 101 + 113		C90 J		C90 J		C90 J		C90 J		C90 J		C90 J
114		92.6	J	3,200	J	4,040	J	281	J	106	J	337	J
115	110 + 115		C110 J		C110 J		C110 J		C110 J		C110 J		C110 J
116	85 + 116 + 117		C85 J		C85 J		C85 J		C85 J		C85 J		C85 J
117	85 + 116 + 117		C85 J		C85 J		C85 J		C85 J		C85 J		C85 J
118		3,310	J	138,000	J	132,000	J	8,310	J	3,610	J	10,800	J
119	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
120		15.0	J	51.7	J	35.1	J	28.2	J	17.5	J	28.5	J
121		1.32	J	4.33	J	1.56	J	3.64	J	1.80	J	3.53	J
122		0.413	UJ	474	J	523	J	0.876	UJ	11.0	J	56.3	J
123		55.7	J	1,600	J	2,450	J	118	J	63.3	J	217	J
124	107 + 124		C107 J		C107 J		C107 J		C107 J		C107 J		C107 J
125	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
126		5.05	J	55.3	J	75.5	J	9.74	J	8.07	J	15.9	J

Table H-7
Smallmouth Bass and Sucker PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay 01 060605100SB 6/5/2006		Forebay 02 060605101SB 6/5/2006		Forebay 03 060605200SB 6/5/2006		Forebay 04 060605201SB 6/5/2006		Forebay 05 060605202SB 6/5/2006		Forebay 06 060605203SB 6/5/2006	
127		6.90	J	241	J	265	J	26.8	J	7.03	J	34.4	J
128	128 + 166	603	C J	30,800	C J	21,000	C J	2,300	C J	806	C J	2,500	C J
129	129 + 138 + 160 + 163	4,320	C J	168,000	C J	126,000	C J	14,000	C J	5,220	C J	16,200	C J
130		172	J	9,060	J	7,720	J	302	J	232	J	1,060	J
131		9.50	J	1,520	J	395	J	16.5	J	16.9	J	119	J
132		228	J	38,700	J	3,080	J	421	J	399	J	1,910	J
133		83.5	J	1,460	J	1,450	J	208	J	96.5	J	281	J
134	134 + 143	48.6	C J	5,130	C J	3,170	C J	83.2	C J	75.3	C J	458	C J
135	135 + 151 + 154	492	C J	19,700	C J	4,910	C J	1,220	C J	703	C J	2,380	C J
136		87.0	J	9,020	J	247	J	172	J	118	J	439	J
137		283	J	11,900	J	15,300	J	1,100	J	317	J	1,220	J
138	129 + 138 + 160 + 163		C129 J		C129 J		C129 J		C129 J		C129 J		C129 J
139	139 + 140	68.7	C J	3,090	C J	1,660	C J	271	C J	81.4	C J	284	C J
140	139 + 140		C139 J		C139 J		C139 J		C139 J		C139 J		C139 J
141		250	J	18,800	J	5,770	J	723	J	294	J	1,210	J
142		0.661	UJ	2.91	UJ	2.57	UJ	1.36	UJ	0.699	UJ	0.756	UJ
143	134 + 143		C134 J		C134 J		C134 J		C134 J		C134 J		C134 J
144		52.3	J	3,490	J	1,920	J	96.6	J	67.5	J	361	J
145		0.174	EMPC	37.9	J	0.585	J	0.481	J	0.322	J	1.27	J
146		883	J	16,000	J	19,000	J	1,720	J	966	J	2,950	J
147	147 + 149	725	C J	59,800	C J	31,700	C J	1,220	C J	1,160	C J	6,370	C J
148		3.39	J	61.2	J	8.95	J	8.09	J	5.48	J	17.1	J
149	147 + 149		C147 J		C147 J		C147 J		C147 J		C147 J		C147 J
150		1.44	J	72.4	J	13.1	J	2.61	J	2.41	J	11.6	J
151	135 + 151 + 154		C135 J		C135 J		C135 J		C135 J		C135 J		C135 J
152		1.04	J	81.4	J	3.55	J	2.90	J	1.28	J	3.86	J
153	153 + 168	4,920	C J	111,000	C J	117,000	C J	16,100	C J	5,540	C J	16,800	C J
154	135 + 151 + 154		C135 J		C135 J		C135 J		C135 J		C135 J		C135 J
155		3.50	J	14.4	J	3.36	J	9.17	J	4.27	J	8.39	J
156	156 + 157	654	C J	26,600	C J	31,400	C J	2,220	C J	735	C J	2,890	C J
157	156 + 157		C156 J		C156 J		C156 J		C156 J		C156 J		C156 J
158		304	J	17,400	J	12,900	J	1,400	J	403	J	1,520	J
159		4.52	J	179	J	121	J	8.30	J	8.21	J	41.0	J
160	129 + 138 + 160 + 163		C129 J		C129 J		C129 J		C129 J		C129 J		C129 J
161		0.434	UJ	1.91	UJ	1.69	UJ	0.944	UJ	0.485	UJ	0.525	UJ
162		23.2	J	530	J	610	J	63.5	J	27.0	J	90.1	J
163	129 + 138 + 160 + 163		C129 J		C129 J		C129 J		C129 J		C129 J		C129 J
164		97.0	J	7,230	J	6,480	J	192	J	131	J	643	J
165		2.69	J	23.3	J	17.3	J	7.27	J	3.30	J	8.05	J
166	128 + 166		C128 J		C128 J		C128 J		C128 J		C128 J		C128 J
167		226	J	6,500	J	9,650	J	428	J	239	J	961	J
168	153 + 168		C153 J		C153 J		C153 J		C153 J		C153 J		C153 J
169		1.52	UJ	7.28	UJ	4.49	UJ	2.75	UJ	1.29	UJ	5.03	UJ
170		457	J	12,100	J	9,940	J	2,280	J	661	J	2,100	J
171	171 + 173	150	C J	3,890	C J	1,810	C J	685	C J	233	C J	711	C J
172		69.6	J	1,560	J	1,280	J	299	J	106	J	380	J
173	171 + 173		C171 J		C171 J		C171 J		C171 J		C171 J		C171 J
174		104	J	4,840	J	3,590	J	209	J	182	J	994	J
175		18.4	J	314	J	237	J	46.3	J	24.9	J	94.3	J
176		17.2	J	624	J	211	J	29.3	J	29.1	J	191	J
177		251	J	3,800	J	3,400	J	371	J	344	J	1,630	J
178		171	J	1,580	J	1,080	J	476	J	236	J	720	J
179		92.8	J	1,840	J	191	J	210	J	159	J	686	J
180	180 + 193	1,460	C J	20,600	C J	18,800	C J	5,930	C J	2,020	C J	5,400	C J
181		10.8	J	357	J	397	J	42.4	J	13.0	J	56.9	J
182		3.79	J	81.8	J	34.7	J	16.9	J	7.22	J	16.1	J
183	183 + 185	426	C J	6,240	C J	4,050	C J	1,620	C J	573	C J	1,660	C J
184		3.59	J	24.4	J	7.99	J	10.1	J	4.56	J	10.7	J
185	183 + 185		C183 J		C183 J		C183 J		C183 J		C183 J		C183 J
186		0.0545	UJ	5.14	J	0.189	UJ	0.107	UJ	0.0710	UJ	0.0926	UJ
187		1,510	J	8,670	J	7,970	J	2,500	J	1,730	J	4,520	J
188		3.76	J	18.2	J	12.3	J	6.22	J	4.27	J	10.8	J
189		21.6	J	482	J	531	J	75.9	J	25.0	J	113	J
190		180	J	2,350	J	1,570	J	647	J	229	J	624	J
191		27.5	J	465	J	419	J	117	J	34.8	J	98.0	J
192		0.0591	UJ	0.504	UJ	0.205	UJ	0.122	UJ	0.0810	UJ	0.106	UJ
193	180 + 193		C180 J		C180 J		C180 J		C180 J		C180 J		C180 J
194		170	J	1,720	J	1,170	J	688	J	215	J	654	J
195		85.6	J	777	J	433	J	357	J	125	J	330	J
196		117	J	881	J	597	J	445	J	141	J	349	J
197	197 + 200	19.2	C J	189	C J	88.1	C J	60.8	C J	26.1	C J	105	C J
198	198 + 199	243	C J	1,610	C J	1,150	C J	547	C J	277	C J	896	C J
199	198 + 199		C198 J		C198 J		C198 J		C198 J		C198 J		C198 J
200	197 + 200		C197 J		C197 J		C197 J		C197 J		C197 J		C197 J
201		41.0	J	226	J	135	J	76.8	J	47.0	J	159	J
202		104	J	642	J	296	J	284	J	128	J	486	J
203		241	J	1,620	J	702	J	828	J	279	J	804	J
204		0.401	J	1.71	J	0.991	J	1.09	J	0.527	J	1.17	J
205		11.1	J	97.9	J	42.2	J	39.9	J	14.0	J	49.8	J
206		93.9	J	749	J	335	J	276	J	103	J	364	J
207		18.9	J	107	J	60.7	J	50.6	J	21.5	J	56.0	J
208		30.3	J	163	J	95.8	J	57.8	J	35.3	J	132	J
209		39.1	J	164	J	83.2	J	74.2	J	43.0	J	140	J
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full RDL)		33.7	J	1,440	J	879	J	96.7	J	42.0	J	137	J
Total PCBs as Congeners (KM-based)		33.7	J	1,440	J	879	J	96.7	J	42.0	J	137	J
Total PCBs as Congeners (KM-based, capped)		33.7	J	1,440	J	879	J	96.7	J	42.0	J	137	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-7
Smallmouth Bass and Sucker PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay 07 060605204SB 6/5/2006		Forebay 08 060605205SB 6/5/2006		Forebay 09 060605207SB 6/5/2006		Forebay 10 060605208SB 6/5/2006		Forebay 11 060605209SB 6/5/2006		Forebay 12 060606102SB 6/6/2006	
Individual Congeners in pg/g (ng/kg), wet weight													
1		0.309	UJ	0.773	J	0.243	UJ	0.293	UJ	1.73	J	0.572	J
2		0.614	J	0.561	J	0.370	J	0.519	J	1.46	J	0.686	J
3		0.271	UJ	0.442	UJ	0.241	UJ	0.253	UJ	1.07	J	0.372	UJ
4		5.78	J	3.17	J	3.09	J	2.50	J	8.16	J	2.95	J
5		0.247	J	0.230	J	0.156	J	0.203	UJ	0.784	J	0.353	UJ
6		2.86	J	1.61	J	1.77	J	1.45	J	9.01	J	3.84	J
7		0.517	J	0.449	J	0.347	J	0.313	J	3.98	J	0.315	UJ
8		11.3	J	6.68	J	7.60	J	7.19	J	40.1	J	6.89	J
9		0.701	J	0.579	J	0.385	J	0.381	J	5.89	J	0.387	J
10		0.337	J	0.176	J	0.155	J	0.186	UJ	0.422	J	0.323	UJ
11		130	J	53.0	J	57.2	J	95.6	J	136	J	39.3	J
12	12 + 13	0.0580	C UJ	1.77	C J	0.122	C UJ	0.178	C UJ	5.72	C J	2.78	C J
13	12 + 13		C12 J		C12 J		C12 J		C12 J		C12 J		C12 J
14		0.157	J	0.122	J	0.127	J	0.179	UJ	0.264	J	0.321	UJ
15		3.49	J	1.95	J	1.85	J	2.53	J	14.1	J	2.10	J
16		19.1	J	9.76	J	10.2	J	10.6	J	39.5	J	7.89	J
17		39.4	J	27.2	J	16.4	J	17.3	J	317	J	13.3	J
18	18 + 30	59.7	C J	44.0	C J	34.1	C J	39.2	C J	825	C J	26.5	C J
19		9.56	J	2.79	J	2.77	J	2.87	J	8.54	J	2.73	J
20	20 + 28	235	C J	414	C J	149	C J	276	C J	5,550	C J	124	C J
21	21 + 33	46.2	C J	39.0	C J	27.6	C J	42.7	C J	606	C J	21.5	C J
22		57.0	J	33.8	J	28.6	J	56.3	J	380	J	18.9	J
23		0.162	J	0.351	J	0.135	UJ	0.239	J	1.95	UJ	0.474	UJ
24		1.10	J	0.754	J	0.657	J	0.698	EMPC	2.82	J	0.510	J
25		10.7	J	12.0	J	4.48	J	9.33	J	418	J	4.30	J
26	26 + 29	27.8	C J	49.1	C J	15.6	C J	24.9	C J	745	C J	13.9	C J
27		7.72	J	4.79	J	2.52	J	3.03	J	46.8	J	2.19	J
28	20 + 28		C20 J		C20 J		C20 J		C20 J		C20 J		C20 J
29	26 + 29		C26 J		C26 J		C26 J		C26 J		C26 J		C26 J
30	18 + 30		C18 J		C18 J		C18 J		C18 J		C18 J		C18 J
31		118	J	117	J	79.5	J	127	J	5,070	J	66.7	J
32		10.2	J	14.3	J	3.98	J	6.27	J	198	J	3.98	J
33	21 + 33		C21 J		C21 J		C21 J		C21 J		C21 J		C21 J
34		0.852	J	0.758	J	0.326	J	0.544	EMPC	7.40	J	0.464	UJ
35		0.0913	UJ	0.111	UJ	0.142	UJ	0.155	UJ	2.13	UJ	0.486	UJ
36		0.0829	UJ	0.101	UJ	0.129	UJ	0.141	UJ	1.88	UJ	0.449	UJ
37		24.5	J	46.5	J	10.3	J	19.9	J	696	J	15.2	J
38		0.168	EMPC	1.01	EMPC	0.186	J	0.406	EMPC	12.3	J	0.445	UJ
39		1.47	J	6.17	J	0.993	J	1.56	EMPC	112	EMPC	1.51	J
40	40 + 41 + 71	107	C J	653	C J	51.7	C J	119	C J	14,200	C J	95.0	C J
41	40 + 41 + 71		C40 J		C40 J		C40 J		C40 J		C40 J		C40 J
42		98.2	J	541	J	39.6	J	123	J	10,100	J	66.8	J
43		14.0	J	97.3	J	8.42	J	19.8	J	1,990	J	23.1	J
44	44 + 47 + 65	450	C J	6,430	C J	302	C J	850	C J	138,000	C J	894	C J
45	45 + 51	31.2	C J	64.9	C J	11.9	C J	27.0	C J	1,040	C J	14.0	C J
46		5.76	J	8.54	J	2.51	J	4.15	J	96.3	J	2.43	J
47	44 + 47 + 65		C44 J		C44 J		C44 J		C44 J		C44 J		C44 J
48		70.0	J	299	J	37.0	J	77.8	J	4,900	J	56.7	J
49	49 + 69	346	C J	7,290	C J	236	C J	636	C J	123,000	C J	886	C J
50	50 + 53	27.9	C J	132	C J	8.52	C J	27.8	C J	3,160	C J	13.7	C J
51	45 + 51		C45 J		C45 J		C45 J		C45 J		C45 J		C45 J
52		678	J	24,100	J	585	J	1,180	J	351,000	J	2,990	J
53	50 + 53		C50 J		C50 J		C50 J		C50 J		C50 J		C50 J
54		2.13	J	1.45	J	0.266	J	0.677	J	7.71	J	0.573	UJ
55		0.445	UJ	0.677	UJ	0.360	UJ	0.478	UJ	26.4	UJ	0.304	UJ
56		124	J	357	J	44.9	J	145	J	24,900	J	87.5	J
57		2.70	J	6.38	J	1.83	J	3.28	J	27.6	UJ	1.98	J
58		2.65	J	0.667	UJ	1.57	J	0.471	UJ	25.4	UJ	0.297	UJ
59	59 + 62 + 75	39.1	C J	162	C J	25.3	C J	63.8	C J	2,120	C J	33.1	C J
60		197	J	2,070	J	156	J	484	J	30,200	J	315	J
61	61 + 70 + 74 + 76	1,140	C J	22,400	C J	1,010	C J	2,360	C J	368,000	C J	4,730	C J
62	59 + 62 + 75		C59 J		C59 J		C59 J		C59 J		C59 J		C59 J
63		47.9	J	573	J	38.2	J	120	J	9,180	J	164	J
64		231	J	2,870	J	135	J	415	J	45,400	J	397	J
65	44 + 47 + 65		C44 J		C44 J		C44 J		C44 J		C44 J		C44 J
66		912	J	12,700	J	735	J	1,700	J	143,000	J	2,690	J
67		9.53	J	20.3	J	5.00	J	12.9	J	278	J	7.81	J
68		9.92	J	15.8	J	7.94	J	22.6	J	297	J	14.3	J
69	49 + 69		C49 J		C49 J		C49 J		C49 J		C49 J		C49 J
70	61 + 70 + 74 + 76		C61 J		C61 J		C61 J		C61 J		C61 J		C61 J
71	40 + 41 + 71		C40 J		C40 J		C40 J		C40 J		C40 J		C40 J
72		13.5	J	48.9	J	9.54	J	23.4	J	469	J	10.6	J
73		0.0495	UJ	0.0491	UJ	0.132	UJ	0.119	UJ	0.516	UJ	0.519	UJ
74	61 + 70 + 74 + 76		C61 J		C61 J		C61 J		C61 J		C61 J		C61 J
75	59 + 62 + 75		C59 J		C59 J		C59 J		C59 J		C59 J		C59 J
76	61 + 70 + 74 + 76		C61 J		C61 J		C61 J		C61 J		C61 J		C61 J
77		62.4	J	214	J	36.7	J	77.2	J	3,530	J	102	J
78		0.446	UJ	0.679	UJ	1.43	J	0.479	UJ	343	J	0.302	UJ
79		10.8	J	558	J	8.22	J	26.0	J	11,000	J	37.9	J
80		0.399	UJ	0.607	UJ	0.323	UJ	0.429	UJ	22.6	UJ	0.269	UJ
81		3.24	J	19.1	EMPC	2.33	J	5.76	J	23.1	UJ	8.07	J
82		54.1	J	5,760	J	37.2	J	151	J	125,000	J	209	J
83	83 + 99	2,530	C J	105,000	C J	3,470	C J	6,850	C J	1,050,000	C J	16,400	C J
84		123	J	6,710	J	72.6	J	306	J	180,000	J	340	J
85	85 + 116 + 117	800	C J	30,300	C J	985	C J	2,030	C J	327,000	C J	4,910	C J
86	86 + 87 + 97 + 108 + 119 + 125	924	C J	72,700	C J	1,020	C J	2,520	C J	890,000	C J	5,580	C J
87	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
88	88 + 91	144	C J	7,680	C J	90.0	C J	433	C J	168,000	C J	453	C J
89		3.86	J	143	J	2.75	J	5.54	J	3,000	J	12.4	J
90	90 + 101 + 113	2,110	C J	127,000	C J	2,350	C J	5,740	C J	1,400,000	C J	10,700	C J
91	88 + 91		C88 J		C88 J		C88 J		C88 J		C88 J		C88 J
92		498	J	19,500	J	530	J	1,280	J	213,000	J	2,110	J
93	93 + 95 + 98 + 100 + 102	725	C J	30,600	C J	614	C J	1,860	C J	573,000	C J	3,170	C J
94		3.56	J	26.0	J	0.809	J	6.30	J	906	J	3.63	UJ
95	93 + 95 + 98 + 100 + 102		C93 J		C93 J		C93 J		C93 J		C93 J		C93 J
96		4.54	J	100	J	2.75	J	5.53	J	1,710	J	14.9	J
97	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
98	93 + 95 + 98 + 100 + 102		C93 J		C93 J		C93 J		C93 J		C93 J		C93 J
99	83 + 99		C83 J		C83 J		C83 J		C83 J		C83 J		C83 J
100	93 + 95 + 98 + 100 + 102		C93 J		C93 J		C93 J		C93 J		C93 J		C93 J
101	90 + 101 + 113		C90 J		C90 J		C90 J		C90 J		C90 J		C90 J
102	93 + 95 + 98 + 100 + 102		C93 J		C93 J		C93 J		C93 J		C93 J		C93 J
103		12.8	J	278	J	8.15	J	30.1	J	5,180	J	25.7	J
104		0.908	J	0.778	J	0.221	UJ	0.648	EMPC	9.27	EMPC	1.06	UJ
105		1,540	J	66,300	J	2,090	J	3,910	J	766,000	J	11,200	J
106		0.513	UJ	4.87	UJ	0.401	UJ	0.998	UJ	65.3	UJ	2.37	UJ
107	107 + 124	78.3	C J	2,410	C J	83.0	C J	136	C J	55,600	C J	472	C J
108	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
109		392	J	13,100	J	432	J	922	J	185,000	J	3,260	J
110	110 + 115	1,660	C J	111,000	C J	1,680	C J	4,280	C J	1,270,000	C J	8,470	C J
111		5.71	J	5.58	EMPC	5.01	J	12.5	J	56.0	UJ	4.89	J
112		0.199	UJ	0.631	UJ	0.279	UJ	0.935	UJ	56.1	UJ	2.37	UJ
113	90 + 101 + 113		C90 J		C90 J		C90 J		C90 J		C90 J		C90 J
114		120	J	4,870	J	173	J	332	J	65,700	J	1,680	J
115	110 + 115		C110 J		C110 J		C110 J		C110 J		C110 J		C110 J
116	85 + 116 + 117		C85 J		C85 J		C85 J		C85 J		C85 J		C85 J
117	85 + 116 + 117		C85 J		C85 J		C85 J		C85 J		C85 J		C85 J
118		3,750	J	199,000	J	6,430	J	10,300	J	2,180,000	J	52,400	J
119	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
120		28.9	J	59.6	EMPC	25.9	J	51.2	J	344	J	29.5	J
121		3.25	J	4.69	J	2.74	J	6.89	J	58.0	UJ	2.53	UJ
122		11.5	J	207	J	5.96	J	22.6	J	9,000	J	2.75	UJ
123		69.5	J	1,940	J	81.0	J	136	J	35,600	J	948	J
124	107 + 124		C107 J		C107 J		C107 J		C107 J		C107 J		C107 J
125	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
126		11.1	J	85.7	J	8.90	J	14.3	J	1,260	J	26.2	J

Table H-7
Smallmouth Bass and Sucker PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay 07 060605204SB 6/5/2006		Forebay 08 060605205SB 6/5/2006		Forebay 09 060605207SB 6/5/2006		Forebay 10 060605208SB 6/5/2006		Forebay 11 060605209SB 6/5/2006		Forebay 12 060606102SB 6/6/2006	
127		9.34	J	341	J	16.1	J	26.6	J	3,700	J	142	J
128	128 + 166	1,240	C J	42,000	C J	1,590	C J	2,740	C J	336,000	C J	6,640	C J
129	129 + 138 + 160 + 163	8,070	C J	239,000	C J	10,400	C J	20,400	C J	1,940,000	C J	42,300	C J
130		268	J	11,200	J	271	J	707	J	126,000	J	1,190	J
131		12.3	J	992	J	9.83	J	43.3	J	18,200	J	50.5	J
132		352	J	23,200	J	240	J	1,180	J	394,000	J	777	J
133		162	J	2,110	J	175	J	353	J	22,300	J	519	J
134	134 + 143	76.7	C J	3,770	C J	58.6	C J	198	C J	63,500	C J	235	C J
135	135 + 151 + 154	1,170	C J	19,900	C J	1,090	C J	2,680	C J	266,000	C J	2,070	C J
136		166	J	5,920	J	138	J	364	J	89,500	J	484	J
137		344	J	20,000	J	606	J	997	J	220,000	J	5,410	J
138	129 + 138 + 160 + 163		C129 J		C129 J		C129 J		C129 J		C129 J		C129 J
139	139 + 140	130	C J	4,370	C J	185	C J	330	C J	41,300	C J	695	C J
140	139 + 140		C139 J		C139 J		C139 J		C139 J		C139 J		C139 J
141		365	J	24,000	J	462	J	1,330	J	250,000	J	2,050	J
142		0.780	UJ	3.11	UJ	0.923	UJ	1.47	UJ	207	J	1.34	UJ
143	134 + 143		C134 J		C134 J		C134 J		C134 J		C134 J		C134 J
144		77.5	J	3,460	J	75.2	J	244	J	53,200	J	251	J
145		0.371	J	19.0	J	0.263	EMPC	0.756	J	356	J	0.947	UJ
146		1,300	J	25,100	J	1,440	J	3,290	J	291,000	J	7,220	J
147	147 + 149	1,180	C J	37,500	C J	738	C J	4,390	C J	598,000	C J	2,150	C J
148		9.25	J	60.0	J	7.44	J	21.6	J	667	J	9.36	J
149	147 + 149		C147 J		C147 J		C147 J		C147 J		C147 J		C147 J
150		3.54	J	37.2	J	1.41	J	8.48	J	863	J	2.73	J
151	135 + 151 + 154		C135 J		C135 J		C135 J		C135 J		C135 J		C135 J
152		2.82	J	76.3	J	2.39	J	5.33	J	891	J	9.98	J
153	153 + 168	8,500	C J	179,000	C J	11,200	C J	23,100	C J	1,440,000	C J	48,200	C J
154	135 + 151 + 154		C135 J		C135 J		C135 J		C135 J		C135 J		C135 J
155		9.28	J	12.9	J	8.48	J	14.6	J	1.01	UJ	5.88	J
156	156 + 157	846	C J	44,600	C J	1,360	C J	2,390	C J	403,000	C J	12,800	C J
157	156 + 157		C156 J		C156 J		C156 J		C156 J		C156 J		C156 J
158		660	J	24,500	J	914	J	1,730	J	237,000	J	3,500	J
159		8.36	J	129	J	5.18	J	26.1	J	3,140	J	12.1	J
160	129 + 138 + 160 + 163		C129 J		C129 J		C129 J		C129 J		C129 J		C129 J
161		0.542	UJ	2.16	UJ	0.641	UJ	1.02	UJ	79.8	UJ	0.955	UJ
162		38.3	J	846	J	47.4	J	83.7	J	9,120	J	245	J
163	129 + 138 + 160 + 163		C129 J		C129 J		C129 J		C129 J		C129 J		C129 J
164		162	J	8,820	J	154	J	478	J	91,900	J	601	J
165		6.29	J	26.0	J	5.87	J	11.5	J	88.0	UJ	8.76	J
166	128 + 166		C128 J		C128 J		C128 J		C128 J		C128 J		C128 J
167		250	J	9,350	J	311	J	574	J	116,000	J	3,650	J
168	153 + 168		C153 J		C153 J		C153 J		C153 J		C153 J		C153 J
169		2.60	UJ	11.2	UJ	3.27	UJ	5.08	UJ	127	UJ	8.24	UJ
170		1,140	J	18,900	J	1,310	J	2,570	J	198,000	J	4,720	J
171	171 + 173	493	C J	5,310	C J	520	C J	1,050	C J	60,300	C J	890	C J
172		171	J	2,540	J	191	J	441	J	31,600	J	652	J
173	171 + 173		C171 J		C171 J		C171 J		C171 J		C171 J		C171 J
174		190	J	4,060	J	134	J	755	J	117,000	J	303	J
175		35.7	J	424	J	38.0	J	103	J	6,570	J	104	J
176		38.8	J	362	J	22.3	J	124	J	11,700	J	31.7	J
177		429	J	4,150	J	408	J	1,210	J	87,300	J	1,240	J
178		447	J	2,160	J	481	J	970	J	27,700	J	627	J
179		302	J	1,680	J	244	J	632	J	26,800	J	221	J
180	180 + 193	3,040	C J	33,300	C J	3,570	C J	7,510	C J	348,000	C J	18,200	C J
181		19.3	J	639	J	28.7	J	49.6	J	6,320	J	172	J
182		10.9	J	122	J	11.7	J	28.2	J	1,130	J	27.0	J
183	183 + 185	1,060	C J	9,230	C J	1,180	C J	2,510	C J	120,000	C J	2,000	C J
184		10.7	J	28.5	J	10.6	J	18.2	J	122	J	7.27	J
185	183 + 185		C183 J		C183 J		C183 J		C183 J		C183 J		C183 J
186		0.0495	UJ	0.441	UJ	0.0658	UJ	0.148	UJ	42.4	J	0.396	UJ
187		2,260	J	12,300	J	2,470	J	5,940	J	159,000	J	9,320	J
188		6.04	J	19.7	J	5.77	J	13.0	J	139	J	7.69	J
189		39.0	J	841	J	49.1	J	91.0	J	9,300	J	324	J
190		440	J	3,580	J	487	J	870	J	36,500	J	1,210	J
191		60.0	J	756	J	70.6	J	138	J	9,430	J	300	J
192		0.0519	UJ	0.503	UJ	0.0750	UJ	0.168	UJ	11.4	UJ	0.450	UJ
193	180 + 193		C180 J		C180 J		C180 J		C180 J		C180 J		C180 J
194		399	J	3,090	J	421	J	783	J	52,500	J	1,790	J
195		265	J	1,220	J	242	J	467	J	18,800	J	568	J
196		255	J	1,600	J	260	J	535	J	31,000	J	991	J
197	197 + 200	49.5	C J	227	C J	45.5	C J	112	C J	6,130	C J	55.2	C J
198	198 + 199	371	C J	3,050	C J	401	C J	986	C J	59,600	C J	2,060	C J
199	198 + 199		C198 J		C198 J		C198 J		C198 J		C198 J		C198 J
200	197 + 200		C197 J		C197 J		C197 J		C197 J		C197 J		C197 J
201		70.5	J	370	J	73.0	J	180	J	6,980	J	211	J
202		267	J	988	J	294	J	540	J	11,000	J	288	J
203		587	J	2,760	J	618	J	1,130	J	21,900	J	654	J
204		0.903	J	1.96	J	0.933	J	1.63	J	2.98	UJ	0.724	J
205		29.1	J	155	J	32.2	J	56.4	J	1,520	J	42.9	J
206		217	J	1,440	J	233	J	364	J	13,600	J	271	J
207		41.6	J	191	J	41.9	J	71.9	J	2,550	J	71.5	J
208		58.0	J	304	J	57.1	J	110	J	3,140	J	91.8	J
209		93.6	J	221	J	82.5	J	127	J	1,080	J	65.4	J
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full RDL)		59.4	J	1,734	J	69.7	J	149	J	19,310	J	325	J
Total PCBs as Congeners (KM-based)		59.3	J	1,733	J	69.6	J	149	J	19,303	J	325	J
Total PCBs as Congeners (KM-based, capped)		59.3	J	1,733	J	69.6	J	149	J	19,303	J	325	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

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Smallmouth Bass and Sucker PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay 13 060606103SB 6/6/2006		Forebay 14 060606104SB 6/6/2006		Forebay 15 060606210SB 6/6/2006		Forebay 16 060815402SB 8/15/2006		Forebay 17 060815403SB 8/15/2006		Forebay 18 060815405SB 8/15/2006	
Individual Congeners in pg/g (ng/kg), wet weight													
1		0.484	J	0.235	UJ	0.194	UJ	7.14	J	1.31	J	0.428	J
2		0.548	J	0.237	J	0.262	J	2.84	J	1.44	J	1.01	J
3		0.328	UJ	0.0502	UJ	0.263	UJ	8.28	J	1.09	J	0.535	UJ
4		3.76	J	2.13	J	1.79	J	909	J	11.5	J	2.21	J
5		0.219	UJ	0.0900	J	0.120	J	138	J	0.424	J	0.293	UJ
6		1.98	J	1.43	J	1.01	J	1,620	J	13.7	J	1.66	J
7		0.457	J	0.225	J	0.282	J	396	J	5.86	J	0.504	J
8		8.63	J	5.25	J	4.62	J	7,240	J	50.4	J	6.14	J
9		0.788	J	0.318	J	0.266	J	643	J	16.4	J	4.94	J
10		0.206	J	0.134	J	0.131	EMPC	54.3	J	0.934	J	0.343	J
11		67.5	J	35.4	J	28.4	J	230	J	404	J	495	J
12	12 + 13	1.60	C J	0.831	C J	0.622	C J	72.2	C J	11.4	C J	9.28	C J
13	12 + 13		C12 J		C12 J		C12 J		C12 J		C12 J		C12 J
14		0.199	UJ	0.0990	J	0.0890	EMPC	0.557	J	0.176	J	0.269	UJ
15		2.18	J	1.83	J	1.30	J	1,570	J	282	J	112	J
16		12.2	J	6.26	J	5.82	J	7,050	J	117	UJ	10.1	J
17		53.1	J	8.97	J	9.45	J	14,300	J	1,360	J	37.9	J
18	18 + 30	69.5	C J	19.8	C J	20.0	C J	23,000	C J	3,090	C J	130	C J
19		4.50	J	1.89	J	1.71	J	1,290	J	23.0	J	2.66	J
20	20 + 28	452	C J	83.0	C J	90.8	C J	76,900	C J	16,100	C J	1,210	C J
21	21 + 33	49.6	C J	15.3	C J	15.8	C J	19,100	C J	2,280	C J	45.4	C J
22		43.2	J	15.2	J	16.8	J	23,500	J	856	J	45.5	J
23		0.348	J	0.0950	J	0.102	J	86.4	J	79.3	UJ	0.486	EMPC
24		0.763	J	0.415	J	0.371	J	438	J	72.8	UJ	0.790	J
25		11.8	J	2.65	J	3.11	J	4,840	J	1,140	J	125	J
26	26 + 29	61.2	C J	8.94	C J	9.60	C J	11,100	C J	2,340	C J	279	C J
27		12.0	J	1.32	J	1.30	J	1,050	J	224	EMPC	12.7	J
28	20 + 28		C20 J		C20 J		C20 J		C20 J		C20 J		C20 J
29	26 + 29		C26 J		C26 J		C26 J		C26 J		C26 J		C26 J
30	18 + 30		C18 J		C18 J		C18 J		C18 J		C18 J		C18 J
31		162	J	43.7	J	47.8	J	59,700	J	12,200	J	837	J
32		32.5	J	2.41	J	2.53	J	7,510	J	647	J	12.6	J
33	21 + 33		C21 J		C21 J		C21 J		C21 J		C21 J		C21 J
34		1.30	J	0.190	EMPC	0.195	EMPC	192	J	103	J	4.10	J
35		0.238	UJ	0.0502	UJ	0.0500	UJ	2.40	UJ	87.5	UJ	0.310	UJ
36		0.220	UJ	0.0502	UJ	0.0500	UJ	2.24	UJ	79.2	UJ	0.290	UJ
37		41.1	J	6.02	J	5.12	J	5,850	J	2,950	J	189	J
38		1.45	EMPC	0.0830	EMPC	0.0930	J	30.3	J	78.2	UJ	1.93	J
39		7.99	J	0.495	J	0.556	J	264	J	349	J	9.61	J
40	40 + 41 + 71	688	C J	21.2	C J	29.2	C J	13,600	C J	22,900	C J	799	C J
41	40 + 41 + 71		C40 J		C40 J		C40 J		C40 J		C40 J		C40 J
42		377	J	15.9	J	27.3	J	11,400	J	19,000	J	879	J
43		108	J	4.52	J	5.91	J	2,280	J	15,800	J	104	J
44	44 + 47 + 65	6,400	C J	135	C J	281	C J	47,500	C J	200,000	C J	10,100	C J
45	45 + 51	70.9	C J	7.19	C J	20.5	C J	7,400	C J	1,720	C J	63.2	C J
46		7.84	J	1.66	J	1.63	J	1,490	J	307	J	7.73	J
47	44 + 47 + 65		C44 J		C44 J		C44 J		C44 J		C44 J		C44 J
48		305	J	18.2	J	23.4	J	11,000	J	13,900	J	339	J
49	49 + 69	6,590	C J	102	C J	173	C J	34,200	C J	194,000	C J	15,100	C J
50	50 + 53	54.9	C J	5.53	C J	7.57	C J	2,630	C J	6,170	C J	124	C J
51	45 + 51		C45 J		C45 J		C45 J		C45 J		C45 J		C45 J
52		21,200	J	256	J	424	J	54,300	J	733,000	J	43,900	J
53	50 + 53		C50 J		C50 J		C50 J		C50 J		C50 J		C50 J
54		2.74	J	0.152	J	0.135	J	56.1	J	90.2	J	1.02	J
55		0.876	UJ	0.479	UJ	0.476	UJ	185	J	28,800	J	7.12	UJ
56		253	J	19.6	J	26.2	J	2,560	J	52,400	J	3,280	J
57		0.863	UJ	1.10	J	1.39	J	231	J	631	UJ	19.2	J
58		0.855	UJ	1.04	J	1.38	J	46.8	J	654	UJ	7.05	UJ
59	59 + 62 + 75	162	C J	12.6	C J	18.4	C J	4,870	C J	6,050	C J	250	C J
60		1,750	J	68.2	J	100	J	2,600	J	52,200	J	5,430	J
61	61 + 70 + 74 + 76	19,800	C J	445	C J	719	C J	39,800	C J	1,000,000	C J	87,000	C J
62	59 + 62 + 75		C59 J		C59 J		C59 J		C59 J		C59 J		C59 J
63		571	J	21.2	J	30.6	J	1,470	J	15,400	J	1,520	J
64		2,450	J	65.2	J	96.7	J	20,400	J	56,100	J	2,800	J
65	44 + 47 + 65		C44 J		C44 J		C44 J		C44 J		C44 J		C44 J
66		12,700	J	335	J	510	J	18,500	J	371,000	J	39,600	J
67		27.3	J	3.32	J	5.02	J	988	J	985	J	81.3	J
68		26.2	J	4.29	J	20.8	J	101	J	611	UJ	76.8	J
69	49 + 69		C49 J		C49 J		C49 J		C49 J		C49 J		C49 J
70	61 + 70 + 74 + 76		C61 J		C61 J		C61 J		C61 J		C61 J		C61 J
71	40 + 41 + 71		C40 J		C40 J		C40 J		C40 J		C40 J		C40 J
72		45.6	J	5.71	J	7.99	J	219	J	826	J	87.6	J
73		0.221	UJ	0.0502	UJ	0.0500	UJ	0.0491	UJ	20,600	J	0.494	UJ
74	61 + 70 + 74 + 76		C61 J		C61 J		C61 J		C61 J		C61 J		C61 J
75	59 + 62 + 75		C59 J		C59 J		C59 J		C59 J		C59 J		C59 J
76	61 + 70 + 74 + 76		C61 J		C61 J		C61 J		C61 J		C61 J		C61 J
77		186	J	21.7	J	23.6	J	334	J	8,950	J	577	J
78		0.872	UJ	0.609	J	0.447	UJ	15.1	J	1,340	J	6.70	UJ
79		192	J	3.22	J	6.88	J	300	J	21,400	J	1,850	J
80		0.775	UJ	0.622	J	0.819	J	6.53	UJ	552	UJ	6.16	UJ
81		11.7	J	1.21	J	1.30	J	19.8	J	1,190	J	6.15	UJ
82		1,130	J	12.1	J	33.4	J	2,130	J	175,000	J	10,300	J
83	83 + 99	88,200	C J	1,250	C J	2,570	C J	41,700	C J	1,680,000	C J	117,000	C J
84		1,690	J	33.2	J	62.8	J	3,630	J	201,000	J	7,280	J
85	85 + 116 + 117	26,600	C J	350	C J	723	C J	11,800	C J	483,000	C J	52,200	C J
86	86 + 87 + 97 + 108 + 119 + 125	38,900	C J	326	C J	843	C J	25,200	C J	1,350,000	C J	81,900	C J
87	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
88	88 + 91	2,780	C J	38.5	C J	89.8	C J	4,040	C J	170,000	C J	10,600	C J
89		102	J	0.863	J	1.56	J	123	J	3,620	J	231	J
90	90 + 101 + 113	74,900	C J	880	C J	2,150	C J	41,600	C J	1,920,000	C J	125,000	C J
91	88 + 91		C88 J		C88 J		C88 J		C88 J		C88 J		C88 J
92		14,400	J	231	J	476	J	7,390	J	297,000	J	25,600	J
93	93 + 95 + 98 + 100 + 102	20,800	C J	282	C J	570	C J	21,500	C J	932,000	C J	54,500	C J
94		5.75	J	0.483	J	0.748	J	109	J	1,290	J	40.2	J
95	93 + 95 + 98 + 100 + 102		C93 J		C93 J		C93 J		C93 J		C93 J		C93 J
96		103	J	1.19	J	1.79	J	230	J	1,500	J	135	J
97	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
98	93 + 95 + 98 + 100 + 102		C93 J		C93 J		C93 J		C93 J		C93 J		C93 J
99	83 + 99		C83 J		C83 J		C83 J		C83 J		C83 J		C83 J
100	93 + 95 + 98 + 100 + 102		C93 J		C93 J		C93 J		C93 J		C93 J		C93 J
101	90 + 101 + 113		C90 J		C90 J		C90 J		C90 J		C90 J		C90 J
102	93 + 95 + 98 + 100 + 102		C93 J		C93 J		C93 J		C93 J		C93 J		C93 J
103		164	J	3.77	J	8.42	J	217	J	6,620	J	576	J
104		0.455	UJ	0.130	EMPC	0.0940	EMPC	4.03	J	68.6	J	1.06	EMPC
105		57,700	J	717	J	1,600	J	30,100	J	1,300,000	J	109,000	J
106		3.93	UJ	3.32	UJ	5.73	UJ	44.7	UJ	1,610	J	29.5	UJ
107	107 + 124	1,720	C J	38.7	C J	62.9	C J	1,330	C J	88,700	C J	6,320	C J
108	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
109		11,200	J	207	J	366	J	4,970	J	208,000	J	23,200	J
110	110 + 115	60,600	C J	593	C J	1,370	C J	36,300	C J	1,530,000	C J	91,800	C J
111		9.20	J	3.33	J	4.24	J	7.76	J	482	J	21.7	J
112		1.82	UJ	0.0698	UJ	0.0624	UJ	0.729	UJ	300	UJ	4.86	UJ
113	90 + 101 + 113		C90 J		C90 J		C90 J		C90 J		C90 J		C90 J
114		4,470	J	59.4	J	122	J	2,330	J	89,800	J	11,200	J
115	110 + 115		C110 J		C110 J		C110 J		C110 J		C110 J		C110 J
116	85 + 116 + 117		C85 J		C85 J		C85 J		C85 J		C85 J		C85 J
117	85 + 116 + 117		C85 J		C85 J		C85 J		C85 J		C85 J		C85 J
118		164,000	J	2,420	J	4,970	J	92,100	J	3,270,000	J	312,000	J
119	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
120		77.6	J	16.3	J	20.4	J	35.1	J	621	J	99.0	J
121		6.64	J	1.59	J	2.33	J	3.49	J	328	UJ	5.71	J
122		4.56	UJ	3.52	UJ	6.08	UJ	296	J	24,400	J	1,610	J
123		2,070	J	32.3	J	57.4	J	1,200	J	55,300	J	6,100	J
124	107 + 124		C107 J		C107 J		C107 J		C107 J		C107 J		C107 J
125	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86 J		C86 J		C86 J		C86 J		C86 J
126		45.3	J	6.42	J	7.55	J	48.0	UJ	3,030	J	125	J

Table H-7
Smallmouth Bass and Sucker PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay 13 060606103SB 6/6/2006		Forebay 14 060606104SB 6/6/2006		Forebay 15 060606210SB 6/6/2006		Forebay 16 060815402SB 8/15/2006		Forebay 17 060815403SB 8/15/2006		Forebay 18 060815405SB 8/15/2006	
127		416	J	5.94	J	12.0	J	191	J	8,100	J	878	J
128	128 + 166	33,300	C J	652	C J	1,300	C J	13,100	C J	427,000	C J	67,600	C J
129	129 + 138 + 160 + 163	197,000	C J	4,410	C J	8,540	C J	81,400	C J	2,530,000	C J	252,000	C J
130		5,270	J	121	J	237	J	3,050	J	175,000	J	21,000	J
131		285	J	3.19	J	9.41	J	331	J	29,100	J	2,380	J
132		3,870	J	100	J	216	J	6,160	J	425,000	J	37,400	J
133		1,760	J	92.0	J	140	J	862	J	27,900	J	4,180	J
134	134 + 143	1,120	C J	26.2	C J	56.7	C J	1,220	C J	93,900	C J	8,960	C J
135	135 + 151 + 154	13,300	C J	539	C J	910	C J	6,210	C J	272,000	C J	30,200	C J
136		2,960	J	60.1	J	117	J	1,870	J	78,000	J	8,580	J
137		19,600	J	199	J	481	J	7,880	J	274,000	J	39,500	J
138	129 + 138 + 160 + 163		C129 J		C129 J		C129 J		C129 J		C129 J		C129 J
139	139 + 140	3,450	C J	74.7	C J	158	C J	1,480	C J	49,200	C J	7,460	C J
140	139 + 140		C139 J		C139 J		C139 J		C139 J		C139 J		C139 J
141		16,700	J	188	J	466	J	7,660	J	242,000	J	35,300	J
142		2.66	UJ	0.710	UJ	1.91	UJ	20.4	UJ	758	UJ	72.1	UJ
143	134 + 143		C134 J		C134 J		C134 J		C134 J		C134 J		C134 J
144		1,410	J	30.9	J	71.6	J	997	J	61,000	J	6,970	J
145		8.05	J	0.0760	EMPC	0.137	EMPC	6.49	J	469	J	34.9	J
146		21,800	J	725	J	1,180	J	10,300	J	313,000	J	48,400	J
147	147 + 149	11,400	C J	358	C J	756	C J	12,800	C J	948,000	C J	86,000	C J
148		44.1	J	3.98	J	6.79	J	24.1	J	776	J	99.2	J
149	147 + 149		C147 J		C147 J		C147 J		C147 J		C147 J		C147 J
150		9.25	J	0.865	J	1.86	J	19.7	J	1,250	J	92.7	J
151	135 + 151 + 154		C135 J		C135 J		C135 J		C135 J		C135 J		C135 J
152		61.5	J	1.09	J	1.87	J	26.9	J	522	J	92.1	J
153	153 + 168	169,000	C J	5,570	C J	8,780	C J	73,000	C J	1,890,000	C J	202,000	C J
154	135 + 151 + 154		C135 J		C135 J		C135 J		C135 J		C135 J		C135 J
155		17.4	J	5.76	J	6.54	J	6.74	J	60.2	J	13.7	J
156	156 + 157	38,600	C J	541	C J	1,200	C J	16,900	C J	486,000	C J	83,000	C J
157	156 + 157		C156 J		C156 J		C156 J		C156 J		C156 J		C156 J
158		19,700	J	366	J	737	J	7,890	J	254,000	J	39,300	J
159		56.4	J	3.82	J	5.12	J	56.0	J	3,990	J	336	J
160	129 + 138 + 160 + 163		C129 J		C129 J		C129 J		C129 J		C129 J		C129 J
161		1.89	UJ	0.466	UJ	1.26	UJ	13.4	UJ	504	UJ	47.3	UJ
162		814	J	25.4	J	39.1	J	355	J	11,100	J	1,900	J
163	129 + 138 + 160 + 163		C129 J		C129 J		C129 J		C129 J		C129 J		C129 J
164		3,780	J	71.2	J	145	J	2,380	J	112,000	J	14,600	J
165		27.6	J	3.71	J	4.81	J	15.5	UJ	596	UJ	54.8	J
166	128 + 166		C128 J		C128 J		C128 J		C128 J		C128 J		C128 J
167		7,990	J	161	J	270	J	4,710	J	140,000	J	21,000	J
168	153 + 168		C153 J		C153 J		C153 J		C153 J		C153 J		C153 J
169		14.5	UJ	3.47	UJ	3.18	UJ	15.1	UJ	607	UJ	28.0	UJ
170		13,700	J	727	J	994	J	7,860	J	177,000	J	36,200	J
171	171 + 173	3,840	C J	301	C J	380	C J	1,690	C J	42,900	C J	8,260	C J
172		1,760	J	106	J	134	J	1,000	J	22,100	J	3,960	J
173	171 + 173		C171 J		C171 J		C171 J		C171 J		C171 J		C171 J
174		1,320	J	75.5	J	117	J	1,340	J	73,500	J	8,130	J
175		282	J	20.8	J	29.6	J	154	J	4,970	J	715	J
176		168	J	12.2	J	20.8	J	164	J	8,700	J	829	J
177		1,960	J	205	J	293	J	1,690	J	58,800	J	8,090	J
178		1,780	J	280	J	341	J	1,080	J	14,900	J	2,760	J
179		1,090	J	136	J	180	J	609	J	14,400	J	2,080	J
180	180 + 193	26,800	C J	2,150	C J	2,430	C J	17,300	C J	248,000	C J	59,100	C J
181		496	J	13.8	J	23.3	J	228	J	6,480	J	1,070	J
182		101	J	7.71	J	10.7	J	47.5	J	1,120	J	194	J
183	183 + 185	6,770	C J	667	C J	822	C J	3,710	C J	72,000	C J	15,100	C J
184		29.3	J	7.56	J	8.12	J	12.1	J	139	EMPC	36.6	J
185	183 + 185		C183 J		C183 J		C183 J		C183 J		C183 J		C183 J
186		0.340	UJ	0.0502	UJ	0.0770	EMPC	0.946	J	46.6	J	5.53	J
187		9,470	J	1,350	J	1,760	J	8,810	J	100,000	J	20,900	J
188		17.6	J	3.66	J	4.84	J	10.7	J	213	J	32.2	J
189		661	J	31.1	J	40.7	J	402	J	10,100	J	1,880	J
190		2,670	J	301	J	347	J	1,390	J	29,200	J	6,200	J
191		616	J	40.9	J	50.5	J	299	J	7,110	J	1,240	J
192		0.387	UJ	0.0502	UJ	0.0530	UJ	0.342	UJ	48.5	UJ	1.28	UJ
193	180 + 193		C180 J		C180 J		C180 J		C180 J		C180 J		C180 J
194		2,410	J	310	J	295	J	1,860	J	17,900	J	5,150	J
195		1,050	J	187	J	175	J	648	J	6,840	J	1,800	J
196		1,210	J	176	J	173	J	812	J	8,560	J	2,070	J
197	197 + 200	165	C J	32.7	C J	32.1	C J	104	C J	2,030	C J	315	C J
198	198 + 199	1,840	C J	240	C J	288	C J	1,980	C J	17,500	C J	4,200	C J
199	198 + 199		C198 J		C198 J		C198 J		C198 J		C198 J		C198 J
200	197 + 200		C197 J		C197 J		C197 J		C197 J		C197 J		C197 J
201		260	J	47.3	J	55.5	J	183	J	2,050	EMPC	448	J
202		860	J	214	J	233	J	582	J	3,110	J	1,290	J
203		2,060	J	438	J	415	J	997	J	10,300	J	3,080	J
204		2.47	J	0.682	J	0.668	J	1.21	J	55.9	J	3.13	J
205		123	J	24.8	J	23.5	J	64.5	J	923	J	237	J
206		928	J	199	J	179	J	546	J	5,570	J	2,020	J
207		134	J	36.5	J	31.6	J	88.1	J	702	J	247	J
208		182	J	44.9	J	45.3	J	168	J	1,370	J	404	J
209		214	J	85.3	J	69.8	J	132	J	841	J	342	J
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full RDL)		1,306	J	32.2	J	54.8	J	1,193	J	26,511	J	2,482	J
Total PCBs as Congeners (KM-based)		1,306	J	32.1	J	54.9	J	1,193	J	26,505	J	2,482	J
Total PCBs as Congeners (KM-based, capped)		1,306	J	32.1	J	54.8	J	1,193	J	26,505	J	2,482	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-7
Smallmouth Bass and Sucker PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay 19 060815406SB 8/15/2006		Forebay SUCKER 070505LS 5/5/2007		Reference 20 071027R01SB 10/27/2007		Reference 21 071027R02SB 10/27/2007		Reference 22 071027R03SB 10/27/2007		Reference 23 071027R04SB 10/27/2007		Reference 24 071027R05SB 10/27/2007	
Individual Congeners in pg/g (ng/kg), wet weight															
1		0.226	UJ	0.861		50.7		257		2.64		4.88		1.42	EMPC
2		0.829	J	1.21		149		612		4.99		9.99		2.43	EMPC
3		0.279	UJ	0.482	U	7.52		330		6.57	EMPC	7.75		3.38	EMPC
4		1.77	J	13.2		6.49	U	5.78		7.12	U	6.84	U	25.4	EMPC
5		0.153	J	0.781		4.36	U	6.32		4.90	U	5.03	U	3.65	U
6		0.912	J	6.80		6.85	EMPC	13.8		4.39	U	4.51	U	16.8	
7		0.276	J	0.791		3.99	U	13.9		4.50	U	4.63	U	3.36	U
8		4.78	J	27.4		8.40		12.8	EMPC	6.67		7.82	EMPC	66.7	
9		0.284	J	1.18		3.93	U	10.7	EMPC	4.36	U	4.48	U	3.25	U
10		0.178	J	0.563		3.80	U	4.15		4.10	U	4.21	U	3.05	U
11		562	J	456		644		519		930		748		1,070	
12	12 + 13	0.126	C UJ	0.120	C U	22.6	C EMPC	31.4	C	4.77	C U	4.90	C U	3.55	C U
13	12 + 13		C12 J		C12		C12		C12		C12		C12		C12
14		0.130	J	0.199		4.14	U	10.9		4.54	U	4.66	U	3.38	U
15		9.51	J	7.07		9.85		5.92	EMPC	5.64	U	6.03	U	17.8	
16		5.61	J	68.5		8.46		9.14		11.3	EMPC	10.3	EMPC	113	
17		7.65	J	97.3		11.7	EMPC	11.5		15.3		10.9		297	
18	18 + 30	19.1	C J	164	C	25.4	C	23.8	C	33.0	C	25.8	C	458	C
19		1.65	J	12.1		3.24	EMPC	2.31		3.33	EMPC	2.16	EMPC	65.4	
20	20 + 28	112	C J	514	C	146	C	145	C	180	C	120	C	1,760	C
21	21 + 33	14.8	C J	112	C	28.9	C	24.4	C	29.5	C	22.1	C EMPC	342	C
22		15.2	J	164		32.2		25.6		34.0		30.4		310	
23		0.197	UJ	0.443		1.14	U	1.30	U	1.95	U	1.48	U	2.71	U
24		0.323	J	2.31		0.697	U	1.02	EMPC	0.913	U	1.11	EMPC	6.17	EMPC
25		3.31	J	16.3		5.67	EMPC	5.17		6.10	EMPC	2.00	EMPC	119	
26	26 + 29	10.6	C J	43.9	C	15.9	C	14.8	C	18.3	C	12.5	C	305	C
27		1.25	J	18.8		2.19	EMPC	2.20		2.56	EMPC	1.75	EMPC	75.8	
28	20 + 28		C20 J		C20		C20		C20		C20		C20		C20
29	26 + 29		C26 J		C26		C26		C26		C26		C26		C26
30	18 + 30		C18 J		C18		C18		C18		C18		C18		C18
31		47.1	J	248		84.8		74.6		97.2		73.2		889	
32		2.07	J	16.3		4.00		3.47	EMPC	3.04		2.75	EMPC	236	
33	21 + 33		C21 J		C21		C21		C21		C21		C21		C21
34		0.274	J	1.61		1.14	U	1.30	U	1.92	U	1.45	U	10.5	EMPC
35		0.290	EMPC	0.194	U	1.16	U	1.32	U	2.12	U	1.61	U	2.94	U
36		0.298	EMPC	0.181	U	1.12	U	1.28	U	1.87	U	1.42	U	2.60	U
37		28.0	J	32.8		17.1		13.6	EMPC	20.8	EMPC	16.9		127	
38		0.192	UJ	0.696	EMPC	1.18	U	1.35	U	2.04	U	1.54	U	2.82	U
39		0.800	J	4.52		1.16	U	1.32	U	1.98	U	1.50	U	9.71	EMPC
40	40 + 41 + 71	21.2	C J	262	C	62.8	C	50.9	C	55.9	C	36.2	C	1,360	C
41	40 + 41 + 71		C40 J		C40		C40		C40		C40		C40		C40
42		15.1	J	327		48.5		37.9		48.6		31.1		727	
43		4.05	J	25.2		8.55	EMPC	5.58	EMPC	9.93	EMPC	5.05		178	
44	44 + 47 + 65	115	C J	1,690	C	308	C	257	C	311	C	164	C	4,190	C
45	45 + 51	8.63	C J	65.1	C	16.8	C	14.8	C	15.4	C	10.7	C	358	C
46		2.01	J	12.7		3.54		3.38		3.45	EMPC	2.68	EMPC	60.4	
47	44 + 47 + 65		C44 J		C44		C44		C44		C44		C44		C44
48		13.3	J	202		38.3		32.1		1.11	U	21.7		503	
49	49 + 69	82.0	C J	1,010	C	228	C	191	C	233	C	128	C	3,400	C
50	50 + 53	6.83	C J	90.9	C	15.2	C	8.76	C	15.5	C	7.97	C EMPC	295	C
51	45 + 51		C45 J		C45		C45		C45		C45		C45		C45
52		225	J	1,950		551		436		558		276		5,400	
53	50 + 53		C50 J		C50		C50		C50		C50		C50		C50
54		0.350	UJ	0.901		0.706	U	0.516	EMPC	0.758	U	0.780	U	13.9	
55		0.596	UJ	1.51	U	8.47	EMPC	5.47	U	12.0	EMPC	9.48		148	EMPC
56		20.0	J	292		80.9		52.7		74.1		52.1		920	
57		1.66	J	5.69		6.38	U	5.39	U	4.45	U	5.10	U	26.7	
58		1.03	J	8.25		7.01	U	5.92	U	4.65	U	5.34	U	19.4	U
59	59 + 62 + 75	9.05	C J	124	C	27.5	C	23.9	C	30.4	C	15.3	C	392	C
60		60.3	J	623		135		129		146		73.8		1,320	
61	61 + 70 + 74 + 76	566	C J	3,710	C	959	C	821	C	936	C	480	C	5,610	C
62	59 + 62 + 75		C59 J		C59		C59		C59		C59		C59		C59
63		45.9	J	167		29.7		32.3		31.6		16.9		277	
64		47.9	J	702		148		121		159		90.7		2,010	
65	44 + 47 + 65		C44 J		C44		C44		C44		C44		C44		C44
66		505	J	2,530		593		602		626		324		5,480	
67		4.14	J	22.8		8.30	EMPC	6.77		9.76	EMPC	5.78		63.1	
68		15.8	J	40.1		10.9	EMPC	11.2		7.68	EMPC	5.18	EMPC	45.4	
69	49 + 69		C49 J		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61 J		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40 J		C40		C40		C40		C40		C40		C40
72		6.85	J	35.1		10.8		10.6		11.9		4.66	U	77.7	
73		0.361	UJ	0.240	U	0.654	U	3.74	EMPC	0.817	U	0.762	U	0.667	U
74	61 + 70 + 74 + 76		C61 J		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59 J		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61 J		C61		C61		C61		C61		C61		C61
77		56.8	J	110		47.0		35.8		43.5		25.4		195	
78		1.32	J	1.42	U	6.83	U	5.77	U	4.69	U	5.38	U	19.5	U
79		6.37	J	53.2		13.7	EMPC	9.52	EMPC	10.3	EMPC	5.71	EMPC	28.0	EMPC
80		1.15	J	2.37	EMPC	5.79	U	4.89	U	3.91	U	4.49	U	16.3	U
81		3.58	J	9.02		6.81	U	5.74	U	5.04	U	5.47	U	20.5	U
82		21.9	J	197		97.5		54.4	EMPC	68.9		42.4		323	
83	83 + 99	1,110	C J	8,420	C	1,940	C	1,680	C	1,850	C	777	C	7,520	C
84		42.5	J	562		196		108		161		77.6		621	
85	85 + 116 + 117	252	C J	2,170	C	568	C	486	C	539	C	232	C	2,500	C
86	86 + 87 + 97 + 108 + 119 + 125	345	C J	4,710	C	1,150	C	771	C	1,010	C	471	C	3,760	C
87	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86		C86		C86		C86		C86		C86
88	88 + 91	44.4	C J	862	C	187	C	126	C	164	C	81.2	C	886	C
89		1.28	UJ	13.4		4.65	EMPC	3.78		3.51	EMPC	2.12	EMPC	50.1	EMPC
90	90 + 101 + 113	816	C J	10,600	C	2,620	C	1,900	C	2,500	C	1,010	C	8,280	C
91	88 + 91		C88 J		C88		C88		C88		C88		C88		C88
92		154	J	1,900		505		410		513		200		1,880	
93	93 + 95 + 98 + 100 + 102	266	C J	4,180	C	951	C	632	C	824	C	393	C	3,440	C
94		1.34	UJ	13.9		3.71	EMPC	1.55	EMPC	2.81	EMPC	1.92	U	20.3	
95	93 + 95 + 98 + 100 + 102		C93 J		C93		C93		C93		C93		C93		C93
96		0.877	J	8.80		2.30	EMPC	2.40		3.81	EMPC	0.977	EMPC	48.9	
97	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93 J		C93		C93		C93		C93		C93		C93
99	83 + 99		C83 J		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93 J		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90 J		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93 J		C93		C93		C93		C93		C93		C93
103		4.31	J	49.7		16.5		11.7		17.0		8.46		85.6	
104		0.781	UJ	1.08		1.11	EMPC	0.535	U	0.697	U	0.454	U	2.87	EMPC
105		738	J	4,350		1,150		1,070		1,110		498		4,060	
106		3.70	UJ	11.2	U	10.0	U	8.59	U	9.75	U	4.24	U	23.6	U
107	107 + 124	45.2	C J	241	C	92.9	C	75.2	C	79.4	C	38.4	C	214	C
108	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86		C86		C86		C86		C86		C86
109		389	J	1,090		311		286		268		127		802	
110	110 + 115	498	C J	8,230	C	2,150	C	1,480	C	1,940	C	904	C	7,350	C
111		5.71	J	16.3		4.00		6.03		5.32		1.75	EMPC	13.0	
112		0.860	UJ	0.470	U	1.52	U	0.970	U	1.82	U	1.29	U	4.44	U
113	90 + 101 + 113		C90 J		C90		C90		C90		C90		C90		C90
114		115	J	289		77.0		72.3		65.2		29.2		300	
115	110 + 115		C110 J		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85 J		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85 J		C85		C85		C85		C85		C85		C85
118		3,820	J	10,300		3,300		3,050		3,010		1,330		10,200	
119	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86		C86		C86		C86		C86		C86
120		23.8	J	58.7		21.1		21.7	EMPC	21.4		10.3	EMPC	54.7	
121		1.36	J	11.3		3.26		2.66		3.01	EMPC	1.35	EMPC	11.3	
122		5.17	J	39.1		21.4	EMPC	9.49	U	14.8		4.86	U	27.0	U
123		75.0	J	179		55.4		47.7		43.5	EMPC	24.8		184	
124	107 + 124		C107 J		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86 J		C86		C86		C86		C86		C86		C86
126		12.3	J	19.1		11.2	U	11.6	EMPC	12.2	U	5.61		30.1	U

Table H-7
Smallmouth Bass and Sucker PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay 19 060815406SB 8/15/2006		Forebay SUCKER 070505LS 5/5/2007		Reference 20 071027R01SB 10/27/2007		Reference 21 071027R02SB 10/27/2007		Reference 22 071027R03SB 10/27/2007		Reference 23 071027R04SB 10/27/2007		Reference 24 071027R05SB 10/27/2007	
127		6.66	J	20.2		10.2	U	8.75	U	10.1	U	4.41	U	24.5	U
128	128 + 166	399	C J	2,600	C	842	C	724	C	747	C	350	C	2,030	C
129	129 + 138 + 160 + 163	4,700	C J	23,400	C	5,820	C	5,250	C	5,640	C	2,430	C	14,300	C
130		242	J	1,260		332		276		321		154		632	
131		7.73	J	90.5		28.2		13.5		21.0		10.6	EMPC	32.6	EMPC
132		158	J	2,720		646		381		529		282		1,170	
133		122	J	431		118		108		118		52.4		323	
134	134 + 143	43.6	C J	442	C	141	C	79.6	C	120	C	60.7	C	260	C
135	135 + 151 + 154	395	C J	4,980	C	1,210	C	993	C	1,200	C	512	C	3,100	C
136		50.2	J	739		187		134		181		75.4		610	
137		314	J	730		174		147		125		68.9		573	
138	129 + 138 + 160 + 163		C129 J		C129		C129		C129		C129		C129		C129
139	139 + 140	36.7	C J	324	C	87.5	C	79.3	C	89.5	C	37.4	C	253	C
140	139 + 140		C139 J		C139		C139		C139		C139		C139		C139
141		137	J	1,610		324		255		275		153		1,490	
142		0.715	UJ	7.91	U	7.73	U	13.0	U	7.25	U	3.01	U	14.3	U
143	134 + 143		C134 J		C134		C134		C134		C134		C134		C134
144		41.5	J	530		110		81.5		109	EMPC	48.4		243	
145		0.414	UJ	2.83		0.600	U	0.555	U	0.667	U	0.491	U	0.771	U
146		1,430	J	4,360		1,020		939		978		429		2,540	
147	147 + 149	709	C J	13,000	C	2,400	C	1,450	C	1,920	C	1,060	C	3,250	C
148		3.73	J	41.2		11.6	EMPC	10.0	EMPC	11.2		4.22		36.6	
149	147 + 149		C147 J		C147		C147		C147		C147		C147		C147
150		1.56	J	23.1		6.01		3.99	EMPC	7.15	EMPC	3.76	EMPC	11.7	EMPC
151	135 + 151 + 154		C135 J		C135		C135		C135		C135		C135		C135
152		0.483	J	7.13		1.45	EMPC	1.78	EMPC	1.01	EMPC	0.956		14.4	
153	153 + 168	7,180	C J	26,400	C	5,530	C	5,250	C	5,040	C	2,510	C	15,500	C
154	135 + 151 + 154		C135 J		C135		C135		C135		C135		C135		C135
155		4.01	J	16.9		6.70		5.11		6.87		3.10	EMPC	16.0	
156	156 + 157	791	C J	1,770	C	468	C	402	C	378	C	194	C	1,390	C
157	156 + 157		C156 J		C156		C156		C156		C156		C156		C156
158		190	J	1,760		439		393		435		188		1,220	
159		8.56	J	74.2		11.5		8.69	U	9.01		6.33		24.0	
160	129 + 138 + 160 + 163		C129 J		C129		C129		C129		C129		C129		C129
161		0.469	UJ	5.19	U	5.38	U	9.04	U	5.18	U	2.15	U	10.2	U
162		33.3	J	72.6		22.7		23.6	EMPC	17.3	EMPC	8.30	EMPC	52.4	
163	129 + 138 + 160 + 163		C129 J		C129		C129		C129		C129		C129		C129
164		82.4	J	781		180		139		167		81.4		541	
165		5.19	J	17.0		6.32	EMPC	10.2	U	5.85	U	2.75	EMPC	13.6	
166	128 + 166		C128 J		C128		C128		C128		C128		C128		C128
167		356	J	565		193		169		157		84.3		536	
168	153 + 168		C153 J		C153		C153		C153		C153		C153		C153
169		4.39	UJ	11.1		5.51	U	8.90	U	5.36	U	2.27	U	10.9	U
170		632	J	2,190		438		457		406		260		1,950	
171	171 + 173	122	C J	1,120	C	238	C	242	C	249	C	122	C	766	C
172		119	J	478		84.6		94.6		79.8		57.7		376	
173	171 + 173		C171 J		C171		C171		C171		C171		C171		C171
174		157	J	1,640		270		195		229		164		642	
175		35.7	J	181		31.4		29.3		32.7		17.1	EMPC	71.8	
176		22.5	J	417		66.4		42.0		62.2		36.0		91.0	
177		506	J	2,800		535		429		557		291		903	
178		255	J	1,430		292		303		351		166		786	
179		86.7	J	1,600		321		232		342		153		810	
180	180 + 193	3,450	C J	7,180	C	1,220	C	1,310	C	1,120	C	806	C	5,270	C
181		14.6	J	33.8		10.6	EMPC	10.3		8.97	EMPC	4.54		32.5	
182		7.49	J	31.6		7.69	EMPC	5.65	EMPC	8.57		5.13		24.4	EMPC
183	183 + 185	598	C J	3,140	C	559	C	573	C	567	C	297	C	1,740	C
184		3.23	J	20.7		7.16		7.07		6.44		2.86	EMPC	19.4	
185	183 + 185		C183 J		C183		C183		C183		C183		C183		C183
186		0.158	UJ	0.459	EMPC	1.24	U	0.703	U	0.589	U	0.540	U	0.775	U
187		3,590	J	8,530		1,840		1,810		2,040		1,000		3,850	
188		6.34	J	20.8		5.67		4.91	EMPC	5.62		2.31	EMPC	11.9	
189		41.9	J	78.0		16.5	EMPC	17.4		16.8	EMPC	13.3		67.7	
190		252	J	732		179		192		185		103		570	
191		45.4	J	120		22.3		26.4		21.2		16.7		81.1	
192		0.169	UJ	0.202	U	1.29	U	0.732	U	0.626	U	0.574	U	0.824	U
193	180 + 193		C180 J		C180		C180		C180		C180		C180		C180
194		341	J	695		167		150		126		122		618	
195		157	J	422		112		105		95.2		65.2		334	
196		197	J	450		88.2		101		69.2		58.1		284	
197	197 + 200	26.5	C J	168	C	34.6	C	28.2	C	28.5	C	20.5	C	71.2	C
198	198 + 199	443	C J	1,100	C	279	C	258	C	222	C	192	C	702	C
199	198 + 199		C198 J		C198		C198		C198		C198		C198		C198
200	197 + 200		C197 J		C197		C197		C197		C197		C197		C197
201		70.1	J	274		51.2		46.2		46.9		27.9		109	
202		134	J	830		173		166		175		100		428	
203		273	J	1,040		237		237		210		169	EMPC	596	
204		0.449	J	1.68		1.64	U	0.578	U	0.640	U	0.872	EMPC	0.676	U
205		16.9	J	58.7		15.4		14.6	EMPC	14.5	EMPC	10.6	EMPC	37.9	
206		111	J	368		103		95.6		72.8		66.6		240	
207		27.0	J	62.4		19.6		16.8		13.3	EMPC	11.7	EMPC	38.8	
208		53.0	J	165		43.9		36.1		31.5	EMPC	27.7		87.1	
209		51.7	J	144		52.4		44.0		36.9		33.9		90.2	
Total PCBs as Congeners in ug/kg, wet weight															
Total PCBs as Congeners (full EMPC/full RDL)		40.8	J	201	J	48.0	J	42.1	J	45.1	J	22.5	J	164	J
Total PCBs as Congeners (KM-based)		40.7	J	201	J	47.9	J	41.8	J	44.7	J	22.1	J	164	J
Total PCBs as Congeners (KM-based, capped)		40.7	J	201	J	47.9	J	41.8	J	44.7	J	22.1	J	164	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-7
Smallmouth Bass and Sucker PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Reference 25 071027R06SB 10/27/2007		Reference 26 071115R07SB 11/15/2007		Reference 27 080517R10SB 5/17/2008		Reference 28 080517R11SB 5/17/2008		Reference 29 080517R12SB 5/17/2008		Reference 30 080517R13SB 5/17/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		15.5	EMPC	1.63	U	1.05		0.452	EMPC	0.430	EMPC	0.626	
2		35.2		2.15	EMPC	1.66		1.11		0.666		1.34	
3		23.2	EMPC	3.29	EMPC	0.748		0.488		0.340	EMPC	0.617	
4		9.49	EMPC	4.96	U	9.61		3.81		2.37		3.55	
5		5.69	U	3.20	U	0.462		0.234	U	0.255	U	0.208	
6		5.10	U	2.87	U	5.37		1.99		1.02		2.12	
7		5.23	U	2.95	U	1.04		0.466		0.236	U	0.561	
8		22.2		6.54	EMPC	22.7		10.4		4.91		9.98	
9		5.07	U	2.85	U	1.84		0.652		0.294	EMPC	0.718	
10		4.76	U	2.68	U	0.377	EMPC	0.217	U	0.238	U	0.141	U
11		438		339		342		377		173		320	
12	12 + 13	5.54	C U	3.12	C U	0.177	C U	0.228	C U	0.250	C U	0.153	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		5.28	U	2.97	U	0.170	U	0.219	U	0.239	U	0.151	U
15		6.46	U	3.54	U	4.92		2.91		1.41		3.45	
16		40.5		10.8	EMPC	31.0		13.3		7.42		22.5	
17		80.3		18.4		86.0		19.3		10.8		52.3	
18	18 + 30	158	C	39.1	C	131	C	43.8	C	22.0	C	96.0	C
19		8.89	EMPC	2.44	EMPC	6.14		3.23		1.84		3.46	
20	20 + 28	740	C	219	C	1,020	C	215	C	150	C	666	C
21	21 + 33	155	C	33.5	C	152	C	42.8	C	30.2	C	125	C
22		151		35.1		212		51.0		30.9		115	
23		1.15	U	0.838	U	0.775		0.197		0.172	EMPC	0.680	
24		3.00	EMPC	0.776	U	2.68		0.691		0.405	EMPC	1.45	
25		30.4		6.87		37.9		7.91		5.36		18.3	
26	26 + 29	92.4	C	23.4	C EMPC	110	C	23.6	C	16.0	C	80.0	C
27		11.0		2.62		6.74		2.85		1.85		6.12	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		409		108		596		125		78.9		338	
32		27.6		5.30		34.1		6.56		4.23		24.6	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		2.02	EMPC	0.823	U	1.80		0.507		0.497		1.44	
35		1.26	U	0.911	U	0.163	U	0.127	EMPC	0.0726	U	0.118	U
36		1.11	U	0.804	U	0.142	U	0.0498	U	0.0635	U	0.101	U
37		49.4		15.4		28.1		20.0		7.00		26.8	
38		1.20	U	0.874	U	1.17		0.243	EMPC	0.247	EMPC	0.476	
39		5.27		1.38	EMPC	7.43		1.95		1.45		6.04	
40	40 + 41 + 71	240	C	64.4	C	220	C	66.9	C	62.2	C	225	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		180		58.6		239		55.0		46.1		187	
43		32.1	EMPC	12.6	EMPC	38.4		8.38		8.71		31.2	
44	44 + 47 + 65	771	C	377	C	1,090	C	271	C	260	C	824	C
45	45 + 51	59.4	C	17.9	C	58.4	C	15.8	C	13.2	C	49.1	C
46		12.9	EMPC	3.47		9.01		3.98		2.53		10.8	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		178		0.662	U	178		42.4		35.0		166	
49	49 + 69	621	C	301	C	866	C	203	C	192	C	657	C
50	50 + 53	45.4	C	12.8	C	24.2	C	12.6	C	10.0	C	38.3	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		978		575		1,280		402		384		1,140	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.814	U	0.492	U	0.370	EMPC	0.280		0.194		0.643	
55		20.2		6.11	EMPC	0.249	U	0.406	U	0.485	U	0.228	U
56		87.1		64.2		109		80.9		53.2		135	
57		8.61	U	2.29	U	8.57		2.09		2.15		5.13	
58		9.01	U	2.39	U	3.69		1.87		2.09		2.98	
59	59 + 62 + 75	83.0	C	34.6	C	107	C	25.4	C	23.3	C	81.0	C
60		145		129		325		123		116		209	
61	61 + 70 + 74 + 76	1,220	C	785	C	2,130	C	848	C	756	C	1,690	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		49.7		36.3		101		29.5		34.0		63.3	
64		400		175		554		147		121		427	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		700		572		1,590		534		601		1,040	
67		19.5		9.40		29.1		9.61		8.65		18.4	
68		11.6	EMPC	7.59		16.3		7.78		9.79		13.8	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		13.5	EMPC	11.0		22.7		8.21		8.94		18.2	
73		0.796	U	7.72	EMPC	0.0486	U	0.0495	U	0.0484	U	0.0492	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		38.1		30.1		75.4		36.2		43.6		70.1	
78		9.08	U	2.41	U	0.238	U	0.389	U	0.465	U	0.229	U
79		16.2		7.61		17.1		13.4		11.8		27.0	
80		7.57	U	2.01	U	2.30		0.818		0.948		1.32	
81		9.44	U	2.53	U	5.52		2.56		2.63		3.26	
82		112		59.7		55.2		57.0		44.9		131	
83	83 + 99	1,660	C	1,760	C	5,090	C	1,410	C	1,530	C	2,670	C
84		147		126		122		120		93.5		279	
85	85 + 116 + 117	502	C	513	C	1,420	C	393	C	423	C	752	C
86	86 + 87 + 97 + 108 + 119 + 125	1,100	C	829	C	1,310	C G	758	C G	674	C G	1,560	C G
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	183	C	133	C	174	C	117	C	113	C	288	C
89		4.43	EMPC	1.71	U	3.79		3.01		2.84		6.39	
90	90 + 101 + 113	2,160	C	1,950	C	3,510	C	1,730	C	1,670	C	3,490	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		401		404		812		353		342		665	
93	93 + 95 + 98 + 100 + 102	835	C	653	C	979	C	563	C	552	C	1,320	C
94		4.04	EMPC	1.99	EMPC	2.17		1.84		1.87		4.30	
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		6.41	EMPC	1.88	EMPC	4.25		1.79		1.80		6.05	
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		15.8		11.6	EMPC	14.1		9.48		10.8		21.8	
104		0.947	U	0.507	U	0.261	EMPC	0.163	EMPC	0.237		0.420	
105		1,160		1,010		3,500		940		1,000		1,910	
106		12.0	U	8.48	U	0.874	U	0.583	U	0.544	U	0.304	U
107	107 + 124	95.8	C	56.8	C EMPC	132	C	71.0	C	62.2	C	128	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		251		262		677		223		285		408	
110	110 + 115	1,760	C	1,500	C	2,460	C	1,400	C	1,230	C	2,960	C
111		1.56	U	4.79	EMPC	9.55		3.48		5.06		5.82	
112		1.51	U	1.21	U	0.147	U	0.387	U	0.531	U	0.246	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		85.6	EMPC	68.4	EMPC	272		59.9		80.2		123	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		3,140		3,110		11,800		2,580		3,630		4,850	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		15.4		22.7		57.3		17.0		24.2		29.3	
121		2.91		2.35		4.77		1.76		2.26		3.49	
122		22.8	EMPC	9.72	U	7.66		12.1		5.37		22.8	
123		47.0	EMPC	53.1		148		43.0		55.3		81.1	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		15.7	U	10.7	U	25.9		6.03		9.55		12.6	

Table H-7
Smallmouth Bass and Sucker PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Reference 25 071027R06SB 10/27/2007		Reference 26 071115R07SB 11/15/2007		Reference 27 080517R10SB 5/17/2008		Reference 28 080517R11SB 5/17/2008		Reference 29 080517R12SB 5/17/2008		Reference 30 080517R13SB 5/17/2008	
127		12.5	U	8.83	U	0.900	U	0.600	U	0.561	U	0.326	U
128	128 + 166	713	C	704	C	2,400	C	545	C	551	C	1,060	C
129	129 + 138 + 160 + 163	4,680	C	5,240	C	15,500	C	4,390	C	5,020	C	7,510	C
130		282		239		405		265		246		459	
131		29.4		12.2	EMPC	13.7		17.9		11.3		36.5	
132		550		381		378		406		324		922	
133		97.8		111		280		87.2		105		163	
134	134 + 143	137	C	80.5	C	84.4	C	80.0	C	65.9	C	176	C
135	135 + 151 + 154	913	C	904	C	1,690	C	834	C	814	C	1,590	C
136		147		131		178		119		116		274	
137		178		166		720		104		151		245	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	73.6	C	75.5	C	258	C	59.3	C	62.5	C	123	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		337		269		660		191		225		432	
142		6.52	U	11.4	U	0.798	U	0.703	U	0.731	U	0.625	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		99.9		70.9		98.1		73.8		65.3		153	
145		0.733	U	0.571	U	0.0486	U	0.296	EMPC	0.235	EMPC	0.737	
146		767		901		2,380		811		1,080		1,420	
147	147 + 149	1,980	C	1,400	C	1,340	C	1,470	C	1,250	C	3,160	C
148		7.79		7.82	EMPC	12.3		7.27		8.56		13.9	
149	147 + 149		C147		C147		C147		C147		C147		C147
150		5.88	EMPC	3.81		2.54		3.48		4.18		7.60	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.675	U	1.14		3.06		1.08		1.18		2.32	
153	153 + 168	4,230	C	5,710	C	18,200	C	4,080	C	5,650	C	7,260	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		3.02		5.00		15.2		4.36		4.97		7.66	
156	156 + 157	490	C	448	C	1,890	C	290	C	430	C	638	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		396		391		1,420		328		302		616	
159		10.4		8.50		14.1		10.9		10.6		19.0	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		4.66	U	8.16	U	0.574	U	0.506	U	0.525	U	0.440	U
162		19.2	EMPC	18.3		77.3		14.6		21.0		28.7	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		173		122		228		115		130		232	
165		5.26	U	9.22	U	11.3		3.51		5.19		6.60	
166	128 + 166		C128		C128		C128		C128		C128		C128
167		181		168		571		117		211		242	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		4.89	U	8.57	U	8.12	U	1.30	U	1.86	U	2.79	U
170		398		498		2,180		370		459		693	
171	171 + 173	208	C	241	C	966	C	214	C	201	C	380	C
172		83.6		93.3		305		75.7		86.3		138	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		254		185		231		198		194		375	
175		28.3	EMPC	26.3		58.6		25.8		27.6		46.7	
176		58.1		44.3		40.1		48.5		34.3		97.9	
177		441		382		633		496		437		829	
178		237		288		848		275		283		470	
179		230		229		411		250		215		478	
180	180 + 193	1,040	C	1,500	C	6,100	C	1,060	C	1,550	C	1,900	C
181		10.9		8.36	EMPC	45.2		6.76		9.23		12.9	
182		4.26		6.39	EMPC	20.5		4.59		6.47		8.23	
183	183 + 185	458	C	549	C	2,010	C	483	C	547	C	857	C
184		3.98	EMPC	5.95	EMPC	21.4		4.25		5.80		8.47	
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.854	U	0.553	U	0.0631	U	0.0495	U	0.0484	U	0.0630	U
187		1,450		1,690		3,880		1,680		2,180		2,730	
188		3.35	EMPC	4.31	EMPC	9.74		4.19		5.68		7.24	
189		19.5	EMPC	23.2	EMPC	102		14.7		21.7		31.3	
190		144		201		912		169		198		292	
191		24.0		25.9		121		20.1		27.2		36.0	
192		0.908	U	0.588	U	0.0715	U	0.0495	U	0.0484	U	0.0720	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		138		208		661		133		153		244	
195		77.0		122		510		97.0		97.8		177	
196		85.8	EMPC	106		424		78.2		101		148	
197	197 + 200	27.0	C	32.3	C	85.6	C	27.0	C	25.0	C	52.0	C
198	198 + 199	210	C	261	C	582	C	228	C	241	C	420	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		40.2	EMPC	41.6		127		42.6		53.9		87.4	
202		125		205		485		143		121		265	
203		191		284		1,170		221		229		367	
204		0.683	U	0.578	U	1.66		0.365		0.472		0.738	
205		11.7		16.0		58.1		12.5		12.2		23.1	
206		76.4		136		357		86.2		77.0		137	
207		12.8		24.0		75.1		14.6		17.6		25.7	
208		29.7		44.4		90.6		37.3		32.8		60.2	
209		41.1	EMPC	72.3		153		45.7		41.5		67.6	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full RDL)		45.0	J	42.0	J	117	J	35.8	J	39.8	J	69.1	J
Total PCBs as Congeners (KM-based)		44.4	J	41.7	J	117	J	35.8	J	39.8	J	69.0	J
Total PCBs as Congeners (KM-based, capped)		44.4	J	41.7	J	117	J	35.8	J	39.8	J	69.0	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-7
Smallmouth Bass and Sucker PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Reference 31 080517R14SB 5/17/2008		Reference 32 080521R15SB 5/21/2008		Reference 33 080521R16SB 5/21/2008		Reference 34 080521R17SB 5/21/2008		Reference 35 080521R18SB 5/21/2008		Reference 36 080521R19SB 5/21/2008		Reference 37 080521R20SB 5/21/2008		Reference 38 080521R21SB 5/21/2008	
Individual Congeners in pg/g (ng/kg), wet weight																	
1		0.476	EMPC	0.403		0.566	EMPC	0.444		0.471		0.655	EMPC	0.661	EMPC	0.345	
2		0.904		0.694		0.522		0.890		0.582	EMPC	0.715		0.890		0.397	
3		0.342	EMPC	0.398	EMPC	0.391	EMPC	0.513		0.430	EMPC	0.580		0.534		0.489	
4		3.44		3.34		2.23		3.63		3.48		4.84		3.90		2.68	
5		0.184	U	0.153	EMPC	0.261	U	0.191		0.366	U	0.213	U	0.511	U	0.340	U
6		1.76		1.73		1.68		1.75		1.88		3.08		1.64		1.56	
7		0.436		0.421		0.339		0.406		0.335		0.633		0.448	U	0.350	
8		7.37		8.61		6.55		8.90		7.56		11.5		8.04		8.52	
9		0.577		0.514		0.528		0.611		0.476		0.689		0.440	U	0.451	
10		0.163	U	0.125	U	0.231	U	0.141		0.307	U	0.179	U	0.427	U	0.284	U
11		223		206		75.5		475		117		416		298		117	
12	12 + 13	0.178	C U	3.04	C EMPC	0.251	C U	0.156	C U	0.358	C U	0.209	C U	0.499	C U	0.332	C U
13	12 + 13		C12		C12		C12		C12		C12		C12		C12		C12
14		0.176	U	0.134	U	0.248	U	0.148	U	0.339	U	0.198	U	0.473	U	0.315	U
15		2.07		3.50		1.75		3.19		1.90		4.86		3.21		2.39	
16		8.80		9.25		7.26		11.4		9.53		12.8		12.5		10.0	
17		12.2		12.9		11.7		15.7		13.8		18.7		16.3		14.2	
18	18 + 30	28.0	C	26.0	C	24.6	C	34.6	C	30.1	C	40.3	C	35.9	C	29.1	C
19		2.23		2.62		1.87		2.88		2.37		3.26		2.76		2.44	
20	20 + 28	128	C	173	C	186	C	175	C	169	C	193	C	164	C	139	C
21	21 + 33	22.7	C	29.2	C	34.9	C	36.8	C	34.4	C	43.2	C	35.0	C	30.2	C
22		27.2		39.3		36.4		42.8		33.8		46.5		38.9		32.7	
23		0.151		0.124	EMPC	0.149		0.148		0.214		0.172	U	0.180	U	0.145	U
24		0.427	EMPC	0.427		0.399		0.594	EMPC	0.409	EMPC	0.688		0.138	U	0.662	EMPC
25		3.44		7.01		23.0		9.40		7.34		9.70		6.17		6.02	
26	26 + 29	12.6	C	18.7	C	47.1	C	22.3	C	19.3	C	23.3	C	18.4	C	16.2	C
27		2.00		1.87		1.64		2.76		2.43		3.03		3.11		2.31	
28	20 + 28		C20		C20		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18		C18		C18
31		59.7		94.4		99.6		101		82.5		110		84.5		81.7	
32		3.78		4.69		10.3		4.44		4.63		6.09		3.91		5.54	
33	21 + 33		C21		C21		C21		C21		C21		C21		C21		C21
34		0.326		0.501	EMPC	1.27		0.566		0.729		0.627		0.555	EMPC	0.353	EMPC
35		0.0499	U	0.0480	U	0.0832	U	0.107	U	0.203	U	0.203	U	0.213	U	0.172	U
36		0.0484	U	0.0480	U	0.0714	U	0.0919	U	0.176	U	0.175	U	0.184	U	0.148	U
37		11.5		17.6		16.5		18.8		10.0		21.0		13.4		14.0	
38		0.101	EMPC	0.154	EMPC	0.356	EMPC	0.261	EMPC	0.180	U	0.251	EMPC	0.188	U	0.152	U
39		0.998		1.49		2.02		1.68		1.51		2.03		1.75		0.150	U
40	40 + 41 + 71	30.0	C	54.2	C	126	C	68.7	C	60.0	C	90.6	C	61.2	C	65.1	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40		C40		C40
42		24.9		46.0		97.4		57.1		53.5		74.7		58.0		47.3	
43		5.23		5.30		9.49		8.90		10.9		12.8		10.7		7.92	
44	44 + 47 + 65	182	C	270	C	781	C	326	C	350	C	432	C	327	C	300	C
45	45 + 51	8.20	C	12.8	C	22.8	C	15.4	C	9.12	C EMPC	21.3	C	13.0	C	15.2	C
46		1.93		3.65		5.61		4.01		2.93		4.92		3.37		3.51	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44		C44		C44
48		24.1		30.1		39.8		38.1		39.8		53.4		44.5		32.9	
49	49 + 69	113	C	218	C	697	C	259	C	278	C	342	C	219	C	248	C
50	50 + 53	6.37	C	11.5	C	29.8	C	14.7	C	12.3	C	19.8	C	12.6	C	13.2	C
51	45 + 51		C45		C45		C45		C45		C45		C45		C45		C45
52		304		438		1,090		495		544		658		520		487	
53	50 + 53		C50		C50		C50		C50		C50		C50		C50		C50
54		0.177		0.428		0.980		0.318		0.298		0.425	EMPC	0.207		0.376	
55		0.136	U	0.208	U	0.333	U	0.204	U	0.393	U	0.393	U	0.389	U	0.326	U
56		35.0		87.3		206		112		73.3		128		74.8		88.8	
57		1.61		2.50		7.77		2.59		2.60		3.15		2.12		2.88	
58		0.930		2.04		5.14		3.12		2.38		3.12		2.27		2.53	
59	59 + 62 + 75	14.5	C	23.4	C	35.3	C	28.2	C	31.7	C	38.4	C	30.0	C	26.0	C
60		110		145		332		143		193		212		152		142	
61	61 + 70 + 74 + 76	664	C	974	C	4,660	C	992	C	1,120	C	1,390	C	905	C	1,010	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59		C59		C59
63		39.1		35.6		184		32.7		47.2		48.6		35.8		36.1	
64		83.5		136		190		151		158		204		156		146	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44		C44		C44
66		670		679		3,880		642		942		907		686		638	
67		5.21		9.34		25.7		10.6		9.50		15.6		8.27		10.7	
68		9.84		9.61		69.5		10.9		10.8		13.4		8.27		10.5	
69	49 + 69		C49		C49		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40		C40		C40
72		7.29		12.8		55.4		13.8		13.9		17.5		10.4		13.2	
73		0.0484	U	0.0480	U	0.0491	U	0.0526	U	0.0707	U	0.0760	U	0.111	U	0.0875	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61		C61		C61
77		54.8		49.3		172		53.7		59.7		70.1		52.8		49.7	
78		0.137	U	0.209	U	0.334	U	0.208	U	0.401	U	0.401	U	0.396	U	0.333	U
79		8.15		15.2		247		22.0		19.3		29.7		21.7		21.5	
80		1.00		0.862		0.286	U	0.177	U	0.341	U	0.341	U	0.337	U	1.19	
81		2.63		2.35		15.9		3.40		4.06		3.76		2.02		3.11	
82		16.7		68.4		751		86.3		79.6		125		58.9		93.5	
83	83 + 99	1,730	C	1,800	C	23,200	C	1,780	C	2,600	C	3,010	C	1,980	C	2,330	C
84		47.6		144		511		149		126		240		125		177	
85	85 + 116 + 117	465	C	533	C	5,890	C	554	C	829	C	902	C	632	C	654	C
86	86 + 87 + 97 + 108 + 119 + 125	441	C G	939	C G	10,500	C	1,100	C G	1,170	C	1,730	C G	1,050	C	1,370	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
88	88 + 91	51.7	C	138	C	838	C	155	C	137	C	253	C	131	C	196	C
89		1.16		3.30		5.90		3.32		3.75		5.15		2.88		4.12	
90	90 + 101 + 113	1,180	C	2,090	C	17,900	C	2,320	C	2,470	C	3,810	C	2,280	C	2,800	C
91	88 + 91		C88		C88		C88		C88		C88		C88		C88		C88
92		278		429		2,210		448		523		751		471		586	
93	93 + 95 + 98 + 100 + 102	354	C	672	C	3,370	C	702	C	733	C	1,150	C	694	C	848	C
94		0.492		1.63		3.40		2.08		1.47		3.51		1.31		2.90	
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93		C93
96		1.20		2.02		4.83		2.30		2.37		3.37		2.24		2.62	EMPC
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93		C93
103		3.76		11.0		47.8		12.7		12.1		22.1		10.1		16.8	
104		0.0808	U	0.220		0.223	EMPC	0.231		0.230		0.408	EMPC	0.245	U	0.343	EMPC
105		1,370		1,310		23,400		1,320		2,000		2,090		1,440		1,680	
106		0.436	U	0.316	U	1.96	U	0.536	U	1.18	U	0.686	U	0.786	U	0.548	U
107	107 + 124	57.7	C	90.0	C	1,540	C	91.4	C	90.9	C	141	C	81.9	C	118	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
109		373		308		6,030		290		443		522		362		382	
110	110 + 115	807	C	1,770	C	10,600	C	1,960	C	2,040	C	2,910	C	1,890	C	2,320	C
111		5.29		4.35		10.7		4.28		6.68	EMPC	8.35		4.00		5.35	
112		0.314	U	0.382	U	0.181	U	0.561	U	0.801	U	0.217	U	0.366	U	0.439	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90		C90		C90
114		145		87.2		2,910		82.6		132		137		97.1		106	
115	110 + 115		C110		C110		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85		C85		C85
118		6,210		3,740		98,600		3,650		5,970		5,350		4,780		4,460	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
120		29.9		21.9		57.7		22.0		32.8		37.4		28.1		27.0	
121		1.67		2.21		2.34		2.30		2.98		4.51		2.56		2.73	
122		6.75		15.3		234		19.8		10.3		28.4		9.82		20.6	
123		104		60.6		1,830		64.8		84.0		80.2		76.1		69.1	
124	107 + 124		C107		C107		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
126		14.3		9.45		74.6		9.01		13.4		12.9		10.7		8.65	

Table H-7
Smallmouth Bass and Sucker PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Reference 31 080517R14SB 5/17/2008		Reference 32 080521R15SB 5/21/2008		Reference 33 080521R16SB 5/21/2008		Reference 34 080521R17SB 5/21/2008		Reference 35 080521R18SB 5/21/2008		Reference 36 080521R19SB 5/21/2008		Reference 37 080521R20SB 5/21/2008		Reference 38 080521R21SB 5/21/2008	
127		0.469	U	0.339	U	2.10	U	0.575	U	1.27	U	0.735	U	0.843	U	0.587	U
128	128 + 166	702	C	720	C	7,850	C	727	C	1,120	C	1,250	C	849	C	912	C
129	129 + 138 + 160 + 163	6,520	C	5,160	C	66,800	C	5,450	C	7,870	C	9,990	C	6,720	C	6,760	C
130		225		298		3,900		292		296		570		303		407	
131		4.60		20.5		261		19.5		15.0		38.7		14.7		27.5	
132		167		532		3,600		476		394		867		411		640	
133		134		105		804		92.1		145		194		128		131	
134	134 + 143	36.7	C	94.8	C	718	C	87.3	C	80.1	C	176	C	85.1	C	117	C
135	135 + 151 + 154	648	C	936	C	2,980	C	914	C	1,070	C	1,870	C	1,110	C	1,270	C
136		74.2		140		558		133		137		254		151		197	
137		275		164		8,560		171		299		271		203		218	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129		C129		C129
139	139 + 140	70.5	C	73.9	C	771	C	68.1	C	108	C	136	C	87.0	C	96.9	C
140	139 + 140		C139		C139		C139		C139		C139		C139		C139		C139
141		182		244		3,540		288		420		484		313		351	
142		0.628	U	0.484	U	2.21	U	0.792	U	0.955	U	1.19	U	1.32	U	0.984	U
143	134 + 143		C134		C134		C134		C134		C134		C134		C134		C134
144		40.2		83.9		755		84.1		83.6		174		85.6		123	
145		0.0484	U	0.283	EMPC	1.08		0.379		0.206		0.571	EMPC	0.405	EMPC	0.443	EMPC
146		1,550		924		11,400		899		1,320		1,790		1,210		1,230	
147	147 + 149	640	C	1,720	C	13,000	C	1,610	C	1,310	C	3,260	C	1,440	C	2,140	C
148		4.53		7.54		12.8		7.57		8.46		17.6		8.00		11.2	
149	147 + 149		C147		C147		C147		C147		C147		C147		C147		C147
150		1.22		3.59		11.4		3.71		2.87		9.05		3.21		5.99	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135		C135		C135
152		0.993		1.28		4.30		1.24		1.50		2.29		1.57		1.75	EMPC
153	153 + 168	9,040	C	5,090	C	69,500	C	4,850	C	8,170	C	9,180	C	7,410	C	5,650	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135		C135		C135
155		6.33		4.80		3.55		4.60		7.90		10.2		7.21		6.63	
156	156 + 157	882	C	447	C	20,000	C	420	C	786	C	714	C	557	C	544	C
157	156 + 157		C156		C156		C156		C156		C156		C156		C156		C156
158		402		406		4,520		412		606		798		490		557	
159		7.57		11.4		71.6		14.3		13.3		25.2		14.1	EMPC	15.4	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129		C129		C129
161		0.442	U	0.341	U	1.55	U	0.555	U	0.670	U	0.836	U	0.928	U	0.690	U
162		35.3		19.0		442		20.0		36.0		38.6		27.9		23.5	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129		C129		C129
164		97.1		145		2,010		143		169		228		167		185	
165		5.19		4.18		12.9		3.83		6.28		8.53		4.82		4.99	EMPC
166	128 + 166		C128		C128		C128		C128		C128		C128		C128		C128
167		380		180		6,540		175		286		242		276		198	
168	153 + 168		C153		C153		C153		C153		C153		C153		C153		C153
169		3.07	U	1.54	U	6.62	U	2.16	U	4.82	U	5.96	U	3.56	U	2.10	U
170		831		480		7,510		491		866		887		636		522	
171	171 + 173	305	C	246	C	1,020	C	245	C	389	C	548	C	345	C	311	C
172		114		86.5		869		98.0		159		193		115		101	
173	171 + 173		C171		C171		C171		C171		C171		C171		C171		C171
174		121		212		1,480		242		220		447		235		270	
175		28.3		27.7		142		29.3		36.0		71.5		37.1		39.4	
176		19.0		54.9		134		50.4		37.4		124		45.7		76.9	
177		417		512		2,030		503		462		1,220		550		675	
178		338		307		584		291		422		683		419		384	
179		154		264		271		244		243		549		315		348	
180	180 + 193	3,000	C	1,300	C	15,600	C	1,380	C	2,670	C	2,870	C	2,110	C	1,460	C
181		15.7		9.11		258		10.0		16.8		18.8		14.4		12.0	
182		6.95		5.64		27.5		7.89		13.4		15.8		10.7		9.23	
183	183 + 185	759	C	542	C	2,520	C	583	C	904	C	1,290	C	843	C	700	C
184		7.07		5.00		4.75		4.51		8.34		10.9		8.55		6.70	
185	183 + 185		C183		C183		C183		C183		C183		C183		C183		C183
186		0.0484	U	0.0597	U	0.0594	U	0.0919	U	0.126	U	0.158	U	0.187	U	0.175	U
187		2,640		1,750		6,820		1,800		2,510		4,090		2,650		2,330	
188		6.31		4.57		10.8		4.36		6.67		10.1		6.91		6.04	
189		44.4		19.7		532		20.9		38.6		37.5		29.5		20.5	
190		411		209		1,520		217		381		431		345		243	
191		48.3		25.3		308		28.4		52.0		59.5		42.3		31.9	
192		0.0500	U	0.0682	U	0.0679	U	0.119	U	0.163	U	0.205	U	0.242	U	0.226	U
193	180 + 193		C180		C180		C180		C180		C180		C180		C180		C180
194		344		163		1,150		157		285		289		204		134	
195		219		105		385		91.8		172		195		146		97.2	
196		189		93.1		478		97.1		187		193		147		96.2	
197	197 + 200	31.1	C	27.0	C	57.7	C	28.7	C	39.2	C	64.3	C	35.1	C	35.1	C
198	198 + 199	348	C	263	C	1,020	C	277	C	465	C	532	C	315	C	248	C
199	198 + 199		C198		C198		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197		C197		C197
201		71.0		46.1		113		43.6		66.9		110		67.6		55.1	
202		186		161		191		144		232		348		198		166	
203		443		255		621		252		468		506		364		234	
204		0.657		0.459		0.633		0.427		1.06		0.932	EMPC	0.540		0.491	EMPC
205		23.2		13.7		43.2		13.8		22.9		28.6		19.2		13.4	
206		131		96.9		245		94.4		185		171		107		70.8	
207		31.7		16.4		45.4		14.9		34.4		30.8		23.3		15.2	
208		44.9		37.9		71.8		37.0		65.3		73.0		38.9		31.0	
209		65.0		38.1		65.6		43.1		67.2		77.6		52.2		31.7	
Total PCBs as Congeners in ug/kg, wet weight																	
Total PCBs as Congeners (full EMPC/full RDL)		50.2	J	43.1	J	499	J	44.2	J	60.6	J	77.9	J	53.0	J	52.8	J
Total PCBs as Congeners (KM-based)		50.2	J	43.1	J	499	J	44.2	J	60.6	J	77.9	J	52.9	J	52.8	J
Total PCBs as Congeners (KM-based, capped)		50.2	J	43.1	J	499	J	44.2	J	60.6	J	77.9	J	52.9	J	52.8	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P04 08022604SD 2/26/2008		Forebay P07 08021507SD 2/15/2008		Forebay P08 08021508SD 2/15/2008		Forebay P09 08021409SD 2/14/2008		Forebay P10 08021410SD 2/14/2008		Forebay P11 08021411SD 2/14/2008	
Individual Congeners in pg/g (ng/kg), dry weight													
1		1.16		0.181		0.168		0.296	EMPC	0.324	EMPC	0.257	
2		2.78		1.28		1.69		6.62		4.86		4.76	
3		0.500	EMPC	0.206		0.252	EMPC	0.467		0.416	EMPC	0.351	
4		7.11		1.46		0.628		0.985		0.566		2.24	
5		0.0659	U	0.0521	U	0.0719	U	0.0625	U	0.0504	U	0.0438	U
6		0.897		0.254		0.219	EMPC	0.352		0.292		0.736	
7		0.597		0.163	EMPC	0.124		0.222	EMPC	0.172		0.131	EMPC
8		4.61		1.14		0.958		1.67		1.52		3.83	
9		0.758		0.149	EMPC	0.0830	EMPC	0.161		0.119		0.197	
10		0.323		0.0670	EMPC	0.0653	U	0.0569	U	0.0477	U	0.0670	
11		79.5		42.6		52.6		68.8		84.4		86.8	
12	12 + 13	1.52	C	0.503	C EMPC	0.551	C	0.974	C	0.803	C EMPC	1.15	C
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.0612	U	0.0484	U	0.0668	U	0.0581	U	0.0477	U	0.0660	
15		6.40		1.67		2.01		2.76		3.26		4.26	
16		1.71		0.667		0.457		0.942		0.813		5.69	
17		12.1		2.28		1.14		2.44		2.67		5.25	
18	18 + 30	12.0	C	2.74	C	1.55	C	3.07	C	2.33	C	11.2	C
19		4.73		0.986		0.362		0.878	EMPC	0.394		1.56	
20	20 + 28	52.9	C	5.68	C	5.61	C	10.1	C	13.2	C	20.7	C
21	21 + 33	12.8	C	2.15	C	1.59	C	3.91	C	2.78	C	10.1	C
22		7.70		1.29		1.45		2.42		2.37		7.51	
23		0.0491	U	0.0473	U	0.0505	U	0.0495	U	0.0477	U	0.0368	U
24		0.135	EMPC	0.0473	U	0.0478	U	0.0590	EMPC	0.0477	U	0.176	
25		20.9		0.608		0.449	EMPC	0.825		0.937		1.36	
26	26 + 29	32.7	C	0.970	C	0.717	C	1.39	C	1.39	C	3.07	C
27		4.33		0.726		0.374		0.747		0.524		0.864	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		36.7		4.32		3.62		6.58		5.89		15.5	
32		13.5		1.06		0.448		1.00		0.918		3.13	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.463		0.0473	U	0.0485	U	0.0790	EMPC	0.0650	EMPC	0.0810	
35		0.488		0.173	EMPC	0.305		0.346		0.440		0.617	
36		0.132		0.0473	U	0.128	EMPC	0.106		0.143		0.154	
37		8.11		1.63		2.05		3.00		3.20		6.47	
38		0.106	EMPC	0.0473	U	0.0550	EMPC	0.129	EMPC	0.0960	EMPC	0.131	
39		0.451	EMPC	0.0580	EMPC	0.0478	U	0.0780	EMPC	0.0560	EMPC	0.104	
40	40 + 41 + 71	97.6	C	7.84	C	3.21	C	7.96	C	4.57	C	7.50	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		39.8		4.32		1.92		4.65		2.83		4.07	
43		4.96	EMPC	0.653		0.296		0.591	EMPC	0.459		0.559	
44	44 + 47 + 65	403	C	37.0	C	15.7	C	34.8	C	19.0	C	17.1	C
45	45 + 51	21.6	C	1.45	C	0.655	C	0.927	C	0.631	C	2.37	C
46		7.95		0.607		0.222		0.607		0.343		0.817	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		14.7		1.79		1.01		2.24		1.46		3.00	
49	49 + 69	299	C	23.0	C	10.2	C	24.2	C	12.1	C	9.54	C
50	50 + 53	49.8	C	3.87	C	1.49	C	3.50	C	2.18	C	1.89	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		964		87.0		34.1		70.8		32.2		24.7	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		1.28		0.109	EMPC	0.0478	U	0.136		0.0540	EMPC	0.0420	EMPC
55		4.34		0.597		0.203		0.676	EMPC	0.307		0.134	U
56		117		9.68		5.45		10.4		6.92		7.60	
57		1.19		0.0895	U	0.0814	U	0.144	U	0.146	U	0.134	U
58		1.47		0.127	EMPC	0.130	EMPC	0.178	EMPC	0.146	U	0.134	U
59	59 + 62 + 75	9.53	C	0.900	C	0.549	C	1.43	C	1.02	C	1.47	C
60		49.7		3.95		2.89		4.71		3.40		4.48	
61	61 + 70 + 74 + 76	1,250	C	85.8	C	45.7	C	85.7	C	45.6	C	33.0	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		12.7		0.963		0.711	EMPC	1.46		0.822		0.708	
64		137		13.6		6.70		13.2		6.89		7.10	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		356		27.3		16.8		33.3		20.5		17.1	
67		4.03		0.185		0.164	EMPC	0.292	EMPC	0.265		0.483	
68		2.56		0.131	EMPC	0.0830	EMPC	0.451	EMPC	0.245	EMPC	0.130	U
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		3.55		0.236		0.148	EMPC	0.582		0.277		0.175	EMPC
73		0.0491	U	0.0473	U	0.0478	U	0.0495	U	0.0477	U	0.0368	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		7.09		1.10		1.21		1.99		1.98		2.31	
78		0.406	U	0.0865	U	0.0786	U	0.139	U	0.141	U	0.130	U
79		21.7		1.16		0.648		1.44	EMPC	0.660		0.389	EMPC
80		0.373	U	0.0795	U	0.0723	U	0.128	U	0.130	U	0.119	U
81		3.40	EMPC	0.192	EMPC	0.103	EMPC	0.140	U	0.147	EMPC	0.129	U
82		232		14.0		7.06		14.7		6.50		4.67	
83	83 + 99	1,360	C	73.4	C	42.6	C	86.0	C	40.9	C	26.0	C
84		493		36.4		15.1		34.0		15.0		10.4	
85	85 + 116 + 117	426	C	25.2	C	15.2	C	27.6	C	14.0	C	9.40	C
86	86 + 87 + 97 + 108 + 119 + 125	1,580	C	93.4	C	48.4	C	94.5	C	43.7	C	31.9	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	292	C	20.0	C	9.18	C	19.3	C	9.36	C	5.51	C
89		13.0		0.851		0.414		0.905		0.389		0.301	
90	90 + 101 + 113	2,180	C	125	C	66.3	C	136	C	63.0	C	47.1	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		368		22.1		11.4		24.4		12.2		9.40	
93	93 + 95 + 98 + 100 + 102	1,550	C	121	C	51.8	C	105	C	48.0	C	35.6	C
94		6.65		0.476		0.202	EMPC	0.483	EMPC	0.226		0.141	
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		6.32		0.653		0.239		0.588		0.268		0.178	
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		8.63		0.599		0.325		0.880		0.428		0.275	
104		0.127	EMPC	0.0473	U	0.0478	U	0.0495	U	0.0477	U	0.0368	U
105		1,080		47.5		33.5		57.2		31.1		21.1	
106		2.43	U	0.178	U	0.138	U	0.127	U	0.117	U	0.0860	U
107	107 + 124	95.4	C	4.00	C	2.83	C	5.10	C	2.53	C	2.05	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		149		7.04		5.17		10.0		4.91		3.90	
110	110 + 115	2,690	C	171	C	90.1	C	171	C	84.3	C	59.2	C
111		0.216	U	0.0479	U	0.0478	U	0.0675	U	0.0477	U	0.0378	U
112		0.210	U	0.0473	U	0.0478	U	0.0656	U	0.0477	U	0.0368	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		60.3		2.80		1.85		3.27		1.71	EMPC	1.17	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		2,650		131		92.6		145		79.4		52.8	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		0.780	EMPC	0.106	EMPC	0.113	EMPC	0.317		0.229		0.206	
121		0.219	U	0.0486	U	0.0478	U	0.0684	U	0.0477	U	0.0384	U
122		27.2		1.25		0.806	EMPC	1.61		0.725		0.557	
123		36.3		1.90	EMPC	1.44		2.04		1.19		0.859	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		2.69	U	0.203	U	0.177	EMPC	0.219	EMPC	0.252	EMPC	0.212	EMPC
127		2.51	U	0.184	U	0.143	U	0.131	U	0.121	U	0.0888	U

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P04 08022604SD 2/26/2008		Forebay P07 08021507SD 2/15/2008		Forebay P08 08021508SD 2/15/2008		Forebay P09 08021409SD 2/14/2008		Forebay P10 08021410SD 2/14/2008		Forebay P11 08021411SD 2/14/2008	
128	128 + 166	445	C	14.7	C	13.0	C	26.5	C	14.6	C	12.6	C
129	129 + 138 + 160 + 163	2,340	C	85.9	C	74.2	C	138	C	82.5	C	74.2	C
130		142		5.14		4.29		9.23		5.29		4.88	
131		32.4		1.11		0.742		1.68		0.881		0.775	
132		725		25.2		18.0		41.8		21.2		18.9	
133		19.8		0.866		0.791		1.68		1.07		1.06	
134	134 + 143	105	C	3.84	C	2.73	C	6.51	C	3.33	C	2.98	C
135	135 + 151 + 154	376	C	18.3	C	13.9	C	31.4	C	19.9	C	20.0	C
136		152		7.76		4.71		11.5		6.15		5.68	
137		178		5.16		4.31		7.92		3.75		3.11	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	48.2	C	1.68	C	1.26	C	2.77	C	1.42	C	1.23	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		273		7.76		6.16		15.0		7.60		7.88	
142		1.16	U	0.120	U	0.114	U	0.162	U	0.133	U	0.106	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		54.6		2.38		1.89		3.90		2.10		2.20	
145		0.838		0.0473	U	0.0478	U	0.0740	EMPC	0.0477	U	0.0368	U
146		269		12.4		10.9		20.0		12.5		11.9	
147	147 + 149	1,190	C	49.0	C	37.0	C	81.3	C	46.6	C	44.6	C
148		0.844		0.0660	EMPC	0.0478	U	0.184	EMPC	0.139		0.104	
149	147 + 149		C147		C147		C147		C147		C147		C147
150		1.54		0.0690	EMPC	0.0760	EMPC	0.181		0.106		0.106	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		1.80		0.0780		0.0490	EMPC	0.104	EMPC	0.0600		0.0630	
153	153 + 168	1,580	C	72.6	C	62.0	C	101	C	68.0	C	64.4	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.0491	U	0.0473	U	0.0478	U	0.0495	U	0.0477	U	0.0490	EMPC
156	156 + 157	380	C	12.0	C	10.4	C	19.5	C	10.6	C	8.74	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		245		7.81		6.61		13.0		6.91		6.31	
159		6.36		0.232	EMPC	0.266		0.609		0.443		0.485	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.822	U	0.0849	U	0.0804	U	0.115	U	0.0940	U	0.0746	U
162		8.11		0.182	EMPC	0.211		0.410	EMPC	0.233		0.226	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		118		4.42		3.36		7.97		4.40		4.03	
165		0.934	U	0.0964	U	0.0913	U	0.130	U	0.107	U	0.0848	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		113		4.52		4.30		6.33		3.91		3.49	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.879	U	0.0923	U	0.0881	U	0.126	U	0.123	U	0.111	U
170		190		5.53		6.14		14.4		10.6		10.4	
171	171 + 173	59.2	C	1.88	C	2.28	C	5.17	C	4.06	C	4.13	C
172		30.1		0.852		1.03		2.77		2.17		2.27	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		127		4.02		4.53		12.2		9.72		9.65	
175		5.87		0.255		0.284		0.608		0.448		0.518	
176		18.1		0.625		0.761		1.82		1.39		1.56	
177		81.6		3.74		4.69		9.64		8.49		8.98	
178		22.1		1.24		1.68		3.52		3.40		3.56	
179		38.9		2.04		2.65		5.88		5.29		5.73	
180	180 + 193	316	C	11.2	C	12.7	C	29.1	C	23.7	C	24.3	C
181		4.54		0.153		0.108	EMPC	0.281	EMPC	0.180	EMPC	0.165	
182		1.41		0.0750		0.0490	EMPC	0.172	EMPC	0.108	EMPC	0.108	
183	183 + 185	102	C	3.96	C	4.58	C	10.2	C	8.38	C	9.08	C
184		0.168	EMPC	0.0473	U	0.0478	U	0.0600		0.0670	EMPC	0.0670	EMPC
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.104	EMPC	0.0473	U	0.0478	U	0.0495	U	0.0477	U	0.0368	U
187		153		8.76		11.1		24.3		22.0		23.4	
188		0.149		0.0473	U	0.0478	U	0.0710	EMPC	0.0730		0.0590	
189		9.01		0.331	EMPC	0.347	EMPC	0.787		0.617		0.589	
190		34.6		1.45		1.66		3.47		2.87		2.98	EMPC
191		7.46		0.220		0.242		0.569		0.450		0.483	
192		0.0491	U	0.0473	U	0.0478	U	0.0495	U	0.0477	U	0.146	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		40.4		2.08		2.94		6.83		6.09		5.38	
195		17.3		1.21		1.71		3.36		3.03		2.99	
196		21.7		1.11		1.48		3.79		3.17		3.05	
197	197 + 200	9.25	C J	0.610	C	0.726	C	1.23	C J	1.09	C J	1.74	C
198	198 + 199	42.6	C	2.80	C	4.05	C	9.73	C	8.92	C	8.23	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		5.47		0.371	EMPC	0.596		1.31		1.08		1.16	
202		10.2		1.02		1.57		3.19		2.96		3.06	
203		31.2		2.26		3.40		6.95		6.36		6.09	
204		0.0491	U	0.0473	U	0.0478	U	0.0495	U	0.0477	U	0.0368	U
205		2.56		0.158	EMPC	0.235	EMPC	0.437	EMPC	0.406		0.404	EMPC
206		15.5		1.88		2.85		6.96		6.35		5.52	
207		2.22		0.254	EMPC	0.405	EMPC	0.948		0.888		0.810	
208		3.84		0.707		0.988	EMPC	2.56		2.35		2.11	
209		7.48		1.85		2.94		7.14		7.75		7.16	
Total PCBs as Congeners in ug/kg, dry weight													
Total PCBs as Congeners (full EMPC/full SDL)		29.7	J	1.70	J	1.09	J	2.10	J	1.24	J	1.13	J
Total PCBs as Congeners (KM-based)		29.7	J	1.69	J	1.08	J	2.10	J	1.24	J	1.12	J
Total PCBs as Congeners (KM-based, capped)		29.7	J	1.69	J	1.08	J	2.10	J	1.24	J	1.12	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P15 08022115SD 2/21/2008		Forebay P16 08022116SD 2/21/2008		Forebay P17 08022117SD 2/21/2008		Forebay P18 08021118SD 2/11/2008		Forebay P21 08021221SD 2/12/2008		Forebay P05 08031905SD 3/19/2008	
Individual Congeners in pg/g (ng/kg), dry weight													
1		0.671		0.298	EMPC	0.337	EMPC	0.183		0.212		0.179	
2		6.34		6.03		4.21		1.54		3.61		0.113	U
3		0.515		0.387	EMPC	0.371	EMPC	0.245	EMPC	0.294	EMPC	0.153	EMPC
4		0.965		0.892		0.457		0.466		0.386		0.777	
5		0.0700	EMPC	0.0493	U	0.0669	UJ	0.0480	U	0.0488	U	0.0479	U
6		0.431		0.472		0.294	EMPC	0.215		0.230		0.182	
7		0.133	EMPC	0.155	EMPC	0.0920	J	0.122		0.134		0.153	
8		1.95		2.65		1.27	J	0.978		1.01		0.394	U
9		0.107	EMPC	0.147		0.0800	EMPC	0.0600		0.0570		0.0750	EMPC
10		0.0618	U	0.0478	U	0.0585	UJ	0.0478	U	0.0488	U	0.0580	
11		118		92.2		65.2	J	71.5		71.1		11.9	
12	12 + 13	1.04	C EMPC	1.10	C	0.776	C J	0.740	C	0.936	C	0.185	C EMPC
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.0720		0.0640	EMPC	0.0605	UJ	0.0478	U	0.0488	U	0.0479	U
15		2.83		4.36		2.33		1.75		2.70		0.676	
16		1.99		2.09		0.817	EMPC	0.759		0.521		0.163	EMPC
17		2.18		2.47		0.970		0.759		0.646		0.804	
18	18 + 30	4.79	C	4.66	C	2.04	C	1.96	C	1.42	C	1.23	C
19		0.399		0.559	EMPC	0.255	EMPC	0.201	EMPC	0.161	EMPC	0.524	
20	20 + 28	10.7	C	13.2	C	8.21	C	5.31	C	5.49	C	1.30	C
21	21 + 33	3.53	C	5.27	C	2.87	C	1.49	C	1.53	C	0.315	C U
22		3.83		3.99		2.70		1.89		1.58		0.319	
23		0.0618	U	0.0478	U	0.0475	U	0.0478	U	0.0488	U	0.0479	U
24		0.0660	EMPC	0.0880	EMPC	0.0475	U	0.0478	U	0.0488	U	0.0479	U
25		0.600		0.861		0.435		0.250		0.250	EMPC	0.628	
26	26 + 29	1.28	C	1.73	C	0.922	C	0.498	C	0.529	C	0.781	C
27		0.429		0.377		0.140		0.182		0.114		0.282	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		7.18		8.59		5.58		3.50		3.35		0.971	
32		0.820		1.15		0.661		0.321		0.221		0.755	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.0618	U	0.0630		0.0475	U	0.0478	U	0.0488	U	0.0479	U
35		0.516		0.532		0.344		0.298		0.347	EMPC	0.0479	U
36		0.163		0.117		0.106	EMPC	0.0910	EMPC	0.115	EMPC	0.0479	U
37		4.00		5.01		2.94		2.21		2.60		0.396	U
38		0.175		0.115	EMPC	0.0920		0.0570	EMPC	0.0580		0.0479	U
39		0.0920	EMPC	0.0560	EMPC	0.0475	U	0.0478	U	0.0488	U	0.0479	U
40	40 + 41 + 71	4.98	C	3.83	C	2.55	C	2.30	C	1.52	C	1.38	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		3.66		2.43		1.55		1.75		1.11		0.724	
43		0.356		0.230	EMPC	0.191		0.143		0.119		0.105	
44	44 + 47 + 65	14.8	C	9.75	C	6.35	C	7.14	C	5.02	C	6.40	C
45	45 + 51	1.48	C	1.15	C	0.783	C	0.602	C	0.443	C	0.553	C
46		0.458		0.399		0.235		0.178	EMPC	0.142	EMPC	0.208	EMPC
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		2.11		1.63		1.05		1.05		0.680		0.241	
49	49 + 69	7.72	C	5.59	C	3.86	C	3.62	C	3.08	C	4.07	C
50	50 + 53	1.46	C	1.05	C	0.666	C	0.620	C	0.408	C	1.38	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		17.0		11.8		8.12		8.54		7.33		13.1	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0618	U	0.0478	U	0.0486	U	0.0478	U	0.0488	U	0.0900	EMPC
55		0.189	EMPC	0.171		0.208		0.180		0.172	EMPC	0.0802	U
56		6.32		5.47		4.29		3.56		2.64		1.28	
57		0.128	U	0.0742	U	0.0854	U	0.112	U	0.0915	U	0.0768	U
58		0.135	U	0.0781	U	0.0898	U	0.118	U	0.0963	U	0.0808	U
59	59 + 62 + 75	1.13	C	0.879	C	0.577	C	0.567	C	0.450	C	0.122	C
60		3.63		2.95		2.70		2.45		1.92		0.701	
61	61 + 70 + 74 + 76	26.9	C	22.2	C	18.5	C	15.4	C	13.3	C	11.8	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		0.726		0.534		0.477		0.379		0.347	EMPC	0.127	EMPC
64		5.91		4.42		3.35		3.30		2.45		1.99	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		15.7		13.0		10.6		9.17		8.20		4.20	
67		0.368		0.341		0.225	EMPC	0.155		0.164		0.0675	U
68		0.158	EMPC	0.140	EMPC	0.0827	U	0.109	U	0.0886	U	0.0744	U
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		0.215	EMPC	0.174	EMPC	0.103	EMPC	0.109	U	0.0887	U	0.0744	U
73		0.0618	U	0.0478	U	0.0475	U	0.0478	U	0.0488	U	0.0479	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		2.40		2.17		1.51		1.32		1.47		0.209	
78		0.127	U	0.0734	U	0.0845	U	0.111	U	0.0905	U	0.0760	U
79		0.482		0.379		0.227	EMPC	0.205	EMPC	0.248		0.186	EMPC
80		0.117	U	0.0680	U	0.0783	U	0.103	U	0.0839	U	0.0704	U
81		0.138	U	0.0754	U	0.0802	U	0.115	U	0.0934	U	0.0773	U
82		2.94		2.97		1.84		1.65		1.62		1.98	
83	83 + 99	24.4	C	17.9	C	12.3	C	11.7	C	11.6	C	11.1	C
84		5.94		4.88		3.12		2.73		2.59		3.89	
85	85 + 116 + 117	7.79	C	6.93	C	4.90	C	4.22	C	4.38	C	3.98	C
86	86 + 87 + 97 + 108 + 119 + 125	23.5	C	18.2	C	12.1	C	11.8	C	11.8	C	13.0	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	4.21	C	3.24	C	2.23	C	2.06	C	1.90	C	2.39	C
89		0.251	EMPC	0.182	EMPC	0.109	EMPC	0.136		0.0750	EMPC	0.107	
90	90 + 101 + 113	36.9	C	27.6	C	18.7	C	17.3	C	18.4	C	16.6	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		7.26		5.52		4.57		3.31		3.49		2.72	
93	93 + 95 + 98 + 100 + 102	26.0	C	18.1	C	12.4	C	11.6	C	10.5	C	14.0	C
94		0.111		0.0590	EMPC	0.0600	EMPC	0.0478	U	0.0488	U	0.0670	
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.140		0.0850	EMPC	0.0600	EMPC	0.0510	EMPC	0.0540		0.0660	EMPC
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		0.295	EMPC	0.183		0.128		0.113	EMPC	0.121	EMPC	0.0770	EMPC
104		0.0618	U	0.0478	U	0.0475	U	0.0478	U	0.0488	U	0.0479	U
105		18.8		16.8		12.0		11.3		12.5		9.54	
106		0.116	U	0.0726	U	0.0494	U	0.0712	U	0.0791	U	0.0637	U
107	107 + 124	1.41	C	1.34	C	0.947	C	0.820	C	0.966	C	0.718	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		3.64		3.16		2.27		1.96		2.52		1.37	
110	110 + 115	43.6	C	39.3	C	26.8	C	22.8	C	24.8	C	23.9	C
111		0.0618	U	0.0478	U	0.0475	U	0.0478	U	0.0488	U	0.0479	U
112		0.0618	U	0.0478	U	0.0475	U	0.0478	U	0.0488	U	0.0479	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		0.965	EMPC	0.813		0.665		0.621		0.666		0.631	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		51.6		40.8		27.4		29.0		29.9		29.4	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		0.249		0.227		0.130		0.110		0.154		0.0479	U
121		0.0618	U	0.0478	U	0.0475	U	0.0478	U	0.0488	U	0.0479	U
122		0.344	EMPC	0.417		0.291		0.270		0.289		0.227	EMPC
123		0.796		0.833		0.459		0.582		0.569		0.610	EMPC
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		0.296	EMPC	0.238		0.173		0.123	EMPC	0.189		0.0725	U
127		0.118	U	0.0736	U	0.0501	U	0.0722	U	0.0802	U	0.0646	U

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P15 08022115SD 2/21/2008		Forebay P16 08022116SD 2/21/2008		Forebay P17 08022117SD 2/21/2008		Forebay P18 08021118SD 2/11/2008		Forebay P21 08021221SD 2/12/2008		Forebay P05 08031905SD 3/19/2008	
128	128 + 166	9.53	C	9.51	C	6.89	C	5.57	C	7.54	C	3.22	C
129	129 + 138 + 160 + 163	62.5	C	55.9	C	39.5	C	35.5	C	43.3	C	20.9	C
130		3.78		3.62		2.56		2.16		2.90		1.10	
131		0.434		0.483	EMPC	0.277		0.237		0.389	EMPC	0.214	EMPC
132		12.0		12.2		8.41		6.06		10.1		4.47	
133		0.956	EMPC	0.836		0.607		0.559		0.743		0.177	
134	134 + 143	1.95	C	1.91	C	1.25	C	1.03	C	1.51	C	0.732	C
135	135 + 151 + 154	18.9	C	15.3	C	9.93	C	8.92	C	11.8	C	3.02	C
136		4.58		3.86		2.19		1.92		2.83		1.15	
137		1.65		1.74		1.22		1.24		1.49		1.23	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	0.855	C	0.785	C EMPC	0.550	C	0.442	C	0.648	C	0.277	C EMPC
140	139 + 140		C139		C139		C139		C139		C139		C139
141		4.92		5.21		3.59		2.71		4.09		1.64	
142		0.0772	U	0.0951	U	0.0728	U	0.0537	U	0.0868	U	0.0479	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		1.65		1.51	EMPC	1.11		0.829		1.25	EMPC	0.424	
145		0.0618	U	0.0478	U	0.0475	U	0.0478	U	0.0488	U	0.0479	U
146		12.0		10.3		7.86		7.06		7.12		2.43	
147	147 + 149	37.8	C	32.7	C	23.7	C	18.7	C	25.3	C	9.13	C
148		0.114	EMPC	0.117	EMPC	0.0770	EMPC	0.151		0.101	EMPC	0.0479	U
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.100	EMPC	0.0730	EMPC	0.0475	U	0.0478	U	0.0580		0.0479	U
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.0618	U	0.0478	U	0.0475	U	0.0478	U	0.0488	U	0.0479	U
153	153 + 168	66.7	C	51.0	C	35.1	C	38.3	C	38.8	C	20.4	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.0690		0.0478	U	0.0475	U	0.0478	U	0.0488	U	0.0479	U
156	156 + 157	6.53	C	6.61	C	4.48	C	3.81	C	4.70	C	3.50	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		4.55		4.49		3.09		2.58		3.41		1.76	
159		0.452		0.420		0.340		0.202		0.307		0.0550	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.0618	U	0.0683	U	0.0523	U	0.0478	U	0.0623	U	0.0479	U
162		0.158	EMPC	0.0727	U	0.130	EMPC	0.101		0.123	EMPC	0.0530	EMPC
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		2.92		2.94		2.08		1.59		2.27		0.931	EMPC
165		0.0642	U	0.0791	U	0.0605	U	0.0478	U	0.0722	U	0.0479	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		3.37		2.87		1.84		1.90		1.90		1.52	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.161	EMPC	0.132	U	0.109	U	0.0841	U	0.103	U	0.0479	U
170		9.65		10.4		8.28		4.95		6.51		1.80	
171	171 + 173	4.05	C	4.12	C	2.74	C	2.05	C	2.61	C	0.577	C
172		2.13		2.04	EMPC	1.34		1.02		1.25		0.212	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		9.67		9.52		6.72		4.68		6.26		1.01	
175		0.542		0.524		0.292		0.267		0.343		0.0479	U
176		1.60		1.47		1.09		0.801		1.11		0.140	EMPC
177		9.85		9.45		6.50		4.72		6.26		0.807	
178		4.36		3.57		2.61		2.28		2.52		0.328	EMPC
179		6.75		6.18		4.18		3.40		4.92		0.491	
180	180 + 193	27.7	C	26.1	C	20.9	C	14.0	C	16.7	C	3.50	C
181		0.134		0.152	EMPC	0.0580	EMPC	0.0750		0.107	EMPC	0.0479	U
182		0.185		0.0478	U	0.105	EMPC	0.0900		0.0488	U	0.0479	U
183	183 + 185	9.97	C	8.75	C	6.13	C	4.78	C	5.39	C	1.04	C
184		0.0660		0.0680		0.0590	EMPC	0.0478	U	0.0540		0.0479	U
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0618	U	0.0478	U	0.0475	U	0.0478	U	0.0488	U	0.0479	U
187		28.3		23.3		17.4		13.9		15.4		2.31	
188		0.0990		0.0570	EMPC	0.0475	U	0.0478	U	0.0520	EMPC	0.0479	U
189		0.534	EMPC	0.452		0.428	EMPC	0.217	EMPC	0.332		0.127	EMPC
190		3.53		2.68		1.91		1.73		2.06		0.447	
191		0.523	EMPC	0.412	EMPC	0.354		0.229		0.316		0.0600	EMPC
192		0.0618	U	0.0949	U	0.106	U	0.0478	U	0.0488	U	0.0479	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		4.82		4.86		4.77		2.40		3.67		0.429	
195		2.05		3.38		2.56		1.10		1.57		0.226	
196		2.75		2.82		2.40		1.55		2.16		0.215	
197	197 + 200	1.15	C J	1.35	C	1.31	C EMPC	0.722	C J	0.886	C J	0.0840	C
198	198 + 199	7.79	C	7.77	C	6.68	C	4.97	C	6.22	C	0.582	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		1.22		1.15		0.789		0.676		0.893		0.0810	
202		3.29		2.92		2.17		1.83		2.12		0.171	
203		6.28		5.77		4.62		3.85		4.40		0.542	
204		0.0618	U	0.0478	U	0.0475	U	0.0478	U	0.0488	U	0.0479	U
205		0.372		0.400		0.331		0.169		0.281		0.0480	
206		5.36		6.06		4.52		3.91		4.78		0.415	
207		0.700		0.763		0.569	EMPC	0.487		0.621	EMPC	0.112	U
208		2.09		2.27		1.72		1.55		1.85		0.113	U
209		5.44		7.30		4.83		3.20		8.55		0.663	U
Total PCBs as Congeners in ug/kg, dry weight													
Total PCBs as Congeners (full EMPC/full SDL)		0.979	J	0.842	J	0.593	J	0.524	J	0.575	J	0.306	J
Total PCBs as Congeners (KM-based)		0.973	J	0.836	J	0.588	J	0.523	J	0.571	J	0.301	J
Total PCBs as Congeners (KM-based, capped)		0.973	J	0.836	J	0.588	J	0.523	J	0.571	J	0.301	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P06 08031806SD 3/18/2008		Forebay P13 08031713SD 3/17/2008		Forebay P14 08031814SD 3/18/2008		Forebay P65 08022965SD 2/29/2008		Forebay P67 08030367SD 3/3/2008		Forebay P88 08031788SD 3/17/2008	
Individual Congeners in pg/g (ng/kg), dry weight													
1		0.368	U	0.240		0.110		0.147		0.104		0.144	
2		0.711	EMPC	3.00		0.832		2.07		0.170	U	0.432	
3		0.467		0.343	EMPC	0.123	EMPC	0.206		0.0660	EMPC	0.184	EMPC
4		1.39	EMPC	0.820		0.197	EMPC	0.291		0.113		0.283	
5		0.212	UJ	0.0486	U	0.0509	U	0.0487	U	0.0479	U	0.0571	U
6		0.258	EMPC	0.359	J	0.0790		0.148		0.0600	EMPC	0.125	
7		0.202	UJ	0.487		0.177	EMPC	0.0740		0.0830	EMPC	0.0860	U
8		1.15	EMPC	1.49		0.343	U	0.690	U	0.246	U	0.460	
9		0.189	UJ	0.0930	EMPC	0.0484	U	0.0487	U	0.0479	U	0.0525	U
10		0.191	UJ	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0514	U
11		32.1	J	110		20.9		48.5		10.5		35.1	
12	12 + 13	0.223	C UJ	0.857	C EMPC	0.456	C	0.684	C	0.156	C EMPC	0.0565	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.204	UJ	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0546	U
15		1.02		2.75		0.771		1.74		0.346		0.876	
16		0.408		1.19		0.185		0.472		0.125	EMPC	0.402	
17		1.25		1.20		0.168		0.478		0.127	EMPC	0.389	
18	18 + 30	1.52	C	3.53	C	0.402	C	1.10	C	0.273	C	0.870	C
19		0.723		0.230		0.0630	EMPC	0.104	EMPC	0.0530	EMPC	0.136	EMPC
20	20 + 28	2.94	C	7.12	C	1.57	C	4.17	C	0.908	C	1.86	C
21	21 + 33	1.23	C	2.41	C	0.434	C U	1.13	C	0.333	C U	0.687	C
22		0.698		2.53		0.447		1.21		0.392		0.678	
23		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
24		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
25		0.405		0.401		0.0820		0.203		0.0479	U	0.107	
26	26 + 29	0.678	C	0.945	C	0.153	C	0.437	C	0.120	C	0.229	C
27		0.395		0.280		0.0520	EMPC	0.0890		0.0479	U	0.0970	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		2.49		5.00		0.927		2.46		0.593	U	1.16	
32		0.635		0.387		0.0860	EMPC	0.188		0.0900		0.178	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
35		0.150		0.418		0.0910	EMPC	0.221		0.0540	EMPC	0.118	
36		0.0626	U	0.0970		0.0484	U	0.0640	EMPC	0.0479	U	0.0423	U
37		0.808		3.96		0.745		1.88		0.439		0.811	
38		0.0626	U	0.0970		0.0484	U	0.0487	U	0.0479	U	0.0423	U
39		0.0626	U	0.0630		0.0484	U	0.0487	U	0.0479	U	0.0423	U
40	40 + 41 + 71	2.88	C	3.03	C	0.482	C	1.26	C	0.550	C	0.867	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		1.44		2.68		0.282		0.830		0.277	EMPC	0.605	
43		0.284		0.214		0.0548	U	0.0580	EMPC	0.0582	U	0.0510	
44	44 + 47 + 65	13.7	C	10.4	C	1.32	C	4.16	C	1.03	C	2.73	C
45	45 + 51	0.538	C	0.730	C	0.0880	C EMPC	0.317	C	0.104	C	0.261	C
46		0.251		0.199		0.0538	U	0.140		0.0630	EMPC	0.0840	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		0.712		1.39		0.180	EMPC	0.556		0.163		0.370	
49	49 + 69	8.72	C	4.45	C	0.733	C	2.28	C	0.515	C	1.24	C
50	50 + 53	1.61	C	0.848	C	0.118	C	0.310	C	0.102	C EMPC	0.291	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		32.9		10.9		1.73		6.22		1.07		3.50	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0533	U	0.0423	U
55		0.121	U	0.197		0.0717	U	0.126	EMPC	0.0756	U	0.0820	EMPC
56		3.93		3.87		0.762		1.96		0.714		1.14	
57		0.115	U	0.0900	U	0.0695	U	0.105	U	0.0734	U	0.0663	U
58		0.118	U	0.0910	U	0.0704	U	0.106	U	0.0742	U	0.0659	U
59	59 + 62 + 75	0.404	C EMPC	0.828	C	0.0880	C EMPC	0.346	C EMPC	0.0510	C	0.209	C U
60		2.07		2.43		0.588		1.38		0.436		0.709	
61	61 + 70 + 74 + 76	37.3	C	17.6	C	3.69	C	10.5	C	2.07	C	4.84	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		0.489	EMPC	0.447		0.0690	EMPC	0.269		0.0712	U	0.105	EMPC
64		5.19		3.89		0.656		2.00		0.478		0.987	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		13.0		11.6		2.48		6.88		1.41		3.11	
67		0.107	EMPC	0.242		0.0622	U	0.139		0.0656	U	0.0570	EMPC
68		0.107	U	0.119	EMPC	0.0674	U	0.101	U	0.0711	U	0.0612	U
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		0.109	U	0.156		0.0672	U	0.101	U	0.0709	U	0.0630	U
73		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		0.596		1.63		0.417		1.04		0.289		0.409	
78		0.123	U	0.0867	U	0.0670	U	0.101	U	0.0707	U	0.0671	U
79		0.539		0.343		0.0568	U	0.172		0.0599	U	0.105	EMPC
80		0.110	U	0.0790	U	0.0611	U	0.0919	U	0.0644	U	0.0599	U
81		0.106	U	0.0910	U	0.0694	U	0.102	U	0.0693	U	0.0662	U
82		5.79		1.61		0.360		1.20		0.270	EMPC	0.572	
83	83 + 99	31.0	C	15.0	C	2.78	C	8.81	C	1.01	C	4.73	C
84		11.8		3.22		0.728		2.41		0.368	EMPC	1.09	
85	85 + 116 + 117	11.7	C	4.69	C	0.993	C	3.07	C	0.413	C	1.39	C
86	86 + 87 + 97 + 108 + 119 + 125	35.7	C	15.0	C	2.77	C	9.00	C	1.17	C	4.48	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	6.54	C	2.28	C	0.462	C	1.47	C	0.218	C	0.753	C
89		0.334		0.114	EMPC	0.0484	U	0.0810	EMPC	0.0479	U	0.0500	
90	90 + 101 + 113	47.4	C	24.0	C	4.27	C	14.4	C	1.59	C	7.17	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		7.97		4.06		0.802		2.62		0.293		1.24	
93	93 + 95 + 98 + 100 + 102	37.5	C	15.6	C	2.68	C	9.42	C	1.11	C EMPC	5.10	C
94		0.148		0.0640		0.0484	U	0.0487	U	0.0479	U	0.0423	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.191	EMPC	0.0630	EMPC	0.0484	U	0.0487	U	0.0479	U	0.0423	U
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		0.227	EMPC	0.129	EMPC	0.0484	U	0.101		0.0479	U	0.0423	U
104		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
105		24.6		12.4		2.87		8.49		1.30		4.02	
106		0.282	U	0.0828	U	0.0606	U	0.0577	U	0.0479	U	0.0514	U
107	107 + 124	2.04	C	1.07	C	0.239	C	0.684	C	0.0890	C EMPC	0.281	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		3.74		2.41		0.580		1.61		0.174		0.594	
110	110 + 115	67.9	C	27.4	C	5.56	C	18.8	C	2.32	C	8.56	C
111		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
112		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		1.60		0.661		0.136	EMPC	0.429		0.0580	EMPC	0.267	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		68.7		38.4		6.90		20.9		2.71		12.7	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		0.0626	U	0.165		0.0484	U	0.0830	EMPC	0.0479	U	0.0550	EMPC
121		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
122		0.619		0.249		0.0760	EMPC	0.177		0.0479	U	0.102	EMPC
123		1.11	EMPC	0.661		0.107	EMPC	0.327	EMPC	0.0640	EMPC	0.201	U
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		0.318	U	0.199	EMPC	0.0662	U	0.135	EMPC	0.0479	U	0.0635	U
127		0.299	U	0.0818	U	0.0599	U	0.0570	U	0.0479	U	0.0524	U

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P06 08031806SD 3/18/2008		Forebay P13 08031713SD 3/17/2008		Forebay P14 08031814SD 3/18/2008		Forebay P65 08022965SD 2/29/2008		Forebay P67 08030367SD 3/3/2008		Forebay P88 08031788SD 3/17/2008	
128	128 + 166	8.59	C	6.15	C	1.61	C	4.96	C	0.621	C	1.75	C
129	129 + 138 + 160 + 163	52.8	C	41.1	C	9.69	C	27.0	C	3.67	C	13.8	C
130		2.98		2.17		0.620	EMPC	1.57		0.189		0.645	
131		0.602		0.281		0.0730		0.197	EMPC	0.0479	U	0.0617	U
132		13.0		7.21		2.00		5.46		0.702		2.33	
133		0.415		0.517		0.125		0.406		0.0479	U	0.153	EMPC
134	134 + 143	1.91	C	1.00	C	0.342	C	0.913	C	0.0870	C	0.330	C
135	135 + 151 + 154	7.66	C	9.28	C	2.92	C	6.77	C	0.811	C	2.94	C
136		3.12		2.32		0.531		1.52		0.198	EMPC	0.741	
137		3.50		1.09		0.257		0.809		0.0970	EMPC	0.499	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	0.911	C	0.461	C	0.125	C EMPC	0.337	C EMPC	0.0520	C	0.147	C U
140	139 + 140		C139		C139		C139		C139		C139		C139
141		4.71		2.96		0.920		2.45		0.386		1.07	
142		0.0814	U	0.0649	U	0.0484	U	0.0626	U	0.0479	U	0.0616	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		1.11		0.931		0.343		0.718		0.0840		0.283	
145		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
146		6.07		7.03		2.00	EMPC	4.70		0.531		2.17	
147	147 + 149	23.8	C	23.7	C	6.20	C	15.0	C	1.83	C	7.88	C
148		0.0626	U	0.0570		0.0484	U	0.0487	U	0.0479	U	0.0423	U
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
153	153 + 168	41.7	C	45.5	C	9.18	C	23.4	C	2.94	C	15.1	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
156	156 + 157	7.65	C	4.73	C	1.13	C	3.08	C	0.399	C	1.35	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		4.38		3.04		0.766		2.22		0.293		0.925	
159		0.158	EMPC	0.260		0.0650	EMPC	0.207	EMPC	0.0479	U	0.107	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.0626	U	0.0486	U	0.0484	U	0.0487	U	0.0479	U	0.0423	U
162		0.187		0.123	EMPC	0.0484	U	0.107	EMPC	0.0479	U	0.0452	U
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		2.51		1.79		0.522		1.30		0.186	EMPC	0.577	
165		0.0637	U	0.0513	U	0.0484	U	0.0495	U	0.0479	U	0.0494	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		2.55		2.46		0.461		1.37		0.173	EMPC	0.710	U
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.0626	U	0.104	U	0.0484	U	0.0931	U	0.0479	U	0.0485	U
170		4.30		8.90		2.71		5.17		0.967		1.91	
171	171 + 173	1.16	C	3.08	C	0.969	C	2.41	C	0.363	C EMPC	0.715	C
172		0.526		1.91		0.561	EMPC	1.01		0.180		0.351	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		2.79		7.10		2.29	EMPC	5.86		0.917	EMPC	1.82	
175		0.132		0.305	U	0.180	U	0.264		0.0479	U	0.100	
176		0.351	EMPC	1.15		0.386	EMPC	0.737		0.125	EMPC	0.228	
177		2.15		6.09	EMPC	1.82		5.35		0.723		1.68	
178		0.713		3.02		0.771	EMPC	1.87		0.284		0.657	
179		1.18		4.50		1.36		2.87		0.406		1.05	
180	180 + 193	8.17	C	21.3	C	5.52	C	12.5	C	2.21	C	5.16	C
181		0.125	EMPC	0.336	U	0.199	U	0.0487	U	0.0479	U	0.0423	U
182		0.0626	U	0.311	U	0.183	U	0.0590	EMPC	0.0479	U	0.0423	U
183	183 + 185	2.54	C	6.82	C	2.03	C	4.74	C	0.701	C	1.89	C
184		0.0626	U	0.246	U	0.145	U	0.0487	U	0.0479	U	0.0423	U
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0626	U	0.264	U	0.156	U	0.0487	U	0.0479	U	0.0423	U
187		5.28		17.6		4.80		13.4		1.77		4.61	
188		0.0626	U	0.229	U	0.0493	UJ	0.0487	U	0.0479	U	0.0423	U
189		0.241	EMPC	0.620	EMPC	0.814	U	0.242		0.0479	U	0.100	
190		0.980		2.52		0.602	EMPC	1.59		0.247	EMPC	0.641	
191		0.170		0.332	EMPC	0.318	EMPC	0.225		0.0479	U	0.0660	
192		0.0626	U	0.291	U	0.172	U	0.0487	U	0.0479	U	0.0423	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		1.85		6.45		1.63		2.64		0.510		1.12	
195		0.672		2.59		1.04		1.21		0.233	EMPC	0.499	
196		0.812		3.02		0.691	EMPC	1.32		0.224		0.560	
197	197 + 200	0.316	C	1.26	C	0.239	C U	0.632	C J	0.109	C EMPC	0.211	C U
198	198 + 199	2.31	C	8.61	C	1.64	C	3.91	C	0.744	C	1.49	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		0.263	EMPC	1.01	EMPC	0.333	EMPC	0.678		0.111	EMPC	0.204	U
202		0.653		2.14		0.582		1.42		0.199		0.437	
203		1.76		6.12		1.05		2.77		0.534		1.25	
204		0.0626	U	0.181	U	0.239	U	0.0487	U	0.0479	U	0.0423	U
205		0.127	EMPC	0.477	EMPC	0.305	U	0.181		0.0479	U	0.0810	
206		1.87		5.28		1.14		2.94		0.449		0.968	
207		0.267		0.751	U	0.896	U	0.508		0.145	U	0.158	
208		0.600		1.86	EMPC	0.451	EMPC	1.08		0.143	U	0.386	
209		1.83		5.33		1.34		3.51		0.366	U	1.14	
Total PCBs as Congeners in ug/kg, dry weight													
Total PCBs as Congeners (full EMPC/full SDL)		0.784	J	0.696	J	0.155	J	0.402	J	0.0670	J	0.206	J
Total PCBs as Congeners (KM-based)		0.778	J	0.684	J	0.143	J	0.399	J	0.0611	J	0.204	J
Total PCBs as Congeners (KM-based, capped)		0.778	J	0.684	J	0.143	J	0.399	J	0.0611	J	0.204	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P89 08031789SD 3/17/2008		Reference P22 08030522SD 3/5/2008		Reference P24 08030524SD 3/5/2008		Reference P26 08030426SD 3/4/2008		Reference P27 08030427SD 3/4/2008		Reference P28 08030428SD 3/4/2008	
Individual Congeners in pg/g (ng/kg), dry weight													
1		0.100	EMPC	0.144		0.395		0.129		0.233		0.145	
2		0.636		4.82		3.23		0.937		3.04		2.16	
3		0.238	EMPC	0.362		0.244		0.162		0.319		0.242	
4		0.269	EMPC	0.293		0.352		0.301		1.19		0.278	EMPC
5		0.0834	U	0.0769	U	0.154	U	0.0682	U	0.107	U	0.135	U
6		0.0950	EMPC	0.120	EMPC	0.204	EMPC	0.129		0.346		0.180	EMPC
7		0.0780	U	0.0880	U	0.139	U	0.0618	U	0.0966	U	0.123	U
8		0.404		0.672		0.693		0.464		0.876		0.716	
9		0.0766	U	0.0740	EMPC	0.137	U	0.0606	U	0.0948	U	0.120	U
10		0.0750	U	0.0692	U	0.138	U	0.0614	U	0.0959	U	0.122	U
11		19.9		57.0		68.0		57.6		205		66.4	
12	12 + 13	0.0825	C U	0.0761	C U	0.150	C U	0.530	C	0.104	C U	0.132	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.0796	U	0.0735	U	0.143	U	0.0633	U	0.0989	U	0.125	U
15		0.660		1.52		1.59		1.12		2.59		1.83	
16		0.332		0.553		0.616		0.543		2.43		0.507	
17		0.287		0.568		0.604		0.455		1.60		0.531	EMPC
18	18 + 30	0.619	C	1.31	C	1.39	C	1.10	C	4.70	C	1.17	C
19		0.177		0.126		0.159	EMPC	0.129	EMPC	0.260	EMPC	0.107	EMPC
20	20 + 28	1.31	C	4.43	C	4.15	C	2.70	C	5.93	C	4.86	C
21	21 + 33	0.453	C U	1.25	C	1.24	C	0.855	C	1.86	C	1.37	C
22		0.482		1.37		1.38		0.913		2.94		1.48	
23		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
24		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0550		0.0443	U
25		0.0870	EMPC	0.198		0.204		0.135		0.298		0.214	
26	26 + 29	0.162	C	0.461	C	0.437	C	0.341	C	0.740	C	0.471	C
27		0.100	EMPC	0.111		0.113	EMPC	0.126		0.580		0.0940	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		0.841		2.82		2.65		1.77		3.47		3.01	
32		0.128		0.244		0.222		0.190		0.285		0.264	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
35		0.0600	EMPC	0.230		0.279		0.238		0.438		0.326	
36		0.0454	U	0.0850		0.0630	EMPC	0.0690		0.120		0.133	EMPC
37		0.634		1.67		1.57		1.10		2.22		1.93	
38		0.0454	U	0.0650	EMPC	0.0710	EMPC	0.0500	EMPC	0.120		0.0590	
39		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0790		0.0610	
40	40 + 41 + 71	0.588	C U	1.65	C	1.58	C	1.14	C	2.70	C	1.55	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		0.519		1.06		1.15		0.880		3.84		0.939	
43		0.0454	U	0.153		0.118	EMPC	0.0760	EMPC	0.204		0.148	EMPC
44	44 + 47 + 65	2.04	C U	4.57	C	5.29	C	3.94	C	18.0	C	4.46	C
45	45 + 51	0.185	C	0.470	C	0.415	C	0.355	C	0.771	C	0.475	C
46		0.0920	EMPC	0.150		0.144	EMPC	0.0950		0.166		0.183	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		0.231		0.650		0.687		0.484		1.48		0.643	
49	49 + 69	0.825	C	2.71	C	2.52	C	1.72	C	3.41	C	2.76	C
50	50 + 53	0.244	C U	0.410	C	0.443	C	0.369	C	1.36	C	0.391	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		2.37		6.24		6.44		4.64		12.6		6.31	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
55		0.0620	EMPC	0.300		0.0990		0.115		0.207		0.225	
56		0.963		2.37		2.38		1.73		3.74		2.46	
57		0.0492	U	0.0554	U	0.0736	U	0.0362	U	0.0722	U	0.0774	U
58		0.0489	U	0.0551	U	0.0737	U	0.0362	U	0.0723	U	0.0775	U
59	59 + 62 + 75	0.148	C U	0.397	C U	0.394	C U	0.302	C U	1.01	C	0.390	C U
60		0.626	EMPC	1.67		1.58		1.03		1.95		1.70	
61	61 + 70 + 74 + 76	3.55	C	11.5	C	10.8	C	7.36	C	14.2	C	10.7	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		0.0920		0.304		0.255		0.171		0.375		0.283	
64		0.745		2.21		2.12		1.45		2.85		2.33	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		2.51		7.28		6.99		4.81		10.0		6.87	
67		0.0580		0.137		0.125		0.0970		0.196		0.133	
68		0.0454	U	0.0800		0.0760	EMPC	0.0450	EMPC	0.0820		0.0752	U
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		0.0467	U	0.0910	EMPC	0.0735	U	0.0450		0.0990	EMPC	0.0850	EMPC
73		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		0.341		0.989		0.983		0.699		1.39		1.11	
78		0.0498	U	0.0561	U	0.0768	U	0.0362	U	0.0754	U	0.0808	U
79		0.0810	EMPC	0.191		0.212		0.183		0.612		0.206	
80		0.0454	U	0.0500	U	0.0689	U	0.0362	U	0.0676	U	0.0725	U
81		0.0486	U	0.0630	EMPC	0.0786	U	0.0490	EMPC	0.100	EMPC	0.0832	U
82		0.386		1.14		1.01		1.15		1.53		1.23	
83	83 + 99	3.33	C	9.91	C	9.78	C	8.11	C	19.2	C	9.86	C
84		0.811		2.55		2.43		2.12		3.94		2.48	
85	85 + 116 + 117	1.12	C	3.42	C	3.01	C	2.72	C	5.27	C EMPC	3.55	C
86	86 + 87 + 97 + 108 + 119 + 125	3.57	C U	9.22	C	9.26	C	8.05	C	21.8	C	9.40	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	0.518	C	1.59	C	1.53	C	1.35	C	2.51	C	1.48	C
89		0.0454	U	0.102	EMPC	0.0800	EMPC	0.0820		0.0990	EMPC	0.0630	EMPC
90	90 + 101 + 113	5.08	C	15.2	C	16.2	C	12.0	C	31.3	C	14.8	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		0.891		2.92		2.78		2.18		5.23		2.94	
93	93 + 95 + 98 + 100 + 102	3.65	C	9.50	C	9.52	C	8.34	C	27.1	C	9.08	C
94		0.0454	U	0.0453	U	0.0490	EMPC	0.0490		0.0940		0.0614	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.0454	U	0.0480	EMPC	0.0540	EMPC	0.0460	EMPC	0.0690	EMPC	0.0530	EMPC
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		0.0454	U	0.0940		0.101		0.0780	EMPC	0.128	EMPC	0.0920	
104		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
105		3.06		8.92		8.01		7.17		13.2		9.06	
106		0.0571	U	0.0852	U	0.0713	U	0.0725	U	0.110	U	0.106	U
107	107 + 124	0.204	C	0.602	C	0.734	C	0.603	C	1.07	C	0.716	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		0.459		1.41		1.35		1.12		2.09		1.48	
110	110 + 115	6.03	C	18.7	C	17.1	C	15.1	C	33.9	C	19.4	C
111		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
112		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		0.174		0.410		0.485		0.378		0.798		0.479	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		10.0		22.2		22.4		20.9		64.2		22.1	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		0.0454	U	0.131		0.108	EMPC	0.0830	EMPC	0.228		0.0770	EMPC
121		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
122		0.0980	EMPC	0.176		0.196	EMPC	0.191		0.373		0.220	
123		0.158	U	0.380	U	0.429	U	0.442	U	1.22		0.408	U
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		0.0693	U	0.175	EMPC	0.147	EMPC	0.117		0.234		0.185	EMPC
127		0.0582	U	0.0869	U	0.0745	U	0.0758	U	0.115	U	0.111	U

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P89 08031789SD 3/17/2008		Reference P22 08030522SD 3/5/2008		Reference P24 08030524SD 3/5/2008		Reference P26 08030426SD 3/4/2008		Reference P27 08030427SD 3/4/2008		Reference P28 08030428SD 3/4/2008	
128	128 + 166	1.22	C	4.22	C	4.07	C	3.46	C	5.93	C	4.61	C
129	129 + 138 + 160 + 163	11.0	C	29.3	C	31.6	C	25.6	C	65.7	C	32.5	C
130		0.460		1.70		1.71		1.35		2.39		2.05	
131		0.100		0.163	EMPC	0.157	EMPC	0.184		0.303		0.223	
132		1.79		5.63		5.80		5.91		8.28		6.59	
133		0.116	EMPC	0.463		0.365		0.283		0.493		0.438	
134	134 + 143	0.216	C	0.807	C	0.758	C	0.707	C	1.18	C	0.948	C
135	135 + 151 + 154	2.30	C	6.76	C	7.47	C	5.60	C	11.2	C	7.66	C
136		0.581		1.62		1.96		1.47		2.59		1.83	
137		0.359		0.929		0.852		0.788		1.41		0.880	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	0.114	C U	0.381	C	0.324	C	0.327	C	0.545	C	0.443	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		0.912		2.24		2.71		2.28		3.28		2.68	
142		0.0564	U	0.0870	U	0.0614	U	0.0660	U	0.0819	U	0.0521	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		0.244		0.646		0.726		0.613		1.03		0.650	
145		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
146		1.61		3.92	J	3.89	J	3.31	J	8.46	J	4.23	J
147	147 + 149	5.81	C	16.6	C	18.3	C	15.4	C	34.9	C	18.5	C
148		0.0454	U	0.0590	EMPC	0.0650	EMPC	0.0362	U	0.0720		0.0510	EMPC
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0500	EMPC	0.0480	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
153	153 + 168	12.9	C	26.9	C	31.8	C	27.1	C	100	C	27.9	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
156	156 + 157	0.935	C U	2.54	C	2.58	C	2.42	C	5.17	C	2.82	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		0.777		2.11		2.23		1.91		3.67		2.35	
159		0.124		0.154		0.339		0.248		0.286		0.288	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.0454	U	0.0598	U	0.0467	U	0.0474	U	0.0588	U	0.0443	U
162		0.0454	U	0.0780		0.0840	EMPC	0.0890		0.125	EMPC	0.139	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		0.399		1.30		1.45		1.26		2.06		1.67	
165		0.0454	U	0.0699	U	0.0505	U	0.0543	U	0.0674	U	0.0443	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		0.640	U	1.18		1.30		1.25		3.84		1.18	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.0454	U	0.0685	U	0.102	U	0.0571	U	0.0971	U	0.110	U
170		2.18		3.76		4.89		3.87		5.51		5.64	
171	171 + 173	0.765	C	1.55	C	1.90	C	1.47	C EMPC	2.39	C	2.03	C
172		0.379		0.785		1.01		0.752		1.04		1.12	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		2.12		3.70		5.63		4.18		5.36		5.39	
175		0.105	EMPC	0.205	EMPC	0.270		0.183	EMPC	0.333		0.224	
176		0.256	EMPC	0.581		0.780		0.564		0.966		0.727	
177		1.61		3.89		4.43		3.24		5.22		4.88	
178		0.542		1.63		1.92		1.28		2.16		2.04	
179		0.987		2.54		3.41		2.44		3.65		3.22	
180	180 + 193	6.03	C	10.1	C	14.1	C	11.0	C	22.1	C	14.0	C
181		0.0454	U	0.0470	EMPC	0.0540		0.0730	EMPC	0.112		0.114	EMPC
182		0.0454	U	0.0650	U	0.0870	U	0.0580	U	0.0960	U	0.0540	U
183	183 + 185	1.81	C	3.57	C	4.84	C	3.81	C	7.36	C	4.56	C
184		0.0454	U	0.0453	U	0.0490	EMPC	0.0362	U	0.0550		0.0443	U
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
187		4.24		10.5		13.0		9.68		19.8		12.8	
188		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0540	U	0.0443	U
189		0.0980		0.225		0.260		0.264	EMPC	0.351		0.416	
190		0.751		1.31		1.60		1.27		3.12		1.74	
191		0.106		0.193		0.211		0.185		0.312		0.224	
192		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		1.94		2.87		3.34		2.42		3.24		3.60	
195		0.853		1.25		1.41		0.988		1.50		1.57	
196		0.909		1.38		1.77		1.34		1.90		1.85	
197	197 + 200	0.301	C U	0.375	C J	0.415	C J	0.335	C J	0.447	C J	0.491	C J
198	198 + 199	1.89	C	4.52	C	5.38	C	4.09	C	5.79	C	6.38	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		0.223	U	0.636		0.686		0.527		0.765		0.662	
202		0.362		1.53		1.71		1.13		1.92		1.86	
203		1.55		3.29		3.84		3.00		6.21		4.26	
204		0.0454	U	0.0453	U	0.0467	U	0.0362	U	0.0450	U	0.0443	U
205		0.116		0.231		0.245		0.149		0.192		0.222	
206		0.994		2.90		3.38		2.35		4.29		6.18	
207		0.107	U	0.514		0.432		0.353		0.547		0.652	
208		0.300		1.17		1.31		0.967		1.61		2.41	
209		0.669	U	3.71		3.61		2.46		4.55		6.38	
Total PCBs as Congeners in ug/kg, dry weight													
Total PCBs as Congeners (full EMPC/full SDL)		0.161	J	0.416	J	0.450	J	0.364	J	0.937	J	0.461	J
Total PCBs as Congeners (KM-based)		0.151	J	0.413	J	0.448	J	0.361	J	0.932	J	0.458	J
Total PCBs as Congeners (KM-based, capped)		0.151	J	0.413	J	0.448	J	0.361	J	0.932	J	0.458	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference P29 08022229SD 2/22/2008		Reference P34 08022534SD 2/25/2008		Reference P35 08022535SD 2/25/2008		Reference P36 08022536SD 2/25/2008		Reference P37 08022637SD 2/26/2008		Reference P38 08022738SD 2/27/2008	
Individual Congeners in pg/g (ng/kg), dry weight													
1		0.198		0.375		0.156		0.176	EMPC	0.186	U	0.178	EMPC
2		7.02		7.86		2.01		2.11		1.83		1.69	
3		0.580		0.880		0.253		0.222		0.469	EMPC	0.241	
4		0.928		1.22		0.400	EMPC	0.488		0.414		1.02	
5		0.130	U	0.0850	EMPC	0.0916	U	0.105	U	0.115	U	0.0987	U
6		1.10		0.878		0.218		0.243		0.285	EMPC	0.332	
7		0.258	U	0.215	U	0.0980	U	0.104	U	0.138		0.103	U
8		4.71		3.33		0.880		0.988		1.22		0.904	
9		0.364		0.219		0.0814	U	0.0938	U	0.102	U	0.0885	U
10		0.117	U	0.0761	U	0.0824	U	0.0973	U	0.106	U	0.0919	U
11		70.5		83.0		65.0		69.4		68.3		135	
12	12 + 13	1.43	C	1.40	C	0.0893	C UJ	0.102	C U	0.290	C	0.0966	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.121	U	0.110	EMPC	0.0850	U	0.0980	U	0.104	U	0.0925	U
15		5.29		5.42		1.99		2.26		2.54		1.98	
16		2.08		2.19		0.621		0.884		0.690		1.64	
17		2.57		2.64		0.797		0.958		0.814		1.29	
18	18 + 30	5.01	C	5.11	C	1.57	C	2.17	C	1.76	C	3.60	C
19		0.352		0.464		0.141		0.197	EMPC	0.196	U	0.189	
20	20 + 28	16.1	C	15.5	C	5.51	C	6.11	C	6.40	C	5.01	C
21	21 + 33	6.77	C	5.58	C J	1.47	C	1.89	C	2.07	C	1.56	C
22		5.44		4.93		1.65		2.00		1.93		2.16	
23		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.123	U	0.0440	U
24		0.0870	EMPC	0.0810		0.0466	U	0.0490	U	0.118	U	0.0440	U
25		0.930		0.883		0.259		0.290		0.313	EMPC	0.269	
26	26 + 29	2.02	C	1.83	C	0.546	C	0.659	C	0.744	C	0.657	C
27		0.364		0.466		0.129	J	0.195		0.159	EMPC	0.397	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		11.5		10.9	J	3.32	J	3.87		4.24		3.09	
32		1.07		0.859		0.258		0.316		0.321		0.238	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.0580	EMPC	0.0620	EMPC	0.0466	U	0.0490	U	0.116	U	0.0440	U
35		0.387		0.543		0.319		0.261		0.387	EMPC	0.349	
36		0.0970	EMPC	0.136		0.101	EMPC	0.103		0.109	U	0.112	EMPC
37		4.09		4.73		2.10		2.15		2.41		1.97	
38		0.0530	EMPC	0.120		0.0530		0.0490	EMPC	0.112	U	0.0440	
39		0.0680	EMPC	0.136		0.0466	U	0.0490	U	0.111	U	0.0580	EMPC
40	40 + 41 + 71	3.73	C	6.64	C	2.03	C	1.76	C	1.96	C	1.98	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		2.22		4.01		1.14		1.30		1.28		2.02	
43		0.306		0.543		0.132	EMPC	0.157	EMPC	0.131	EMPC	0.183	EMPC
44	44 + 47 + 65	8.76	C	21.4	C	5.03	C	5.26	C	4.90	C	8.45	C
45	45 + 51	1.13	C	1.80	C	0.527	C	0.523	C	0.588	C	0.470	C
46		0.362		0.646		0.167		0.140		0.171		0.160	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		1.76		3.03		0.702		0.834		0.928		1.03	
49	49 + 69	5.26	C	11.9	C	3.35	C	2.88	C	3.09	C	2.85	C
50	50 + 53	0.815	C	1.83	C	0.485	C	0.471	C	0.506	C EMPC	0.726	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		10.4		37.5		7.05		6.82		6.40		8.74	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.0532	U	0.0440	U
55		0.293		0.428		0.151		0.233		0.0648	U	0.194	
56		3.18		6.34		2.04		2.41		2.31		2.35	
57		0.0577	U	0.114	U	0.0693	U	0.0858	U	0.0610	U	0.0731	U
58		0.0578	U	0.114	U	0.0694	U	0.0896	U	0.0609	U	0.0763	U
59	59 + 62 + 75	0.822	C	1.23	C	0.396	C U	0.522	C	0.471	C EMPC	0.591	C
60		1.95		3.47		1.38		1.63		1.53		1.53	
61	61 + 70 + 74 + 76	15.0	C	40.3	C	10.5	C	11.4	C	11.0	C	11.1	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		0.393		0.777		0.261		0.269		0.257		0.248	
64		4.16		8.72		2.25		2.43		2.59		2.26	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		9.65		18.0		6.49		7.22		6.39		7.06	
67		0.263		0.368		0.159		0.174		0.160		0.155	
68		0.110	EMPC	0.122		0.0673	U	0.0809	U	0.0690		0.0689	U
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		0.128	EMPC	0.206		0.0800		0.0802	U	0.0830		0.0890	
73		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.0498	U	0.0440	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		1.40		2.01		1.04		0.965		1.02		1.13	
78		0.0602	U	0.119	U	0.0723	U	0.0871	U	0.0613	U	0.0743	U
79		0.255		0.605		0.154		0.162	EMPC	0.383	EMPC	0.295	
80		0.0541	U	0.107	U	0.0649	U	0.0804	U	0.0557	U	0.0685	U
81		0.0730	EMPC	0.143		0.0750	U	0.0896	U	0.0639	U	0.0767	U
82		1.43		5.71		0.953		1.01		0.964		1.14	
83	83 + 99	11.9	C	33.0	C	8.50	C	8.11	C	7.44	C	13.0	C
84		2.89		13.2		2.43		2.07		1.87		2.51	
85	85 + 116 + 117	3.77	C	10.6	C	2.72	C	2.58	C	2.60	C	3.83	C
86	86 + 87 + 97 + 108 + 119 + 125	11.2	C	39.1	C	8.07	C	7.70	C	6.85	C	13.3	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	1.97	C	6.79	C	1.56	C	1.36	C	1.30	C	1.80	C
89		0.100	EMPC	0.462		0.0790	EMPC	0.0690		0.0860	EMPC	0.0840	EMPC
90	90 + 101 + 113	18.4	C	58.9	C	13.1	C	13.1	C	11.8	C	20.7	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		3.28		10.3		2.41		2.46		2.51		3.87	
93	93 + 95 + 98 + 100 + 102	10.9	C	43.8	C	8.42	C	8.08	C	7.22	C	13.4	C
94		0.0650		0.209	EMPC	0.0520	EMPC	0.0670	EMPC	0.0832	U	0.0440	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.0740		0.235		0.0550	EMPC	0.0490	U	0.0710	U	0.0440	EMPC
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		0.138		0.339		0.0860		0.106	EMPC	0.101		0.104	EMPC
104		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.0710	U	0.0440	U
105		10.9		27.5		8.18		8.03		6.53		9.85	
106		0.136	U	0.156	U	0.0664	U	0.111	U	0.0988	U	0.111	U
107	107 + 124	0.794	C	2.36	C	0.623	C	0.477	C	0.594	C	0.792	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		1.79		4.61		1.38		1.27		1.17		1.52	
110	110 + 115	22.1	C	68.2	C	16.1	C	15.6	C	14.3	C	25.0	C
111		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.0565	U	0.0440	U
112		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.0598	U	0.0440	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		0.602		1.63		0.382		0.372		0.352	EMPC	0.422	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		28.3		70.5		19.9		20.7		15.7		35.6	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		0.118	EMPC	0.177		0.0990	EMPC	0.0740		0.0870		0.144	
121		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.0580	U	0.0440	U
122		0.270		0.718		0.189	EMPC	0.160	EMPC	0.113	EMPC	0.168	EMPC
123		0.446	U	0.980		0.309	U	0.401	U	0.374		0.656	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		0.205		0.337		0.126		0.139	U	0.175		0.184	
127		0.142	U	0.170		0.0694	U	0.115	U	0.0954	U	0.114	U

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference P29 08022229SD 2/22/2008		Reference P34 08022534SD 2/25/2008		Reference P35 08022535SD 2/25/2008		Reference P36 08022536SD 2/25/2008		Reference P37 08022637SD 2/26/2008		Reference P38 08022738SD 2/27/2008	
128	128 + 166	5.17	C	12.7	C	4.08	C	3.88	C	3.49	C	4.37	C
129	129 + 138 + 160 + 163	36.7	C	81.3	C	25.9	C	26.9	C	23.6	C	38.8	C
130		2.12		4.97		1.63		1.66		1.42		1.94	
131		0.244		0.868		0.188		0.185		0.159	EMPC	0.247	
132		7.24		22.6		5.81		5.23		5.15		6.08	
133		0.508		0.956		0.459		0.340		0.388		0.411	
134	134 + 143	1.10	C	3.31	C	0.809	C	0.712	C	0.718	C EMPC	0.886	C
135	135 + 151 + 154	8.30	C	17.9	C	6.04	C	6.18	C	6.69	C	7.89	C
136		2.11		6.15		1.73		1.49		1.52		1.84	
137		0.955		3.11		0.768		0.710		0.683		0.838	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	0.454	C	1.21	C	0.381	C	0.320	C	0.304	C	0.413	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		2.75		8.66		2.14		1.94		1.72		2.04	
142		0.0742	U	0.123	U	0.0648	U	0.0515	U	0.0682	U	0.0440	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		0.821		2.37		0.589		0.552		0.577		0.771	
145		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.0646	U	0.0440	U
146		4.60	J	9.76	J	3.44		3.70	J	3.90		6.01	J
147	147 + 149	21.3	C	48.8	C	15.5	C	14.3	C	14.1	C	22.0	C
148		0.0860	EMPC	0.100		0.0466	U	0.0710	EMPC	0.0815	U	0.0760	EMPC
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.0425	U	0.0970		0.0490	EMPC	0.0490	U	0.0619	U	0.0470	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.0571	U	0.0440	U
153	153 + 168	32.8	C	63.5	C	22.9	C	25.6	C	20.1	C	47.0	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.0507	U	0.0440	U
156	156 + 157	3.19	C	8.50	C	2.42	C	2.40	C	2.25	C	3.12	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		2.47		6.86		1.99		1.91		1.69		2.56	
159		0.303		0.614		0.184	EMPC	0.211		0.250	EMPC	0.203	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.0533	U	0.0885	U	0.0466	U	0.0490	U	0.0449	U	0.0440	U
162		0.121	EMPC	0.214		0.0720		0.0950	EMPC	0.102		0.116	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		1.63		4.32		1.21		1.22		1.25		1.32	
165		0.0610	U	0.101	U	0.0533	U	0.0490	U	0.0519	U	0.0440	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		1.46		3.20		1.10	U	1.01	U	0.918		1.86	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.0811	U	0.179	U	0.0711	U	0.0891	U	0.0860	EMPC	0.0951	U
170		5.72		10.9		4.58		3.68		3.58		3.83	
171	171 + 173	2.16	C	4.41	C	1.84	C	1.59	C	1.60	C	1.92	C
172		1.13		1.86		0.864		0.733		0.837		0.730	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		5.45		10.6		4.36		3.72		3.89		3.62	
175		0.284		0.519		0.233		0.204	EMPC	0.170	EMPC	0.212	EMPC
176		0.842		1.54		0.646		0.605		0.650		0.718	
177		5.30		8.81		3.94		3.66		3.94		4.73	
178		2.10		3.48		1.66		1.33		1.42		1.93	
179		3.49		5.98		2.82		2.46		2.34		3.12	
180	180 + 193	14.0	C	24.5	C	11.0	C	9.20	C	9.03	C	11.3	C
181		0.0820		0.191	EMPC	0.0570	EMPC	0.0610	EMPC	0.0674	U	0.0910	EMPC
182		0.0580	U	0.143	U	0.0540	U	0.0530	U	0.0634	U	0.0710	U
183	183 + 185	4.98	C	9.01	C	3.87	C	3.40	C	3.36	C	4.70	C
184		0.0840	EMPC	0.0650		0.0466	U	0.0490	U	0.0471	U	0.0510	EMPC
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.0509	U	0.0440	U
187		13.6		22.0		9.79		9.27		9.00		13.2	
188		0.0425	U	0.0660	U	0.0466	U	0.0490	U	0.0449	U	0.0440	U
189		0.357	EMPC	0.573		0.248	EMPC	0.237		0.197		0.188	
190		1.90		3.01		1.48		1.21		1.23		1.69	
191		0.224		0.457		0.223	EMPC	0.155	EMPC	0.158		0.180	
192		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.0578	U	0.0440	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		3.20		5.11		3.05		2.32		2.44		2.33	
195		1.45		2.30		1.33		1.17		1.20		1.24	
196		1.74		2.87		1.47		1.19		1.23		1.28	
197	197 + 200	0.447	C J	0.572	C J	0.474	C EMPC	0.350	C J	0.442	C	0.426	C J
198	198 + 199	5.26	C	8.78	C	5.19	C	3.27	C	3.66	C	3.25	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		0.642		1.20		0.639		0.428		0.559		0.568	
202		1.60		2.59		1.60		1.07		1.10		1.39	
203		3.96		6.34		3.71		2.61		2.50		3.19	
204		0.0425	U	0.0455	U	0.0466	U	0.0490	U	0.0629	U	0.0440	U
205		0.242		0.347		0.197		0.172	EMPC	0.156		0.194	EMPC
206		4.59		7.21		4.28		2.85		3.21		2.71	
207		0.601		0.938		0.517		0.445		0.339		0.416	
208		1.85		2.50		1.59		1.13		1.16		1.04	
209		6.12		7.86		4.05		3.47		3.42		3.33	
Total PCBs as Congeners in ug/kg, dry weight													
Total PCBs as Congeners (full EMPC/full SDL)		0.587	J	1.20	J	0.408	J	0.405	J	0.383	J	0.592	J
Total PCBs as Congeners (KM-based)		0.585	J	1.20	J	0.405	J	0.402	J	0.378	J	0.591	J
Total PCBs as Congeners (KM-based, capped)		0.585	J	1.20	J	0.405	J	0.402	J	0.378	J	0.591	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference P39 08022739SD 2/27/2008		Reference P40 08022740SD 2/27/2008		Reference P41 08022741SD 2/27/2008		Reference P42 08022742SD 2/27/2008		Reference P85 08030685SD 3/6/2008		Reference P86 08030686SD 3/6/2008		Reference P87 08030687SD 3/6/2008		Downstream P46 08031046SD 3/10/2008	
Individual Congeners in pg/g (ng/kg), dry weight																	
1		0.144	U	0.233	U	0.276	U	0.165	U	0.270	U	0.192	U	0.189	U	0.155	EMPC
2		1.13		1.63		1.73		0.614		3.93		2.99		2.29		0.263	J
3		0.261	EMPC	0.372	EMPC	0.238		0.193	EMPC	0.361		0.252		0.246		0.186	J
4		0.274	EMPC	0.629		0.506	EMPC	0.302	EMPC	0.655		0.336		0.318		0.531	UJ
5		0.120	U	0.107	U	0.125	U	0.113	U	0.107	UJ	0.0815	U	0.0791	U	0.268	UJ
6		0.154		0.231	EMPC	0.224		0.123	EMPC	0.306	J	0.195		0.164	EMPC	0.247	UJ
7		0.112	U	0.124	EMPC	0.114	U	0.103	U	0.0973	UJ	0.123		0.134	EMPC	0.255	UJ
8		0.543		0.771		1.05		0.436		1.14	J	0.747		0.686		0.321	J
9		0.107	U	0.0948	U	0.110	U	0.0986	U	0.112	EMPC	0.0714	U	0.0694	U	0.246	UJ
10		0.109	U	0.0961	U	0.113	U	0.102	U	0.0962	UJ	0.0736	U	0.0715	U	0.254	UJ
11		51.1		100		56.1		32.1		131	J	46.6		49.1		18.1	J
12	12 + 13	0.127	C U	0.112	C U	0.118	C U	0.106	C U	0.100	C UJ	0.449	C	0.535	C EMPC	0.259	C UJ
13	12 + 13		C12		C12		C12		C12		C12		C12		C12		C12
14		0.116	U	0.103	U	0.114	U	0.102	U	0.0965	UJ	0.0738	U	0.0716	U	0.246	UJ
15		1.55		1.91		1.74		0.924		1.86		1.41		1.56		0.286	UJ
16		0.284	U	0.815		0.498		0.356	U	1.04		0.458	EMPC	0.711		0.201	EMPC
17		0.343		0.750		0.466	EMPC	0.351		0.975		0.505	EMPC	0.648		0.202	J
18	18 + 30	0.727	C U	1.97	C	1.16	C	0.655	C U	2.52	C	1.11	C	1.49	C	0.415	C EMPC
19		0.0720		0.180		0.139		0.105	EMPC	0.225		0.150		0.184	EMPC	0.107	UJ
20	20 + 28	2.90	C	4.11	C	3.23	C	1.97	C	5.85	C	3.52	C	4.13	C	1.01	C EMPC
21	21 + 33	0.811	C	1.18	C	0.955	C	0.644	C	2.05	C	1.07	C	1.28	C	0.360	C J
22		0.889		1.64		1.16		0.670		2.15		1.04		1.32		0.366	EMPC
23		0.0474	U	0.0475	U	0.0535	U	0.0487	U	0.0619	U	0.0471	U	0.0534	U	0.0516	UJ
24		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0480	EMPC	0.0471	U	0.0457	U	0.0563	UJ
25		0.171	EMPC	0.247		0.160		0.111		0.320		0.181	EMPC	0.215	EMPC	0.0790	J
26	26 + 29	0.319	C EMPC	0.466	C	0.385	C	0.244	C EMPC	0.718	C	0.417	C	0.498	C	0.152	C J
27		0.0670		0.203	EMPC	0.124	EMPC	0.0890		0.247		0.107		0.141		0.0527	UJ
28	20 + 28		C20		C20		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18		C18		C18
31		1.81		2.42		1.90		1.17		3.85		2.23		2.76		0.679	J
32		0.131		0.207		0.199		0.142	EMPC	0.364		0.214		0.346		0.0730	J
33	21 + 33		C21		C21		C21		C21		C21		C21		C21		C21
34		0.0474	U	0.0620	EMPC	0.0513	U	0.0487	U	0.0594	U	0.0471	U	0.0512	U	0.0495	UJ
35		0.283		0.352	EMPC	0.216		0.0487	U	0.453	EMPC	0.253	EMPC	0.285		0.0890	UJ
36		0.125	EMPC	0.0950	EMPC	0.0730	EMPC	0.0487	U	0.151		0.0620	EMPC	0.0850	EMPC	0.0493	UJ
37		1.35		1.54		1.45		0.938		2.21		1.35		1.64		0.504	J
38		0.0474	U	0.0475	U	0.0502	U	0.0487	U	0.135		0.0680		0.0740		0.0493	UJ
39		0.0474	U	0.0475	U	0.0493	U	0.0487	U	0.0571	U	0.0471	U	0.0492	U	0.0493	UJ
40	40 + 41 + 71	0.791	C	1.32	C	0.867	C	0.656	C	2.03	C	1.08	C	1.53	C	0.285	C EMPC
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40		C40		C40
42		0.523		1.44		0.737	EMPC	0.416	EMPC	1.83		0.822		1.11		0.200	EMPC
43		0.0660	EMPC	0.0860		0.0630	EMPC	0.0487	U	0.136	EMPC	0.0720	EMPC	0.120		0.0683	UJ
44	44 + 47 + 65	2.44	C	5.89	C	3.11	C	2.07	C	8.10	C	3.54	C	4.43	C	1.14	C J
45	45 + 51	0.205	C	0.360	C	0.241	C	0.200	C	0.575	C EMPC	0.344	C EMPC	0.443	C	0.130	C J
46		0.0720		0.100	EMPC	0.0950		0.0680	EMPC	0.223		0.117	EMPC	0.189		0.0660	UJ
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44		C44		C44
48		0.337		0.728		0.442		0.280		0.972		0.516		0.634		0.132	EMPC
49	49 + 69	1.41	C	2.20	C	1.49	C	0.987	C	3.56	C	2.01	C	2.62	C	0.617	C J
50	50 + 53	0.227	C	0.475	C	0.283	C	0.220	C EMPC	0.687	C	0.316	C	0.353	C	0.143	C EMPC
51	45 + 51		C45		C45		C45		C45		C45		C45		C45		C45
52		3.71		6.06		3.99		2.73		9.07		4.60		5.84		1.48	J
53	50 + 53		C50		C50		C50		C50		C50		C50		C50		C50
54		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0437	U	0.0471	U	0.0457	U	0.0508	UJ
55		0.0606	U	0.0558	U	0.0992	U	0.0774	U	0.0805	U	0.0714	U	0.107	U	0.0774	UJ
56		1.51		2.30		1.47		1.10		3.14		1.74	EMPC	2.20		0.479	J
57		0.0577	U	0.0532	U	0.0928	U	0.0724	U	0.0753	U	0.0667	U	0.100	U	0.0723	UJ
58		0.0590	U	0.0544	U	0.0968	U	0.0755	U	0.0785	U	0.0696	U	0.105	U	0.0733	UJ
59	59 + 62 + 75	0.155	C EMPC	0.426	C EMPC	0.211	C	0.178	C	0.616	C	0.289	C	0.393	C	0.118	C EMPC
60		1.10		1.51		1.08		0.734		2.08		1.15		1.41	EMPC	0.359	J
61	61 + 70 + 74 + 76	7.25	C	9.82	C	6.76	C	4.36	C	14.0	C	8.19	C	10.2	C	2.42	C J
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59		C59		C59
63		0.194		0.266	EMPC	0.164	EMPC	0.103	EMPC	0.335		0.181	EMPC	0.242		0.0681	UJ
64		1.26		1.86		1.30		0.805		3.06		1.58		2.14		0.504	J
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44		C44		C44
66		4.56		6.89		4.44		2.96		8.39		4.77		5.64		1.40	J
67		0.0930		0.158		0.0849	U	0.0710	EMPC	0.221	EMPC	0.105	EMPC	0.140	EMPC	0.0633	UJ
68		0.0536	U	0.0800	EMPC	0.0921	U	0.0718	U	0.0950	EMPC	0.0662	U	0.0996	U	0.0695	UJ
69	49 + 69		C49		C49		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40		C40		C40
72		0.0547	U	0.0790		0.0906	U	0.0706	U	0.124		0.0652	U	0.105		0.0692	UJ
73		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0437	U	0.0471	U	0.0457	U	0.0493	UJ
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61		C61		C61
77		0.637		0.883		0.709		0.434		1.27		0.734		0.890		0.259	EMPC
78		0.0614	U	0.0565	U	0.0939	U	0.0732	U	0.0762	U	0.0675	U	0.102	U	0.0763	UJ
79		0.164		0.290	EMPC	0.0970	EMPC	0.0720	EMPC	0.296	EMPC	0.156		0.167		0.0602	UJ
80		0.0553	U	0.0509	U	0.0870	U	0.0678	U	0.0705	U	0.0625	U	0.0941	U	0.0684	UJ
81		0.0556	U	0.0580		0.0927	U	0.0700	U	0.0748	U	0.0680	U	0.0988	U	0.0831	UJ
82		0.660		0.821		0.584		0.310		1.57		0.852		1.17		0.157	J
83	83 + 99	5.72	C	9.46	C	5.37	C	3.47	C	13.2	C	7.01	C	8.82	C	1.65	C J
84		1.31		1.77		1.12		0.625		3.03		1.77		2.27		0.376	J
85	85 + 116 + 117	1.98	C	2.89	C	1.68	C	1.09	C	4.67	C	2.41	C	3.08	C	0.712	C EMPC
86	86 + 87 + 97 + 108 + 119 + 125	5.28	C	9.13	C	5.07	C	3.30	C	14.2	C	7.33	C	8.96	C	1.57	C J
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
88	88 + 91	0.878	C	1.36	C	0.782	C	0.525	C	2.08	C	1.23	C	1.51	C	0.334	C EMPC
89		0.0474	U	0.0475	U	0.0485	U	0.0538	U	0.0970	EMPC	0.0550	EMPC	0.0580	EMPC	0.0753	UJ
90	90 + 101 + 113	8.77	C	16.0	C	8.58	C	5.39	C	20.4	C	11.0	C	13.4	C	2.61	C J
91	88 + 91		C88		C88		C88		C88		C88		C88		C88		C88
92		1.68		2.51		1.55		0.903		4.16		2.20		2.59		0.493	J
93	93 + 95 + 98 + 100 + 102	5.11	C	9.32	C	5.25	C	3.19	C	14.5	C	6.82	C	8.18	C	1.41	C J
94		0.0474	U	0.0475	U	0.0485	U	0.0561	U	0.0656	U	0.0471	U	0.0457	U	0.0774	UJ
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93		C93
96		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0520	EMPC	0.0471	U	0.0457	U	0.0493	UJ
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93		C93
103		0.0620	EMPC	0.0780		0.0510	EMPC	0.0487	U	0.118		0.0940	EMPC	0.106		0.0625	UJ
104		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0437	U	0.0471	U	0.0457	U	0.0493	UJ
105		5.34		7.46		4.89		2.96		10.3		5.82		6.91		1.79	J
106		0.0492	U	0.0942	U	0.0487	U	0.0522	U	0.109	U	0.0604	U	0.0551	U	0.0784	UJ
107	107 + 124	0.448	C	0.641	C	0.424	C	0.240	C	0.955	C	0.492	C	0.637	C	0.159	C EMPC
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
109		0.984		1.30		0.908		0.565		1.86		1.02		1.32		0.272	EMPC
110	110 + 115	11.1	C	17.3	C	10.5	C	6.34	C	25.2	C	13.6	C	16.8	C	2.85	C J
111		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0460	U	0.0471	U	0.0457	U	0.0533	UJ
112		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0467	U	0.0471	U	0.0457	U	0.0529	UJ
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90		C90		C90
114		0.337	EMPC	0.345		0.284		0.154		0.542		0.328		0.336		0.0976	UJ
115	110 + 115		C110		C110		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85		C85		C85
118		13.1		24.4		13.9		8.31		29.8		14.1		16.8		4.09	J
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
120		0.0630	EMPC	0.120	EMPC	0.0870		0.0487	U	0.146		0.0750	EMPC	0.106	EMPC	0.0495	UJ
121		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0469	U	0.0471	U	0.0457	U	0.0546	UJ
122		0.153	EMPC	0.158		0.103		0.0630	EMPC	0.198		0.127		0.163	EMPC	0.0913	UJ
123		0.235	EMPC	0.406		0.272		0.172	EMPC	0.679		0.309		0.342		0.168	EMPC
124	107 + 124		C107		C107		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
126		0.115	EMPC	0.147	EMPC	0.0930	EMPC	0.0583	U	0.184	EMPC	0.0840		0.123		0.113	UJ
127		0.0522	U	0.100	U	0.0508	U	0.0544	U	0.114	U	0.0630	U	0.0574	U	0.0869	UJ

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference P39 08022739SD 2/27/2008		Reference P40 08022740SD 2/27/2008		Reference P41 08022741SD 2/27/2008		Reference P42 08022742SD 2/27/2008		Reference P85 08030685SD 3/6/2008		Reference P86 08030686SD 3/6/2008		Reference P87 08030687SD 3/6/2008		Downstream P46 08031046SD 3/10/2008	
128	128 + 166	2.89	C	3.29	C	2.72	C	1.49	C	6.20	C	3.91	C	4.82	C	0.767	C J
129	129 + 138 + 160 + 163	19.4	C	29.7	C	18.0	C	10.7	C	42.3	C	22.6	C	29.8	C	5.95	C J
130		1.14		1.46		1.06		0.620		2.38		1.46		1.88		0.312	J
131		0.131	EMPC	0.162		0.0780		0.0910	EMPC	0.279		0.185		0.234		0.0845	UJ
132		3.73		4.40		3.06		1.74		7.65		4.89		6.15		0.943	J
133		0.309		0.334	EMPC	0.226	EMPC	0.157		0.525	EMPC	0.362		0.426	EMPC	0.0815	UJ
134	134 + 143	0.499	C	0.724	C	0.392	C	0.278	C	1.10	C	0.664	C EMPC	0.732	C EMPC	0.117	C EMPC
135	135 + 151 + 154	4.23	C	5.98	C	4.03	C	2.28	C	9.54	C	5.80	C	6.80	C	1.34	C J
136		1.05		1.38		0.919		0.475		2.06		1.49		1.65		0.267	EMPC
137		0.541		0.754		0.454		0.313		1.37		0.643		0.892		0.158	J
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129		C129		C129
139	139 + 140	0.267	C	0.303	C EMPC	0.216	C	0.136	C	0.516	C	0.274	C EMPC	0.373	C	0.0850	C J
140	139 + 140		C139		C139		C139		C139		C139		C139		C139		C139
141		1.56	EMPC	1.56		1.26	EMPC	0.701		3.00		1.89		2.58		0.642	J
142		0.0474	U	0.0823	U	0.0558	U	0.0744	U	0.107	U	0.0499	U	0.0757	U	0.0839	UJ
143	134 + 143		C134		C134		C134		C134		C134		C134		C134		C134
144		0.441		0.563		0.399		0.251	EMPC	0.889		0.499		0.685		0.114	EMPC
145		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0437	U	0.0471	U	0.0457	U	0.0493	UJ
146		3.13		4.84		3.15		2.02		6.32		3.86		4.34		1.26	EMPC
147	147 + 149	10.7	C	16.7	C	10.1	C	6.06	C	23.9	C	13.7	C	16.5	C	3.01	C J
148		0.0474	U	0.0490	EMPC	0.0485	U	0.0487	U	0.0560	EMPC	0.0500	EMPC	0.0520	EMPC	0.0621	UJ
149	147 + 149		C147		C147		C147		C147		C147		C147		C147		C147
150		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0437	U	0.0471	U	0.0457	U	0.0493	UJ
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135		C135		C135
152		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0437	U	0.0471	U	0.0457	U	0.0493	UJ
153	153 + 168	16.5	C	33.5	C	18.9	C	12.2	C	47.7	C	20.9	C	25.3	C	5.46	C J
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135		C135		C135
155		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0437	U	0.0471	U	0.0457	U	0.0493	UJ
156	156 + 157	1.80	C	2.46	C	1.65	C	0.930	C	3.74	C	2.04	C	2.66	C	0.604	C EMPC
157	156 + 157		C156		C156		C156		C156		C156		C156		C156		C156
158		1.54		1.95		1.26		0.747	EMPC	2.93		1.72		2.25		0.446	J
159		0.197		0.152		0.101		0.0528	U	0.259		0.183		0.228		0.0790	EMPC
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129		C129		C129
161		0.0474	U	0.0559	U	0.0485	U	0.0501	U	0.0719	U	0.0471	U	0.0510	U	0.0578	UJ
162		0.0580	EMPC	0.0626	U	0.0540	EMPC	0.0545	U	0.138		0.0640	EMPC	0.112	EMPC	0.0613	UJ
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129		C129		C129
164		0.891		1.09		0.796		0.419		1.87		1.24		1.54		0.286	J
165		0.0474	U	0.0645	U	0.0485	U	0.0586	U	0.0841	U	0.0471	U	0.0596	U	0.0651	UJ
166	128 + 166		C128		C128		C128		C128		C128		C128		C128		C128
167		0.761		1.40		0.870		0.482	EMPC	1.97		0.915		1.20		0.320	J
168	153 + 168		C153		C153		C153		C153		C153		C153		C153		C153
169		0.200	U	0.100	U	0.100	U	0.0542	U	0.200	U	0.100	U	0.100	U	0.0697	UJ
170		2.79		3.13		2.55		1.38		5.22		3.53		5.16		1.03	J
171	171 + 173	1.21	C	1.42	C	1.06	C	0.598	C	2.02	C	1.53	C	2.08	C	0.410	C EMPC
172		0.565		0.550		0.446		0.269		1.15		0.816	EMPC	1.19		0.329	EMPC
173	171 + 173		C171		C171		C171		C171		C171		C171		C171		C171
174		2.60		2.94		2.38		1.31		5.52		3.58		5.30		1.12	J
175		0.168		0.187		0.119		0.0790	EMPC	0.283		0.219		0.230	EMPC	0.0600	EMPC
176		0.409		0.526		0.458		0.248	EMPC	0.818		0.566		0.732		0.0930	EMPC
177		2.78		3.38		2.46		1.53		5.10		3.67		4.55		0.830	J
178		1.09		1.37		0.918		0.567		2.22		1.52		1.86		0.449	J
179		1.82		2.17		1.59		0.931		3.45		2.41		3.01		0.523	J
180	180 + 193	7.12	C	9.27	C	6.75	C	3.99	C	15.2	C	9.26	C	13.1	C	2.87	C J
181		0.0474	U	0.0620	EMPC	0.0485	U	0.0487	U	0.0820	EMPC	0.0471	U	0.0950		0.0521	UJ
182		0.0480	EMPC	0.0540		0.0485	U	0.0487	U	0.0840	EMPC	0.0471	U	0.0990	EMPC	0.0493	UJ
183	183 + 185	2.58	C	3.61	C	2.48	C	1.50	C	5.44	C	3.37	C	4.71	C	0.947	C J
184		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0437	U	0.0471	U	0.0457	U	0.0493	UJ
185	183 + 185		C183		C183		C183		C183		C183		C183		C183		C183
186		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0437	U	0.0471	U	0.0457	U	0.0493	UJ
187		6.87		9.60		6.93		4.00		15.5		9.63		12.6		2.94	J
188		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0437	U	0.0471	U	0.0457	U	0.0493	UJ
189		0.159	EMPC	0.181		0.132		0.0720		0.250		0.158		0.243		0.0733	UJ
190		0.970		1.29		0.969		0.545		2.02		1.25		1.60		0.301	EMPC
191		0.140		0.192		0.137	EMPC	0.0540	EMPC	0.285		0.164	EMPC	0.217		0.0493	UJ
192		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0437	U	0.0471	U	0.0457	U	0.0493	UJ
193	180 + 193		C180		C180		C180		C180		C180		C180		C180		C180
194		1.90		1.82		1.40		0.778	EMPC	3.15		2.46		3.66		0.928	J
195		0.904		1.06		0.708		0.490	EMPC	1.45		1.05		1.57		0.326	J
196		0.958	EMPC	0.968		0.788		0.452		1.80		1.29		1.97		0.361	EMPC
197	197 + 200	0.332	C	0.357	C	0.316	C EMPC	0.209	C EMPC	0.658	C	0.464	C	0.741	C	0.238	C J
198	198 + 199	2.42	C	2.78	C	2.07	C	1.12	C EMPC	5.88	C	3.92	C	6.21	C	1.49	C J
199	198 + 199		C198		C198		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197		C197		C197
201		0.347		0.444		0.286	EMPC	0.209	EMPC	0.731		0.515		0.757		0.114	EMPC
202		0.885		1.05		0.686		0.466		1.97		1.36		2.00		0.589	EMPC
203		1.96		2.70		1.83		1.08		4.60		2.78		4.18		0.917	J
204		0.0474	U	0.0475	U	0.0485	U	0.0487	U	0.0437	U	0.0471	U	0.0457	U	0.0493	UJ
205		0.137	EMPC	0.152		0.119	EMPC	0.0780	EMPC	0.233		0.171	EMPC	0.256		0.0565	UJ
206		1.89		2.28		1.70		1.01	EMPC	4.38		2.98		5.79		0.784	J
207		0.276		0.376		0.244		0.141		0.607		0.481		0.799		0.128	UJ
208		0.751		0.849		0.645		0.332	EMPC	1.83		1.13		2.16		0.412	J
209		2.49		3.78		2.40		1.52		4.83		3.58		6.67		0.825	EMPC
Total PCBs as Congeners in ug/kg, dry weight																	
Total PCBs as Congeners (full EMPC/full SDL)		0.277	J	0.445	J	0.278	J	0.169	J	0.638	J	0.331	J	0.413	J	0.0990	J
Total PCBs as Congeners (KM-based)		0.272	J	0.442	J	0.273	J	0.161	J	0.634	J	0.326	J	0.409	J	0.0880	J
Total PCBs as Congeners (KM-based, capped)		0.272	J	0.442	J	0.273	J	0.161	J	0.634	J	0.326	J	0.409	J	0.0880	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-8
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Downstream P47 080311047SD 3/10/2008		Downstream P48 080311048SD 3/10/2008		Downstream P49 080311049SD 3/10/2008		Downstream P50 080311150SD 3/11/2008		Downstream P51 080311151SD 3/11/2008		Forebay - Goose Island P110 090427110S D 4/27/2009		Forebay - Goose Island P111 090429111S D 4/29/2009	
Individual Congeners in pg/g (ng/kg), dry weight															
1		0.187	J	0.226	J	1.13	J	0.276	J	0.118	EMPC	0.309	EMPC	0.339	
2		0.406	J	0.439	J	0.411	J	5.39	J	0.335	EMPC	22.8		27.2	
3		0.186	J	0.155	J	2.67	J	0.319	J	0.148	EMPC	1.02		1.06	
4		0.429	J	0.497	J	2.31	J	0.737	J	0.344	UJ	0.856	EMPC	0.862	
5		0.155	UJ	0.205	UJ	0.257	UJ	0.147	UJ	0.201	UJ	0.289	U	0.232	U
6		0.210	J	0.188	UJ	0.237	UJ	0.436	J	0.185	UJ	0.565		0.564	EMPC
7		0.148	UJ	0.195	UJ	0.245	UJ	0.140	UJ	0.191	UJ	0.252	U	0.202	U
8		0.938	J	0.738	J	1.01	J	2.25	J	0.493	J	2.41		2.79	
9		0.142	UJ	0.187	UJ	0.236	UJ	0.135	UJ	0.184	UJ	0.257	U	0.206	U
10		0.147	UJ	0.194	UJ	0.244	UJ	0.139	UJ	0.190	UJ	0.250	U	0.201	U
11		27.2	J	27.7	J	25.9	J	52.4	J	32.9	J	91.8		101	
12	12 + 13	0.150	C UJ	0.198	C UJ	0.249	C UJ	0.478	C J	0.194	C UJ	1.51	C	1.42	C EMPC
13	12 + 13		C12		C12		C12		C12		C12		C12		C12
14		0.142	UJ	0.188	UJ	0.236	UJ	0.135	UJ	0.184	UJ	0.251	U	0.202	U
15		1.15	J	1.51	J	4.98	J	3.36	J	0.685	J	5.52	EMPC	7.13	
16		0.496	J	0.347	EMPC	0.995	J	1.91	J	0.399	J	1.85		1.77	
17		0.605	J	0.361	J	1.25	J	1.91	J	0.390	J	1.93		2.00	
18	18 + 30	1.08	C J	0.981	C J	2.51	C J	4.34	C	0.832	C J	4.40	C	4.40	C
19		0.182	EMPC	0.212	J	2.66	J	0.443	J	0.121	UJ	0.395		0.385	
20	20 + 28	2.43	C J	2.80	C J	9.28	C J	11.4	C J	1.80	C J	15.2	C	17.1	C
21	21 + 33	1.07	C J	0.751	C J	3.81	C J	3.64	C J	0.523	C J	4.83	C	5.60	C
22		0.802	J	1.02	J	3.07	J	3.57	J	0.604	J	4.60		5.08	
23		0.0501	UJ	0.0492	UJ	2.17	J	0.0751	UJ	0.0691	UJ	0.104	U	0.0716	U
24		0.0503	UJ	0.0571	UJ	0.0912	UJ	0.0800	J	0.0801	UJ	0.0760	EMPC	0.0474	U
25		0.146	J	0.135	J	0.565	J	0.652	J	0.108	J	0.807		0.939	
26	26 + 29	0.331	C J	0.372	C J	1.30	C J	1.39	C J	0.224	C J	1.70	C	1.88	C
27		0.0840	J	0.0870	J	0.156	J	0.375	J	0.0750	U	0.382		0.419	
28	20 + 28		C20		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18		C18
31		1.72	J	1.77	J	7.67	J	7.66	J	1.25	J	9.39		10.5	
32		0.329	J	0.290	J	0.794	J	0.964	J	0.139	J	0.937		0.929	
33	21 + 33		C21		C21		C21		C21		C21		C21		C21
34		0.0501	UJ	0.0492	UJ	1.91	J	0.0721	UJ	0.0663	UJ	0.102	U	0.103	EMPC
35		0.113	EMPC	0.162	J	0.167	EMPC	0.259	EMPC	0.118	EMPC	0.533	EMPC	0.594	
36		0.0501	U	0.0492	UJ	0.101	UJ	0.0690	EMPC	0.0628	UJ	0.152		0.183	EMPC
37		1.04	J	1.23	J	4.29	J	3.96	J	0.819	J	5.85		7.23	
38		0.0501	UJ	0.0492	UJ	0.104	UJ	0.0705	UJ	0.0649	UJ	0.0946	U	0.0910	
39		0.0501	UJ	0.0492	UJ	0.102	UJ	0.0693	UJ	0.0638	UJ	0.0939	U	0.117	EMPC
40	40 + 41 + 71	0.659	C J	0.665	C J	3.77	C J	4.64	C J	0.901	C J	5.92	C	6.31	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40		C40
42		0.514	EMPC	0.378	J	1.94	J	2.82	J	0.522	EMPC	3.75		3.67	
43		0.0507	UJ	0.0547	UJ	0.316	EMPC	0.379	J	0.0890	U	0.301		0.474	
44	44 + 47 + 65	2.20	C J	1.80	C J	7.04	C J	12.2	C J	2.59	C J	16.9	C	16.1	C
45	45 + 51	0.260	C EMPC	0.272	C J	1.22	C J	1.51	C J	0.282	C J	1.67	C	1.83	C
46		0.0800	EMPC	0.0990	J	0.386	J	0.515	J	0.0860	UJ	0.637	EMPC	0.698	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44		C44
48		0.313	J	0.299	J	1.74	EMPC	1.65	J	0.314	EMPC	2.40		2.42	
49	49 + 69	1.31	C	1.15	C J	5.27	C J	8.71	C J	1.43	C J	9.67	C	10.7	C
50	50 + 53	0.253	C	0.194	C J	1.10	C EMPC	1.50	C J	0.215	C EMPC	1.67	C	1.50	C
51	45 + 51		C45		C45		C45		C45		C45		C45		C45
52		4.19	J	2.84	J	11.1	J	20.3	J	3.57	J	21.6		22.5	
53	50 + 53		C50		C50		C50		C50		C50		C50		C50
54		0.0501	UJ	0.0492	UJ	2.28	J	0.0473	UJ	0.0563	UJ	0.0677	U	0.0661	U
55		0.0643	UJ	0.0492	UJ	0.192	EMPC	0.192	EMPC	0.0808	UJ	0.124	U	0.117	U
56		1.02	J	0.944	J	4.57	J	5.85	J	1.14	J	6.87		8.25	
57		0.0600	UJ	0.0492	UJ	0.0635	UJ	0.0762	UJ	0.0754	UJ	0.120	U	0.113	U
58		0.0609	UJ	0.0492	UJ	0.0644	UJ	0.0810	EMPC	0.0765	UJ	0.120	U	0.113	U
59	59 + 62 + 75	0.187	C J	0.179	C EMPC	0.831	C J	1.06	C J	0.203	C J	1.61	C	1.50	C
60		0.847	J	0.714	J	2.73	J	3.10	J	0.782	J	4.46		4.83	
61	61 + 70 + 74 + 76	6.30	C J	4.78	C J	17.1	C J	30.3	C J	5.62	C J	34.6	C	39.7	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59		C59
63		0.114	J	0.102	J	0.492	J	0.727	J	0.154	J	0.997		1.18	
64		1.22	J	0.956	J	3.99	J	5.84	J	1.12		7.06		7.58	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44		C44
66		3.46	J	2.73	J	10.1	J	17.8	J	3.33	J	21.0		24.8	
67		0.0830	J	0.0600	J	0.250	J	0.346	EMPC	0.0661	UJ	0.469	EMPC	0.519	
68		0.0577	UJ	0.0492	UJ	0.0930	EMPC	0.211	EMPC	0.0725	UJ	0.243	EMPC	0.361	
69	49 + 69		C49		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40		C40
72		0.0575	U	0.0492	UJ	0.0870	J	0.299	EMPC	0.0722	UJ	0.327		0.406	
73		0.0610	EMPC	0.0492	UJ	0.0699	UJ	0.0473	UJ	0.0567	UJ	0.0731	U	0.0643	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61		C61
77		0.531	EMPC	0.478	J	1.60	J	2.01	J	0.573	J	2.85		3.53	
78		0.0633	UJ	0.0492	UJ	0.0670	UJ	0.0805	UJ	0.0796	UJ	0.117	U	0.111	U
79		0.114	EMPC	0.0880	EMPC	0.218	J	0.534	J	0.150	J	0.538		0.481	
80		0.0568	UJ	0.0492	UJ	0.0601	UJ	0.0722	UJ	0.0714	UJ	0.109	U	0.103	U
81		0.0707	UJ	0.0492	UJ	0.260	J	0.100	UJ	0.0981	UJ	0.135		0.150	EMPC
82		0.610	J	0.464	J	1.24	J	2.34	J	0.552	EMPC	3.66		4.45	
83	83 + 99	4.91	C J	3.50	C J	11.2	C J	22.0	C J	4.90	C J	30.0	C	33.8	C
84		1.17	J	0.826	J	2.41	J	6.29	J	0.926	J	8.13		9.95	
85	85 + 116 + 117	2.02	C J	1.33	C J	3.40	C J	5.73	C J	1.79	C J	9.25	C	10.4	C
86	86 + 87 + 97 + 108 + 119 + 125	4.59	C J	3.55	C J	10.1	C J	19.7	C J	4.51	C J	28.6	C	32.4	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86
88	88 + 91	0.831	C J	0.568	C J	1.59	C	4.17	C	0.775	C	5.27	C	6.11	C
89		0.0590	EMPC	0.0691	UJ	0.130	EMPC	0.268	J	0.265	U	0.309		0.359	EMPC
90	90 + 101 + 113	7.75	C J	5.61	C J	16.6	C J	30.9	C J	7.14	C J	44.2	C	51.9	C
91	88 + 91		C88		C88		C88		C88		C88		C88		C88
92		1.41		1.15	EMPC	2.90	J	9.03	J	1.20	J	8.33	J	9.58	J
93	93 + 95 + 98 + 100 + 102	4.85	C J	3.38	C J	8.51	C J	32.3	C J	4.49	C J	29.7	C	31.7	C
94		0.0529	UJ	0.0710	UJ	0.112	UJ	0.142	EMPC	0.275	UJ	0.111	U	0.125	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93
96		0.0501	UJ	0.0492	UJ	0.0760	J	0.104	J	0.145	UJ	0.133	EMPC	0.198	EMPC
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93
103		0.0700	EMPC	0.0573	UJ	0.0903	UJ	0.222	J	0.223	UJ	0.397		0.469	EMPC
104		0.0501	UJ	0.0492	UJ	0.890	J	0.0473	UJ	0.0652	UJ	0.0612	U	0.0557	U
105		6.26	J	4.26		9.43	J	19.7	J	3.98	J	24.9		27.7	
106		0.0576	UJ	0.0587	UJ	0.120	UJ	0.0733	UJ	0.328	UJ	0.200	U	0.270	U
107	107 + 124	0.398	C J	0.254	C EMPC	0.438	C J	1.17	C EMPC	0.414	C J	1.72	C	2.27	C EMPC
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86
109		0.762		0.549	EMPC	1.39	J	2.45	J	0.906	J	4.60		5.25	
110	110 + 115	10.6	C J	7.15	C J	17.2	C J	35.9	C J	8.71	C J	52.8	C	63.5	C
111		0.0501	UJ	0.0492	UJ	0.0771	UJ	0.0535	UJ	0.194	UJ	0.0723	U	0.0816	U
112		0.0501	UJ	0.0492	UJ	0.0765	UJ	0.0531	UJ	0.184	UJ	0.0716	U	0.0807	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90		C90
114		0.383	J	0.239		0.650	J	0.957	J	0.315	J	1.29		1.37	
115	110 + 115		C110		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85		C85
118		13.2	J	9.18	J	16.7	J	45.6	J	10.9	J	65.7		69.5	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86
120		0.0501	UJ	0.0590	EMPC	0.0715	UJ	0.226	EMPC	0.183	UJ	0.319	EMPC	0.291	
121		0.0501	UJ	0.0500	UJ	0.0788	UJ	0.0547	UJ	0.197	UJ	0.0774	U	0.0872	U
122		0.0910	EMPC	0.0800	J	0.144	EMPC	0.360	J	0.354	UJ	0.604		0.576	
123		0.271	J	0.130	J	0.497	J	0.874	J	0.226	J	0.963		0.970	EMPC
124	107 + 124		C107		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86
126		0.0805	UJ	0.0787	UJ	0.171	UJ	0.211	J	0.0962	UJ	0.255	EMPC	0.419	EMPC
127		0.0638	UJ	0.0650	UJ	0.133	U	0.0812	UJ	0.344	UJ	0.204	U	0.275	U

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Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Downstream P47 08031047SD 3/10/2008		Downstream P48 08031048SD 3/10/2008		Downstream P49 08031049SD 3/10/2008		Downstream P50 08031150SD 3/11/2008		Downstream P51 08031151SD 3/11/2008		Forebay - Goose Island P110 090427110S D 4/27/2009		Forebay - Goose Island P111 090429111S D 4/29/2009	
128	128 + 166	2.55	C J	1.90	C J	3.23	C J	8.95	C J	2.12	C J	14.2	C	17.3	C
129	129 + 138 + 160 + 163	15.8	C J	12.0	C J	21.9	C J	69.1	C J	16.1	C J	91.4	C	97.5	C
130		0.928	EMPC	0.708	J	1.12	J	4.02	J	0.750	EMPC	5.75		6.51	
131		0.115	UJ	0.0800	EMPC	0.272	EMPC	0.461	J	0.111	UJ	0.721	EMPC	0.761	
132		2.60	J	2.42	J	5.88	J	14.5	J	2.06	EMPC	20.9		25.3	
133		0.212	J	0.165	EMPC	0.298	J	0.818	J	0.161	EMPC	1.28		1.54	
134	134 + 143	0.433	C EMPC	0.289	C J	0.738	C EMPC	2.14	C J	0.310	C EMPC	3.04	C	3.76	C
135	135 + 151 + 154	3.00	C J	2.63	C J	6.34	C	17.0	C J	2.48	C J	20.8	C	23.5	C
136		0.815	J	0.637	J	1.72	J	4.84	J	0.664	J	6.12		7.28	
137		0.667	EMPC	0.481	J	1.04	EMPC	1.96	J	0.454	J	2.52	EMPC	3.22	EMPC
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129		C129
139	139 + 140	0.237	C EMPC	0.114	C EMPC	0.330	C	0.721	C	0.116	C EMPC	1.31	C EMPC	1.33	C
140	139 + 140		C139		C139		C139		C139		C139		C139		C139
141		1.46	J	1.22	J	2.43	J	7.30	J	1.26	J	7.80		10.7	
142		0.115	UJ	0.0793	UJ	0.112	UJ	0.114	UJ	0.110	UJ	0.168	U	0.307	U
143	134 + 143		C134		C134		C134		C134		C134		C134		C134
144		0.331	J	0.332	EMPC	0.746	J	1.64	J	0.254	J	1.98		2.66	
145		0.0501	UJ	0.0492	UJ	0.0482	UJ	0.0495	UJ	0.0563	UJ	0.0739	U	0.0643	U
146		2.82	J	2.39	J	5.31	J	13.3	J	3.80	J	9.23	J	8.91	J
147	147 + 149	7.67	C J	6.04	C J	13.4	C J	39.2	C J	6.15	C J	54.9	C	60.2	C
148		0.0501	UJ	0.0529	UJ	0.0618	UJ	0.0730	J	0.0669	UJ	0.132		0.0796	U
149	147 + 149		C147		C147		C147		C147		C147		C147		C147
150		0.0501	U	0.0492	UJ	0.0482	UJ	0.0482	UJ	0.0563	UJ	0.100		0.122	EMPC
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135		C135
152		0.0501	UJ	0.0492	UJ	0.0482	UJ	0.0473	UJ	0.0563	UJ	0.0676	U	0.0589	U
153	153 + 168	13.2	C J	9.74	C J	18.3	C	56.8	C J	12.0	C J	87.6	C	78.8	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135		C135
155		0.0501	UJ	0.0492	UJ	0.350	J	0.0473	UJ	0.0563	UJ	0.0591	U	0.0523	U
156	156 + 157	1.82	C J	1.39	C EMPC	2.89	C	6.25	C J	1.74	C	8.50	C	10.4	C
157	156 + 157		C156		C156		C156		C156		C156		C156		C156
158		1.32	J	1.01	J	2.05	J	5.59	J	1.10	J	6.63		7.51	
159		0.0817	UJ	0.144	J	0.319	J	0.987	EMPC	0.118	EMPC	0.753		0.871	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129		C129
161		0.0790	UJ	0.0547	UJ	0.0769	UJ	0.0788	UJ	0.0760	UJ	0.113	U	0.207	U
162		0.0838	UJ	0.0580	UJ	0.0816	UJ	0.226	EMPC	0.0806	UJ	0.284	EMPC	0.250	EMPC
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129		C129
164		0.714	J	0.636	J	1.21	EMPC	3.73	J	0.688	J	5.10		6.01	
165		0.0889	UJ	0.0615	UJ	0.0865	UJ	0.0887	UJ	0.0855	UJ	0.130	U	0.238	U
166	128 + 166		C128		C128		C128		C128		C128		C128		C128
167		0.697	J	0.554	J	1.03	J	2.61	J	0.765	J	4.02		3.81	
168	153 + 168		C153		C153		C153		C153		C153		C153		C153
169		0.0894	UJ	0.0630	UJ	0.0900	UJ	0.154	UJ	0.0837	UJ	0.241	U	0.250	U
170		1.86	J	2.04	J	5.34	J	12.4	J	2.73	J	13.8		17.1	
171	171 + 173	0.715	C J	0.627	C EMPC	1.67	C	4.57	C J	0.806	C	5.36	C	5.94	C
172		0.524	J	0.481	EMPC	1.16	J	2.65	J	0.705	J	2.43		3.08	
173	171 + 173		C171		C171		C171		C171		C171		C171		C171
174		1.82	J	1.69	J	4.75	J	13.1	J	2.21	J	13.9		18.8	
175		0.0870	EMPC	0.125	EMPC	0.175	J	0.612	J	0.122	EMPC	0.706		0.698	EMPC
176		0.306	EMPC	0.249	J	0.573	J	1.80	J	0.207	EMPC	1.99		2.20	
177		1.86	J	1.69	J	4.39	J	10.3	J	2.13	J	11.9		13.8	
178		0.667	EMPC	0.601	J	1.33	EMPC	4.16	J	0.998	J	5.05		5.66	
179		1.13	J	1.02	J	2.51	J	6.56	J	1.01	J	8.08		9.39	
180	180 + 193	4.66	C J	4.94	C J	12.6	C J	31.4	C J	7.15	C J	32.2	C	37.6	C
181		0.0501	UJ	0.0566	UJ	0.122	EMPC	0.160	EMPC	0.0563	UJ	0.164	EMPC	0.139	EMPC
182		0.0501	UJ	0.0522	UJ	0.0980	EMPC	0.117	EMPC	0.0920	EMPC	0.117	U	0.178	
183	183 + 185	1.67	C J	1.53	C	3.86	C	10.9	C	1.90	C	11.5	C	13.1	C
184		0.0501	UJ	0.0492	UJ	0.0482	UJ	0.0473	UJ	0.0563	UJ	0.0990	EMPC	0.0741	U
185	183 + 185		C183		C183		C183		C183		C183		C183		C183
186		0.0501	UJ	0.0492	UJ	0.0515	UJ	0.0473	UJ	0.0563	UJ	0.0974	U	0.0791	U
187		4.81	J	4.34	J	10.9	J	29.7	J	7.70	J	31.1	J	29.8	J
188		0.0501	UJ	0.0492	UJ	0.0940	J	0.0473	UJ	0.0563	UJ	0.0892	U	0.0733	U
189		0.115	EMPC	0.0970	J	0.254	J	0.596	J	0.140	J	0.615		0.869	
190		0.572	J	0.431	J	1.29	J	3.28	J	0.731	J	4.02		4.11	EMPC
191		0.0690	EMPC	0.0930	J	0.173	EMPC	0.522	J	0.104	EMPC	0.534	EMPC	0.630	
192		0.0501	UJ	0.0492	UJ	0.0603	UJ	0.0540	UJ	0.0563	UJ	0.104	U	0.0844	U
193	180 + 193		C180		C180		C180		C180		C180		C180		C180
194		1.11	J	1.17	EMPC	3.01	J	7.52	J	2.04	J	9.07		12.0	
195		0.564	J	0.578	EMPC	1.36	J	3.41	J	1.01	J	4.07		4.76	
196		0.646	EMPC	0.558	EMPC	1.45	J	3.73	J	0.932	EMPC	4.27		5.18	
197	197 + 200	0.339	C J	0.418	C J	0.670	C EMPC	1.46	C J	0.328	C UJ	0.815	C	1.01	C J
198	198 + 199	2.04	C J	1.68	C J	3.57	C EMPC	9.72	C J	2.94	C J	13.4	C	17.1	C
199	198 + 199		C198		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197		C197
201		0.321	J	0.216	EMPC	0.482	J	1.28	J	0.293	EMPC	1.64	EMPC	1.80	
202		0.738	J	0.515	J	1.14	J	3.04	J	1.15	J	4.07		4.81	
203		1.20	EMPC	1.32	J	2.39	J	6.99	J	2.28	J	9.76		10.9	
204		0.0501	UJ	0.0492	UJ	0.0487	UJ	0.0473	UJ	0.0563	UJ	0.0942	U	0.0818	U
205		0.0950	EMPC	0.0650	EMPC	0.117	J	0.398	J	0.115	EMPC	0.499		0.631	EMPC
206		2.92	J	1.05	J	1.59	J	6.16	J	2.16	J	7.73		11.1	
207		0.413	J	0.118	UJ	0.231	J	0.789	EMPC	0.287	EMPC	1.25		1.62	
208		1.40	J	0.437	J	0.574	J	2.26	J	0.876	J	2.71		3.88	
209		2.40	J	1.25	J	1.49	J	7.10	J	3.45	J	6.79		11.0	
Total PCBs as Congeners in ug/kg, dry weight															
Total PCBs as Congeners (full EMPC/full SDL)		0.221	J	0.181	J	0.430	J	0.923	J	0.223	J	1.22	J	1.36	J
Total PCBs as Congeners (KM-based)		0.215	J	0.173	J	0.418	J	0.917	J	0.213	J	1.20	J	1.34	J
Total PCBs as Congeners (KM-based, capped)		0.215	J	0.173	J	0.418	J	0.917	J	0.213	J	1.20	J	1.34	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-9
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay P04 08022604TC 2/26/2008		Forebay P07 08021507TC 2/15/2008		Forebay P08 08021508TC 2/15/2008		Forebay P10 08021410TC 2/14/2008		Forebay P11 08021411TC 2/14/2008		Forebay P15 08022115TC 2/21/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		2.74		1.68		2.18		1.41		1.66		1.65	
2		3.68		3.01		4.21	J	2.54		3.06		3.31	
3		0.763		0.592		0.795		0.435		0.654		0.642	EMPC
4		100		59.5		39.8		32.8		36.8		36.6	
5		1.08		0.834		0.805	J	0.629		0.828	J	0.800	
6		13.9		8.19		7.02	J	6.50		7.86	J	7.64	
7		0.503		0.472		0.358	J	0.290	U	0.347	J	0.379	
8		26.5		19.4		18.5	J	14.3		17.6	J	19.7	
9		0.799		0.789		0.487	J	0.405		0.539	J	0.510	EMPC
10		0.872		0.669		0.390	J	0.371		0.428	EMPC	0.493	
11		8,810		6,810		8,370	J	5,260		6,580	J	6,630	
12	12 + 13	0.124	C U	0.212	C U	0.268	C UJ	0.308	C U	0.186	C UJ	0.270	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.167		0.202	U	0.255	UJ	0.293	U	0.178	UJ	0.258	U
15		25.7		18.5		22.9		27.4		26.3		20.1	
16		127		63.8		62.4		52.7		58.0		60.9	
17		208		85.9		64.1		47.4		50.7		52.3	
18	18 + 30	346	C	144	C	131	C	110	C	121	C	123	C
19		24.8		14.3		8.00		6.35		7.40		7.74	
20	20 + 28	142	C	80.2	C	86.1	C	62.1	C	77.6	C	79.4	C
21	21 + 33	70.4	C	38.2	C	42.3	C	30.3	C	38.6	C	38.3	C
22		159		84.1		90.5		70.1		84.0		80.3	
23		0.115	U	0.0991	U	0.120	U	0.0879	U	0.0830		0.0770	
24		0.0417	U	0.758		0.0469	U	0.734	EMPC	0.0473	U	0.0481	U
25		33.9		9.37		7.96		5.64		6.52		6.53	
26	26 + 29	34.0	C	15.9	C	15.6	C	11.1	C	14.4	C	14.1	C
27		107		36.2		22.6		15.8		14.4		14.5	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		83.6		47.1		51.4		35.6		48.1		47.6	
32		23.3		7.95		5.00		3.75		4.66		4.81	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.351		0.183	EMPC	0.187		0.180		0.191		0.227	
35		14.0		12.6		12.7		8.72		11.9		11.9	
36		3.86		3.07		3.54		2.45		3.13		3.15	
37		58.1		35.1		35.9		27.7		35.3		35.2	
38		2.77		1.04		1.15		0.815		0.832	EMPC	0.868	
39		7.79		2.26	J	2.44	J	1.79	J	1.98	J	1.91	J
40	40 + 41 + 71	494	C	104	C	83.8	C	63.7	C	68.1	C	64.4	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		982		255		195		133		121		124	
43		14.3		5.57		6.01		4.04		4.35		3.83	
44	44 + 47 + 65	8,950	C	1,710	C	1,050	C	633	C	456	C	458	C
45	45 + 51	65.2	C	19.9	C	17.5	C	13.4	C	14.7	C	15.6	C
46		7.57		3.13		2.86		2.15		2.69		2.60	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		209		63.1		63.1		45.3		51.1		48.0	
49	49 + 69	771	C	140	C	121	C	85.9	C	92.9	C	88.1	C
50	50 + 53	455	C	90.4	C	58.8	C	37.8	C	31.7	C	32.9	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		3,660		501		392		284		279		262	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.452	EMPC	0.219		0.124		0.0750		0.0730		0.135	
55		0.968	U	0.340	U	0.339	U	0.241	U	0.421	U	0.395	U
56		697		147		115		89.0		91.0		86.5	
57		1.20		0.579		0.566		0.450		0.624		0.496	
58		0.910	U	0.328	U	0.328	U	0.233	U	0.406	U	0.381	U
59	59 + 62 + 75	74.6	C	28.8	C	30.1	C	22.8	C	25.5	C	24.7	C
60		178		60.0		58.1		42.5		51.8		51.2	
61	61 + 70 + 74 + 76	3,230	C	542	C	446	C	317	C	344	C	319	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		42.6		11.6		10.7		7.84		9.51		8.78	
64		368		90.3		82.3		59.8		68.3		67.9	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		1,680		387		337		244		280		258	
67		20.9		8.22		8.43		6.66		8.23		7.55	
68		5.15		2.48		2.36		1.78		2.36		2.15	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		5.58		2.37		2.33		1.76		2.05		1.99	
73		0.0417	U	0.0468	U	0.0469	U	0.0488	U	0.0473	U	0.0481	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		69.0		35.9		34.8		26.9		33.6		33.3	
78		0.920	U	0.343	U	0.343	U	0.244	U	0.425	U	0.398	U
79		613		125		78.5		43.8		23.9		24.5	
80		0.830	U	0.298	U	0.298	U	0.212	U	0.369	U	0.346	U
81		3.30	EMPC	1.56	EMPC	1.42	EMPC	0.693	EMPC	1.42	EMPC	1.31	EMPC
82		357		43.2		31.9		24.6		19.3		19.1	
83	83 + 99	9,730	C	1,520	C	1,210	C	726	C	621	C	579	C
84		834		110		81.8		57.3		52.3		51.2	
85	85 + 116 + 117	1,880	C	291	C	242	C	157	C	145	C	142	C
86	86 + 87 + 97 + 108 + 119 + 125	17,400	C	2,880	C	1,860	C	1,070	C	615	C	614	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	1,010	C	129	C	105	C	69.7	C	61.1	C	59.4	C
89		31.7		3.90		2.99		2.17		1.99		2.04	
90	90 + 101 + 113	15,900	C	2,200	C	1,790	C	1,100	C	992	C	923	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		1,290		187		162		112		115		109	
93	93 + 95 + 98 + 100 + 102	15,200	C	2,410	C	1,620	C	899	C	593	C	603	C
94		10.5		1.53		1.28		0.906		0.943		0.923	
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		8.86		1.27		0.979		0.732		0.662		0.667	
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		16.2		3.03		2.92		2.10		2.26		2.10	
104		0.366		0.101	EMPC	0.0910	EMPC	0.0598	U	0.0940	EMPC	0.0840	EMPC
105		6,200		924		741		455		407		397	
106		1.06	U	0.453	U	0.405	U	0.301	U	0.167	U	0.293	U
107	107 + 124	521	C	77.4	C	62.7	C	37.4	C	32.8	C	32.4	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		653		120		102		66.5		69.8		69.1	
110	110 + 115	12,400	C	1,720	C	1,360	C	928	C	852	C	812	C
111		0.359	U	0.295	U	0.321		0.260	EMPC	0.524	EMPC	0.495	EMPC
112		0.359	U	0.275	U	0.261	U	0.225	U	0.206	U	0.185	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		445		65.5		52.5		28.1		23.8		23.1	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		64,700		12,100		7,970		4,090		2,260		2,300	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		15.5		6.92		7.21		5.52		7.17		6.72	
121		0.506		0.297	U	0.339		0.266		0.309		0.319	
122		60.9		13.4		12.7		6.55		4.83		5.10	
123		1,150		229		152		83.7		46.2		47.1	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		11.0		4.57		4.17		3.37		4.13		3.86	
127		23.4		5.19		2.92		1.68		0.178	U	1.04	

Table H-9
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay P04 08022604TC 2/26/2008		Forebay P07 08021507TC 2/15/2008		Forebay P08 08021508TC 2/15/2008		Forebay P10 08021410TC 2/14/2008		Forebay P11 08021411TC 2/14/2008		Forebay P15 08022115TC 2/21/2008	
128	128 + 166	1,220	C	231	C	200	C	130	C	128	C	135	C
129	129 + 138 + 160 + 163	30,900	C	5,610	C	4,250	C	2,590	C	2,080	C	2,070	C
130		488		112		96.1		65.3		68.5		69.4	
131		87.8		14.5		11.8		7.50		7.00		6.90	
132		1,420		265		223		157		152		147	
133		80.0		23.5		21.9		14.9		17.9		17.7	
134	134 + 143	253	C	50.1	C	43.3	C	28.9	C	29.0	C	29.2	C
135	135 + 151 + 154	1,440	C	343	C	323	C	223	C	258	C	256	C
136		406		67.2		59.2		41.6		41.4		41.3	
137		956		164		113		65.6		37.9		37.5	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	183	C	31.9	C	27.6	C	16.5	C	15.5	C	15.3	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		299		61.6		58.8		43.3		35.9		39.5	
142		0.834	U	0.433	U	0.443	U	0.546	U	0.596	U	0.759	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		204		36.1		33.0		21.7		23.4		22.3	
145		2.16		0.288		0.290		0.232		0.108		0.143	EMPC
146		2,310		584		501		327		331		324	
147	147 + 149	10,000	C	1,910	C	1,640	C	1,070	C	1,070	C	1,040	C
148		5.32		1.86		1.94		1.42		1.71		1.54	
149	147 + 149		C147		C147		C147		C147		C147		C147
150		5.10		1.31		1.38		0.918		1.09		1.01	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		4.02		0.611		0.541		0.349		0.332		0.314	
153	153 + 168	61,300	C	14,400	C	10,100	C	5,270	C	3,560	C	3,830	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		1.06		0.802		0.869	EMPC	0.664		0.894		0.856	
156	156 + 157	3,610	C	584	C	405	C	228	C	136	C	133	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		1,480		264		215		126		115		115	
159		5.83		2.11		1.77		1.47		1.85		1.78	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.554	U	0.304	U	0.311	U	0.383	U	0.418	U	0.533	U
162		25.6		5.18		4.23		2.51		2.71		2.92	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		255		46.0		42.1		30.7		32.0		33.2	
165		1.63		0.636		0.575		0.439	U	0.587		0.610	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		3,800		944		566		302		146		157	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		16.5	U	5.60	U	4.73	U	3.37	U	3.27	U	3.56	U
170		188		49.4		44.6		32.9		38.9		39.3	
171	171 + 173	283	C	88.2	C	79.6	C	55.6	C	62.4	C	66.8	C
172		18.4		6.23		5.91		4.70		5.65		5.45	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		129		41.6		39.7		31.6		36.1		37.9	
175		28.9		9.62		9.47		6.50		7.84		8.34	
176		86.4		31.0		29.8		21.7		25.6		25.8	
177		485		196		188		136		164		170	
178		179		88.2		88.0		62.9		80.6		82.3	
179		245		116		115		84.2		105		105	
180	180 + 193	2,720	C	874	C	692	C	491	C	476	C	509	C
181		30.8		5.60		4.57		2.73		2.16		2.34	
182		3.27		1.40		1.51		1.19		1.21		1.14	
183	183 + 185	865	C	265	C	243	C	171	C	194	C	201	C
184		2.00		1.29		1.43		1.00		1.31		1.38	
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0417	U	0.0468	U	0.0469	U	0.0488	U	0.0473	U	0.0481	U
187		1,490		679		671		479		602		617	
188		1.86		1.27		1.22		0.917		1.11		1.20	
189		10.1		2.22		2.12		1.52		1.71		1.56	
190		435		130		114		78.7		79.8		84.1	
191		32.2		8.64		7.73		5.50		5.77		6.07	
192		0.0417	U	0.0468	U	0.0495	U	0.0488	U	0.0473	U	0.0481	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		19.5		8.22		8.38		6.54		8.52		7.72	
195		54.0		24.7		24.5		18.0		22.2		22.6	
196		34.2		13.9		14.0		10.5		12.7		12.4	
197	197 + 200	17.0	C	7.61	C	7.75	C	5.70	C	6.96	C	7.31	C
198	198 + 199	61.1	C	29.1	C	28.6	C	22.6	C	28.0	C	27.3	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		40.6		19.7		19.2		14.2		17.8		18.6	
202		101		60.9		61.2		45.2		57.8		58.2	
203		324		144		136		98.7		111		116	
204		0.0820		0.0740	EMPC	0.0810		0.0930		0.0730	EMPC	0.0530	
205		9.52		4.16		4.14		2.98		3.65		3.69	
206		30.2		15.7		15.9		11.8		14.7		14.8	
207		5.44		3.05		3.05		2.26		2.84		2.77	
208		11.7		7.24		7.20		5.51		7.00		7.09	
209		13.5		10.8		11.2		8.26		10.8		10.9	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		312	J	65.7	J	51.5	J	30.6	J	26.7	J	26.9	J
Total PCBs as Congeners (KM-based)		312	J	65.7	J	51.5	J	30.7	J	26.7	J	26.9	J
Total PCBs as Congeners (KM-based, capped)		312	J	65.7	J	51.5	J	30.6	J	26.7	J	26.9	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-9
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay P16 08022116TC 2/21/2008		Forebay P17 08022117TC 2/21/2008		Forebay P18 08021118TC 2/12/2008		Forebay P21 08021221TC 2/12/2008		Forebay P05 08031905TC 3/19/2008		Forebay P06 08031806TC 3/18/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		1.32		1.78		1.91		1.80		2.83		4.56	
2		3.05		3.56		3.45		3.64		2.78		3.68	
3		0.654		0.677		0.634		0.576	EMPC	0.763		0.914	
4		36.2		33.1		37.1		38.9		93.7		227	
5		0.728		0.740		0.719		0.610		0.956		1.11	
6		7.43		7.39		8.01		8.30		9.60		12.9	
7		0.297		0.321		0.355		0.296		0.493		1.06	
8		16.3		17.5		19.8		17.0		24.0		37.0	
9		0.456	EMPC	0.504		0.576		0.444		0.801		1.64	
10		0.426		0.408		0.443		0.392		1.02		2.45	
11		6,220		6,080		6,840		6,470		7,750		9,620	
12	12 + 13	0.225	C U	0.132	C U	0.108	C U	0.150	C U	0.229	C U	0.173	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.214	U	0.128	U	0.127		0.146	U	0.218	U	0.168	U
15		23.3		16.4		17.3		20.4		23.0	J	25.7	
16		62.0		63.7		66.0		68.7		77.3		97.0	
17		51.9		53.1		55.3		54.0		105		159	
18	18 + 30	127	C	127	C	132	C	133	C	193	C	235	C
19		6.67		6.71		7.63		6.96		13.8		40.9	
20	20 + 28	74.7	C	75.5	C	77.8	C	69.8	C	97.1	C	115	C
21	21 + 33	35.2	C	37.6	C	41.8	C	34.2	C	46.7	C	56.9	C
22		77.8		82.4		86.6		76.3		107		117	
23		0.0860		0.0996	U	0.0820		0.0750		0.219	U	0.175	U
24		0.0484	U	0.723	EMPC	0.0466	U	0.0457	U	0.571		0.0487	U
25		6.13		6.55		6.53		5.80		12.6		15.4	
26	26 + 29	13.4	C	13.4	C	14.4	C	13.0	C	18.7	C	23.8	C
27		15.5		14.3		14.5		15.8		42.1		68.1	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		42.7		45.1		48.4		39.3		61.3		76.2	
32		4.43		5.03		5.87		4.41		8.09		17.8	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.183		0.215		0.225		0.213		0.259		0.348	
35		9.93		9.60		10.4		9.54		14.3		16.5	
36		2.84		2.76		2.98		2.75		3.68		4.31	
37		30.6		31.8		36.1		32.4		43.0		53.7	
38		0.797		0.845		0.887		0.791		1.49		1.53	
39		1.85	J	2.06		2.26		1.95		3.32		3.85	
40	40 + 41 + 71	64.3	C	66.5	C	77.6	C	63.2	C	114	C	182	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		128		132		141		122		262		341	
43		4.33		4.24		4.68		4.15		4.49		10.9	
44	44 + 47 + 65	484	C	484	C	504	C	452	C	1,760	C	2,430	C
45	45 + 51	14.2	C	16.7	C	18.0	C	14.8	C	22.2	C	34.2	C
46		2.45		2.77		3.03		2.51		3.71		6.15	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		49.9		54.0		58.0		49.7		72.2		101	
49	49 + 69	83.7	C	95.0	C	101	C	83.7	C	171	C	310	C
50	50 + 53	34.1	C	37.4	C	38.3	C	34.2	C	104	C	158	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		261		277		296		261		665		1,320	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0484	U	0.0660		0.0710		0.0580	EMPC	0.175	EMPC	0.544	
55		0.488	U	0.424	U	0.496	U	0.449	U	1.08	U	0.575	U
56		80.0		89.6		101		79.6		180		243	
57		0.535		0.563		0.600		0.497		0.948	U	0.813	
58		0.472	U	0.399	U	0.466	U	0.422	U	1.06	U	0.541	U
59	59 + 62 + 75	26.3	C	26.6	C	28.1	C	26.3	C	35.0	C	43.4	C
60		45.3		49.0		56.2		46.6		76.2		104	
61	61 + 70 + 74 + 76	307	C	330	C	358	C	300	C	729	C	1,210	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		8.57		9.25		10.0		8.44		15.1		21.5	
64		61.6		69.2		76.2		61.9		110		186	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		249		269		300		253		516		714	
67		6.99		8.06		8.39		7.32		11.6		15.0	
68		1.94		2.22		2.18		1.76		2.50		3.66	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		1.87		2.13		2.07		1.81		2.61		3.33	
73		0.0484	U	0.0469	U	0.0466	U	0.0457	U	0.0495	U	0.0487	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		30.1		30.7		33.9		32.0		41.0		52.3	
78		0.493	U	0.403	U	0.471	U	0.427	U	1.02	U	0.547	U
79		22.8		22.8		23.6		22.1		152		160	
80		0.429	U	0.363	U	0.425	U	0.385	U	0.903	U	0.493	U
81		1.54	EMPC	1.55	EMPC	1.42	EMPC	1.38	EMPC	2.70	EMPC	1.97	EMPC
82		15.6		18.7		19.0		16.0		57.4		120	
83	83 + 99	567	C	583	C	592	C	554	C	1,540	C	2,710	C
84		45.9		52.6		54.2		48.8		123		301	
85	85 + 116 + 117	129	C	136	C	143	C	134	C	330	C	591	C
86	86 + 87 + 97 + 108 + 119 + 125	583	C	599	C	600	C	573	C	2,790	C	4,080	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	55.3	C	64.2	C	63.6	C	57.9	C	146	C	303	C
89		1.80		1.98		2.21		1.90		4.63		9.91	
90	90 + 101 + 113	899	C	968	C	967	C	927	C	2,310	C	4,200	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		104		114		117		109		207		423	
93	93 + 95 + 98 + 100 + 102	605	C	676	C	648	C	591	C	2,390	C	3,930	C
94		0.766		0.894		0.950		0.735		1.68		4.22	
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.591		0.743		0.724		0.647		1.57		3.71	
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		2.13		2.47		2.49		2.04		3.57		6.70	
104		0.0740	EMPC	0.0740		0.0810		0.0720	EMPC	0.167	EMPC	0.132	EMPC
105		361		365		377		371		1,020		1,730	
106		0.280	U	0.314	U	0.212	U	0.287	U	0.391	U	0.715	U
107	107 + 124	29.4	C	29.9	C	30.1	C	30.8	C	88.9	C	136	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		64.5		60.9		62.5		61.4		148		224	
110	110 + 115	738	C	786	C	796	C	784	C	1,920	C	3,490	C
111		0.383	EMPC	0.545		0.412	EMPC	0.418		0.657	U	0.680	U
112		0.124	U	0.184	U	0.205	U	0.220	U	0.636	U	0.680	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		20.9		20.2		22.8		21.6		77.4		126	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		2,170		2,080		2,130		2,050		10,300		15,900	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		6.52		6.40		6.56		6.40		8.05		9.61	
121		0.321		0.363		0.321		0.311		0.649	U	0.699	U
122		3.84		3.95		3.80		3.87		19.9	EMPC	22.3	
123		42.0		38.4		41.3		39.2		239		293	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		4.02		3.39		3.63		4.00		5.27		5.74	
127		1.13		0.319	U	1.03		1.15		5.67		7.75	

Table H-9
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay P16 08022116TC 2/21/2008		Forebay P17 08022117TC 2/21/2008		Forebay P18 08021118TC 2/12/2008		Forebay P21 08021221TC 2/12/2008		Forebay P05 08031905TC 3/19/2008		Forebay P06 08031806TC 3/18/2008	
128	128 + 166	114	C	114	C	122	C	118	C	244	C	416	C
129	129 + 138 + 160 + 163	1,970	C	1,800	C	1,890	C	1,890	C	5,880	C	7,400	C
130		61.2		57.6		58.6		57.4		125		176	
131		6.11		5.92		5.90		5.96		13.3		27.3	
132		131		129		132		127		272		497	
133		16.3		14.8		15.3		14.7		24.9		35.1	
134	134 + 143	26.4	C	26.4	C	26.9	C	24.8	C	51.0	C	96.0	C
135	135 + 151 + 154	241	C	246	C	259	C	243	C	362	C	579	C
136		39.3		44.2		44.5		39.3		71.9		143	
137		37.3		28.8		33.8		30.6		163		237	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	14.5	C	13.6	C	14.5	C	13.4	C	29.6	C	54.8	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		33.2		33.0		37.5		33.7		104		100	
142		0.745	U	0.588	U	0.589	U	0.754	U	2.04	U	0.910	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		21.6		21.0		23.5		20.9		39.9		69.2	
145		0.0970	EMPC	0.117		0.116		0.107		0.340		0.686	
146		311		270		290		286		591		776	
147	147 + 149	993	C	941	C	1,000	C	962	C	1,920	C	2,760	C
148		1.58		1.64		1.74		1.66		2.12		2.99	
149	147 + 149		C147		C147		C147		C147		C147		C147
150		1.05		1.14		1.21		1.06		1.45		2.49	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.325	EMPC	0.357		0.371		0.322		0.702		1.45	
153	153 + 168	3,740	C	2,980	C	3,160	C	2,950	C	13,300	C	18,100	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.720		0.822	EMPC	0.826		0.732		1.09		1.18	
156	156 + 157	128	C	120	C	124	C	121	C	614	C	828	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		103		98.8		104		103		259		397	
159		1.56		1.49		1.62		1.71		2.58		2.88	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.523	U	0.390	U	0.392	U	0.501	U	1.43	U	0.604	U
162		2.06		2.23		2.24		2.20		4.31		8.18	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		27.4		29.3		31.3		29.8		60.4		88.6	
165		0.599	U	0.521		0.580		0.580	U	1.62	U	0.700	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		149		134		131		125		956		1,180	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		3.53	U	3.40	U	3.66	U	3.62	U	1.73	U	6.60	U
170		32.3		32.2		34.7		34.3		58.5		78.4	
171	171 + 173	56.3	C	55.5	C	55.1	C	57.2	C	91.8	C	119	C
172		4.60		4.53		5.02		4.75		7.22		8.92	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		31.1		30.8		32.9		32.1		46.6		61.2	
175		7.20		6.90		7.01		7.22		10.6		13.7	
176		23.3		21.2		21.1		22.2		31.3		41.3	
177		148		146		141		151		217		266	
178		72.4		70.3		70.0		72.9		90.9		118	
179		95.7		88.2		86.2		88.3		116		149	
180	180 + 193	489	C	420	C	424	C	433	C	929	C	1,050	C
181		2.13		1.95		2.04		2.07		5.76		8.24	
182		0.0484	U	1.18		1.23		1.12		1.55		2.18	
183	183 + 185	183	C	170	C	175	C	184	C	288	C	343	C
184		1.20		1.10		1.05		1.09		1.44		1.67	
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0484	U	0.0469	U	0.0466	U	0.0463	U	0.0929	U	0.0487	U
187		549		502		520		556		736		879	
188		1.08		1.02		1.06		1.00		1.18		1.64	
189		1.56		1.67		1.60		1.66		2.77		4.03	
190		76.5		68.5		71.6		77.5		142		162	
191		5.28		5.26		5.28		5.14		10.7		12.7	
192		0.0484	U	0.0469	U	0.0466	U	0.0539	U	0.110	U	0.0563	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		6.83		7.11		7.23		7.74		10.0		11.8	
195		19.9		19.5		18.5		19.3		25.3		30.9	
196		11.4		11.9		11.8		11.6		15.2		18.9	
197	197 + 200	6.44	C	6.39	C	6.30	C	6.09	C	8.14	C	9.58	C
198	198 + 199	24.0	C	25.2	C	25.1	C	23.9	C	31.4	C	38.5	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		16.4		16.3		15.8		15.6		19.9		25.0	
202		52.1		49.2		47.4		49.4		59.7		73.6	
203		111		106		107		104		144		171	
204		0.0660	EMPC	0.0660	EMPC	0.0670	EMPC	0.0610	EMPC	0.0970		0.132	EMPC
205		3.36		3.35		3.26		3.22		4.26		5.31	
206		13.1		13.1		12.5		12.7		16.7		19.7	
207		2.58		2.71		2.51		2.64		3.29		3.90	
208		6.10		6.13		5.82		5.95		7.88		9.00	
209		9.41		9.45		8.11		8.91		11.0		12.7	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		25.5	J	24.5	J	25.9	J	24.7	J	65.8	J	95.1	J
Total PCBs as Congeners (KM-based)		25.6	J	24.5	J	25.9	J	24.6	J	65.8	J	95.1	J
Total PCBs as Congeners (KM-based, capped)		25.5	J	24.5	J	25.9	J	24.6	J	65.8	J	95.1	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-9
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay P13 08031713TC 3/17/2008		Forebay P14 08031814TC 3/18/2008		Forebay P65 08022965TC 2/29/2008		Forebay P88 08031788TC 3/17/2008		Forebay P89 08031789TC 3/17/2008		Reference P22 08030522TC 3/5/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		1.66		1.87		1.87		1.69		1.85		1.73	
2		3.32		3.72		3.48		3.25		3.31		5.27	
3		0.716	U	0.777	U	0.846	U	0.755	U	0.723	U	0.699	U
4		42.9		44.6		46.3		39.3		34.7		37.7	
5		0.940		1.16		1.14		1.08		0.946		1.09	
6		11.4		10.9		11.4		9.06		8.02		9.53	
7		0.443		0.460		0.474		0.446		0.567		0.447	
8		24.8		25.0		25.6		23.4		22.3		20.3	
9		0.647		0.752		0.714		0.668		0.648	EMPC	0.583	
10		0.596		0.729		0.664		0.674		0.647		0.620	
11		7,780		7,370		8,450		8,120		7,760		8,040	
12	12 + 13	51.1	C	59.3	C	71.7	C	59.9	C EMPC	59.1	C	40.7	C
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.174		0.240	EMPC	0.201		0.182		0.194	EMPC	0.193	EMPC
15		16.2		15.3		18.7		14.2		13.5		12.8	
16		89.6		86.3		96.8		81.9		71.1		84.7	
17		80.6		76.3		81.1		69.7		62.4		64.4	
18	18 + 30	195	C	188	C	195	C	164	C	146	C	164	C
19		7.78		8.22		8.42		8.38		8.24		7.95	
20	20 + 28	102	C	104	C	99.8	C	89.2	C	86.6	C	83.8	C
21	21 + 33	47.3	C	48.6	C	49.1	C	44.1	C	43.4	C	41.8	C
22		109		109		105		97.9		87.7		93.1	
23		0.121	EMPC	0.127	EMPC	0.104	EMPC	0.0960	EMPC	0.118	EMPC	0.127	EMPC
24		1.50		0.956		1.25		1.14		1.05		1.01	
25		9.05		8.79		9.06		8.33		7.62		7.56	
26	26 + 29	18.3	C	18.2	C	19.2	C	17.1	C	16.7	C	16.7	C
27		21.1		20.6		20.9		18.0		16.4		17.4	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		58.6		60.7		61.3		55.4		57.4		49.2	
32		7.07		7.58		6.82		5.90		6.00		5.55	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.294		0.295		0.273		0.286	EMPC	0.258	EMPC	0.307	
35		12.4		13.3		13.6		14.4		13.7		13.2	
36		3.60		3.83		4.07		3.80		3.55		3.58	
37		39.0		41.7		45.1		42.5		39.9		38.5	
38		1.12		1.30		1.13		1.25	EMPC	1.09	EMPC	1.32	
39		2.44		2.66		2.59		2.52		2.34		2.47	
40	40 + 41 + 71	81.1	C	80.6	C	87.8	C	79.8	C	77.5	C	76.3	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		184		179		163		154		149		148	
43		3.92		3.72		4.21		3.47		3.65		3.19	
44	44 + 47 + 65	665	C	647	C	610	C	592	C	558	C	556	C
45	45 + 51	21.4	C	20.6	C	22.4	C	20.2	C	19.8	C	18.3	C
46		3.53		3.43		3.78		3.55		3.72		3.18	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		69.5		67.0		72.5		63.1		60.0		59.6	
49	49 + 69	117	C	115	C	132	C	122	C	122	C	104	C
50	50 + 53	51.4	C	47.9	C	49.2	C	45.1	C	42.1	C	41.7	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		347		339		376		356		342		319	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0860		0.0600	EMPC	0.136		0.126	EMPC	0.118	EMPC	0.109	EMPC
55		2.38	J	4.37		4.43		4.02	EMPC	5.20		3.08	
56		106		115		106		108		100		108	
57		0.839		0.912	EMPC	1.01		0.737		0.853		0.964	
58		0.929		1.02		1.22		1.30		1.23		0.980	
59	59 + 62 + 75	32.1	C	31.5	C	33.7	C	30.0	C	26.9	C	28.8	C
60		57.9		60.6		65.3		63.1		61.4		56.9	
61	61 + 70 + 74 + 76	425	C	446	C	459	C	444	C	432	C	395	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		11.9		12.4		12.9		12.1		12.0		10.7	
64		83.3		83.6		92.3		88.0		87.4		77.7	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		347		361		362		347		328		319	
67		11.4		11.6		11.6		10.6		10.0		10.0	
68		2.77		2.78		3.26		2.87		2.58		2.67	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		2.47		2.62		3.00		2.69		2.39		2.65	
73		0.0481	U	0.0488	U	0.0492	U	0.0471	U	0.0495	U	0.0477	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		37.5		38.8		42.0		39.8		35.9		37.8	
78		0.404	U	0.428	U	0.309	U	0.319	U	0.325	U	0.308	U
79		25.0		29.5		26.1		29.1		27.3		26.8	
80		0.356	U	0.377	U	0.278	U	0.287	U	0.293	U	0.277	U
81		1.94		2.08	EMPC	2.46		2.01		2.38		1.89	
82		17.9		20.1		20.5		20.9		20.6		19.0	
83	83 + 99	709	C	729	C	771	C	764	C	701	C	683	C
84		60.5		61.6		66.6		68.2		65.3		60.7	
85	85 + 116 + 117	163	C	173	C	186	C	189	C	172	C	169	C
86	86 + 87 + 97 + 108 + 119 + 125	777	C	803	C	744	C	792	C	753	C	694	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	76.1	C	75.6	C	83.9	C	81.2	C	76.1	C	69.8	C
89		2.36		2.25		2.51		2.47		2.55		2.14	
90	90 + 101 + 113	1,160	C	1,190	C	1,250	C	1,240	C	1,130	C	1,110	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		132		135		146		140		134		129	
93	93 + 95 + 98 + 100 + 102	835	C	811	C	768	C	796	C	753	C	710	C
94		1.10		1.09		1.20		1.22		1.14		1.09	
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.923		0.857		0.944		0.949		0.998		0.772	
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		2.91		2.92		3.29		3.08		2.89		2.79	
104		0.123	EMPC	0.104	EMPC	0.149		0.0900	EMPC	0.0880	EMPC	0.127	
105		437		464		478		476		444		438	
106		2.73	U	2.96	U	2.41	U	3.02	U	2.56	U	1.95	U
107	107 + 124	37.1	C	41.6	C	41.3	C	41.6	C	39.2	C	41.0	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		79.8		82.3		89.3		84.9		77.4		80.0	
110	110 + 115	956	C	1,010	C	1,050	C	1,050	C	955	C	978	C
111		0.400	EMPC	0.445	EMPC	0.624	EMPC	0.645		0.590		0.609	
112		0.0793	U	0.0904	U	0.0580	U	0.173	U	0.148	U	0.174	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		26.0		27.4		29.1		28.7		27.3		26.7	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		2,730		2,870		2,540		2,760		2,670		2,420	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		8.10		8.63		8.59		8.27		7.57		8.63	
121		0.352		0.459		0.498		0.401		0.392	EMPC	0.353	
122		4.18		4.47	EMPC	3.65		4.77		4.80	EMPC	5.96	
123		51.2		59.5		43.8		52.0		54.4		48.4	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		5.06		5.31		5.30		5.10		4.72		5.01	
127		2.78	U	3.00	U	2.56	U	3.22	U	2.72	U	2.08	

Table H-9
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Forebay P13 08031713TC 3/17/2008		Forebay P14 08031814TC 3/18/2008		Forebay P65 08022965TC 2/29/2008		Forebay P88 08031788TC 3/17/2008		Forebay P89 08031789TC 3/17/2008		Reference P22 08030522TC 3/5/2008	
128	128 + 166	145	C	157	C	170	C	164	C	151	C	158	C
129	129 + 138 + 160 + 163	2,550	C	2,740	C	2,610	C	2,650	C	2,430	C	2,410	C
130		78.6		84.0		85.7		80.9		73.9		75.4	
131		7.82		8.42		8.56		8.61		7.99		7.87	
132		170		181		182		191		173		175	
133		19.9		21.2		23.6		21.6		19.8		20.5	
134	134 + 143	32.0	C	36.3	C	36.3	C	35.3	C	32.4	C	34.2	C
135	135 + 151 + 154	318	C	333	C	353	C	347	C	322	C	320	C
136		53.8		55.7		58.9		60.3		55.4		52.5	
137		43.6	EMPC	44.5		42.5		47.8		41.9		38.3	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	18.5	C	19.8	C	19.8	C	20.0	C	18.1	C	17.8	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		37.3		38.5		34.9		40.6		37.4		32.3	
142		0.450	U	0.594	U	0.401	U	0.378	U	0.280	U	0.437	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		29.5		30.3		32.2		32.1		29.6		28.8	
145		0.171	EMPC	0.174		0.218	EMPC	0.170	EMPC	0.207	EMPC	0.143	
146		402		434		412		401		377		367	
147	147 + 149	1,270	C	1,330	C	1,340	C	1,340	C	1,220	C	1,230	C
148		2.13		2.20	EMPC	2.42		2.19		2.00		2.09	
149	147 + 149		C147		C147		C147		C147		C147		C147
150		1.44		1.48		1.63		1.51		1.38		1.31	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.459		0.405		0.471	EMPC	0.477		0.474		0.449	
153	153 + 168	5,180	C	5,530	C	4,140	C	4,590	C	4,620	C	4,070	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.952		1.14		1.18	EMPC	1.03		0.919		1.01	
156	156 + 157	157	C	171	C	156	C	168	C	158	C	138	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		125		134		141		139		128		129	
159		1.91		1.98		2.52		2.47		2.40	EMPC	2.36	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.305	U	0.403	U	0.284	U	0.267	U	0.198	U	0.309	U
162		2.43		3.00		3.31		2.89		2.66	EMPC	3.10	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		36.8		41.3		42.7		42.1		41.3		41.3	
165		0.675	EMPC	0.596		0.750		0.594		0.601		0.647	
166	128 + 166		C128		C128		C128		C128		C128		C128
167		209		213		154		185		201		149	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		1.35	U	1.09	U	0.940	U	0.901	U	1.10	U	0.809	U
170		38.8		43.3		44.5		45.4		40.8		42.6	
171	171 + 173	66.7	C	72.5	C	73.6	C	71.2	C	63.9	C	70.1	C
172		5.74		6.00		6.35		6.37		6.01		6.14	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		39.1		40.7		44.0		46.2		42.2		42.4	
175		8.71		9.35		9.56		9.44		8.02		8.78	
176		27.8		29.4		30.9		30.1		26.3		27.5	
177		177		189		203		189		166		184	
178		87.2		93.0		97.5		89.8		78.9		87.8	
179		114		119		128		122		108		115	
180	180 + 193	657	C	696	C	508	C	558	C	540	C	512	C
181		2.45		2.64		2.42		2.57		2.40		2.45	
182		1.01		1.03		0.916		0.989		0.901		0.938	EMPC
183	183 + 185	225	C	242	C	227	C	229	C	209	C	214	C
184		1.47		1.52		1.69		1.44		1.44		1.43	
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0481	U	0.0713	U	0.0492	U	0.0498	U	0.0495	U	0.0477	U
187		656		709		700		672		615		656	
188		1.25		1.36		1.39		1.36		1.21		1.35	
189		1.66		2.03		2.21		2.18		1.81		1.83	
190		95.5		102		90.3		94.1		85.6		90.1	
191		6.11		6.48		6.27		6.56		5.92		6.18	
192		0.0481	U	0.0807	U	0.0492	U	0.0560	U	0.0495	U	0.0477	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		8.78		9.54		10.7		10.3		9.10		8.77	
195		24.7		26.7		27.8		26.5		23.7		26.3	
196		14.4		14.9		15.8		16.0		13.9		14.8	
197	197 + 200	7.73	C	8.23	C	9.13	C	8.90	C	7.85	C	8.37	C
198	198 + 199	31.6	C	32.4	C	35.1	C	33.5	C	29.3	C	32.3	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		19.6		21.6		21.9		21.4		18.8		19.9	
202		62.8		66.4		69.5		60.8		54.4		62.4	
203		155		159		123		131		129		130	
204		0.0530	EMPC	0.0820	EMPC	0.132	EMPC	0.0790		0.0890		0.0940	
205		3.97		4.34		4.66		4.30		3.78		4.12	
206		16.7		17.2		18.3		16.1		14.6		17.0	
207		3.24		3.46		3.56		3.38		2.94		3.55	
208		7.78		8.28		8.63		7.69		6.97		8.18	
209		12.0		12.6		12.8		10.4		10.3		11.2	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		33.2	J	34.0	J	33.1	J	33.3	J	31.7	J	30.9	J
Total PCBs as Congeners (KM-based)		33.1	J	34.0	J	33.1	J	33.2	J	31.6	J	30.8	J
Total PCBs as Congeners (KM-based, capped)		33.1	J	34.0	J	33.1	J	33.2	J	31.6	J	30.8	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-9
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Reference P24 08030524TC 3/5/2008		Reference P27 08030427TC 3/4/2008		Reference P26 08030426TC 3/4/2008		Reference P28 08030428TC 3/4/2008		Reference P29 08022229TC 2/22/2008		Reference P34 08022534TC 2/25/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		1.41		1.59		1.41		1.57		3.03		2.71	
2		3.57		4.31		3.24		3.59		7.28		5.79	
3		0.686	U	0.675	U	0.584	U	0.687	U	0.920		0.853	U
4		35.8		33.3		31.8		40.3		126		142	
5		0.917		0.399	U	0.236	U	1.01		1.78		1.82	
6		9.05		10.9		9.35		9.62		35.3		39.9	
7		0.544		0.376	U	0.222	U	0.380		0.810		0.905	
8		19.1		24.6		22.0		19.3		46.9		49.6	
9		0.552		0.359	U	0.212	U	0.488		1.44		1.50	
10		0.528		0.331	U	0.195	U	0.544		1.56		1.62	
11		6,830		8,520		7,970		7,030		6,960		6,720	
12	12 + 13	46.1	C EMPC	0.401	C U	0.237	C U	33.1	C	31.7	C	32.8	C
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.129		0.369	U	0.218	U	0.152	EMPC	0.170		0.126	EMPC
15		15.0		11.0		8.81		14.8		19.8		21.8	
16		90.0		88.4		88.0		99.2		187		208	
17		68.0		78.3		73.8		74.1		165		197	
18	18 + 30	174	C	193	C	184	C	192	C	406	C	457	C
19		6.96		8.54		8.48		7.71		18.2		19.2	
20	20 + 28	81.9	C	101	C	99.2	C	86.0	C	154	C	163	C
21	21 + 33	40.1	C	45.8	C	46.5	C	40.8	C	95.9	C	103	C
22		91.3		103		105		101		170		191	
23		0.101		0.183	U	0.157	U	0.0990	EMPC	0.127	EMPC	0.136	
24		1.11		0.946		1.08		0.986		2.21		1.84	
25		7.13		8.61		8.64		7.50		15.3		17.0	
26	26 + 29	15.3	C	18.2	C	18.4	C	16.3	C	35.0	C	37.5	C
27		18.4		21.9		20.4		20.7		38.4		43.6	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		46.8		60.4		60.3		46.9		95.4		100	
32		5.06		6.10		6.19		5.41		19.6		22.3	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.252		0.349		0.246	EMPC	0.228		0.419		0.436	
35		11.1		13.9		13.2		11.9		12.4		11.6	
36		3.17		3.96		3.97		3.25		3.27		3.08	
37		35.2		31.5		30.6		36.8		56.3		58.2	
38		1.12		1.24		1.20		1.20		1.44		1.53	
39		2.26		2.92		2.79	EMPC	2.42		3.86		4.37	
40	40 + 41 + 71	74.7	C	82.5	C	84.9	C	79.1	C	138	C	150	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		156		180		168		179		235		261	
43		3.61		0.122	U	0.0799	U	3.48		6.01		6.02	
44	44 + 47 + 65	591	C	648	C	630	C	680	C	784	C	818	C
45	45 + 51	20.2	C	20.3	C	23.3	C	20.9	C	37.4	C	41.4	C
46		3.14		3.47		3.82		3.23		5.74		6.16	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		63.7		65.1		71.6		66.9		111		126	
49	49 + 69	109	C	112	C	124	C	108	C	159	C	170	C
50	50 + 53	47.7	C	48.7	C	52.6	C	52.6	C	75.0	C	81.9	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		327		339		381		337		431		442	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0890	EMPC	0.0789	U	0.0485	U	0.108		0.138		0.171	
55		4.40		0.353	U	0.192	U	3.34		4.10		5.26	
56		93.8		111		95.5		106		106		108	
57		0.820	EMPC	1.01		0.862		0.643		1.24		1.08	
58		1.19	EMPC	0.364	U	0.198	U	1.35		1.14		1.12	EMPC
59	59 + 62 + 75	30.9	C	32.7	C	35.2	C	33.0	C	46.2	C	49.7	C
60		52.2		65.4		56.5		54.2		58.9		60.2	
61	61 + 70 + 74 + 76	366	C	426	C	382	C	381	C	445	C	454	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		10.5		11.6		10.9		10.8		13.3		13.7	
64		77.0		0.0694	U	84.7		78.0		112		117	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		301		342		306		319		336		348	
67		9.85		10.8		9.84		10.5		13.2		14.0	
68		2.52		3.11		2.86		2.76		2.88		2.97	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		2.52		2.86		2.68		2.49		2.93		3.10	
73		0.0476	U	2.69		2.78		0.0499	U	0.0492	U	0.0491	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		33.8		34.3		33.2		37.3		36.4		36.1	
78		0.363	U	0.360	U	0.196	U	0.356	U	0.305	U	0.318	U
79		21.7		32.3		26.3		26.9		22.2		24.2	
80		0.327	U	0.309	U	0.169	U	0.320	U	0.274	U	0.286	U
81		2.04		0.961	EMPC	1.43	EMPC	2.11		2.07		2.23	EMPC
82		16.5		18.5		18.9		16.4		18.2		18.5	
83	83 + 99	663	C	728	C	760	C	716	C	668	C	690	C
84		56.8		60.4		63.9		59.3		63.2		64.5	
85	85 + 116 + 117	161	C	166	C	170	C	165	C	159	C	166	C
86	86 + 87 + 97 + 108 + 119 + 125	652	C	779	C	785	C	760	C	644	C	662	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	70.7	C	74.2	C	75.9	C	73.4	C	75.4	C	78.3	C
89		2.06		2.20		2.29		2.17		2.47		2.64	
90	90 + 101 + 113	1,070	C	1,200	C	1,240	C	1,160	C	1,090	C	1,130	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		122		132		127		128		133		136	
93	93 + 95 + 98 + 100 + 102	742	C	787	C	822	C	854	C	742	C	754	C
94		1.09		1.11	EMPC	1.21	EMPC	1.06		1.25		1.42	
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.786		0.735		1.05		0.843		1.04		1.05	
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		2.94		2.94		2.95		2.77		3.11		3.37	
104		0.0950		0.122	U	0.116	U	0.0990		0.0890		0.104	
105		399		370		350		434		406		424	
106		2.29	U	1.97	U	1.56	U	2.28	U	1.85	U	1.65	U
107	107 + 124	36.1	C	42.7	C	36.9	C	39.6	C	36.6	C	37.5	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		72.6		84.2		73.5		75.6		76.1		79.4	
110	110 + 115	892	C	981	C	986	C	954	C	936	C	954	C
111		0.601	EMPC	0.233	U	0.218	U	0.520		0.549		0.674	EMPC
112		0.132	U	0.225	U	0.211	U	0.0861	U	0.0997	U	0.151	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		22.8		24.2		21.3		25.8		23.6		24.6	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		2,220		2,130		1,910		2,660		2,140		2,200	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		7.84		8.78		8.71		8.51		7.58		7.98	
121		0.358		0.392	EMPC	0.217	U	0.333		0.444	EMPC	0.490	
122		4.09		6.44		4.53		4.21	EMPC	4.18	EMPC	4.37	
123		42.3		42.1		39.0		54.0		40.3		38.4	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		4.44		4.51		4.07		5.04		4.05		4.03	
127		2.44	U	1.86	U	1.48	U	2.42	U	1.96	U	1.94	EMPC

IUPAC #	COELUTING CONGENERS1	Reference P24 08030524TC 3/5/2008		Reference P27 08030427TC 3/4/2008		Reference P26 08030426TC 3/4/2008		Reference P28 08030428TC 3/4/2008		Reference P29 08022229TC 2/22/2008		Reference P34 08022534TC 2/25/2008	
128	128 + 166	144	C	184	C	174	C	140	C	144	C	147	C
129	129 + 138 + 160 + 163	2,270	C	2,700	C	2,650	C	2,550	C	2,150	C	2,210	C
130		72.7		79.6		72.8		71.0		71.4		73.6	
131		7.40		8.12		0.674	U	7.07		7.81		7.94	
132		161		172		169		162		160		169	
133		20.2		22.2		21.4		18.8		20.0		19.8	
134	134 + 143	32.4	C	31.1	C	33.1	C	30.5	C	32.9	C	35.1	C
135	135 + 151 + 154	314	C	325	C	352	C	305	C	316	C	328	C
136		53.9		0.0686	U	0.0753	U	51.7		54.1		56.9	
137		36.7		45.5		40.8		40.3		33.9		35.2	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	17.5	C	19.3	C	19.4	C	17.2	C	17.2	C	17.8	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		31.0		39.2		35.3		33.7		28.9		31.2	
142		0.417	U	0.668	U	0.686	U	0.533	U	0.313	U	0.326	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		27.9		29.6		30.7		27.0		27.6		29.0	
145		0.175	EMPC	0.0724	U	0.181	EMPC	0.165	EMPC	0.155	EMPC	0.205	EMPC
146		343		432		412		386		335		348	
147	147 + 149	1,210	C	1,400	C	1,370	C	1,280	C	1,140	C	1,200	C
148		2.07		2.26		2.32	EMPC	2.04		2.11		2.18	
149	147 + 149		C147		C147		C147		C147		C147		C147
150		1.47		1.55		1.74		1.44		1.48		1.56	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.416		0.445	EMPC	0.0748	U	0.406		0.441		0.472	
153	153 + 168	3,660	C	5,010	C	4,530	C	4,570	C	3,450	C	3,500	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.948		1.01		1.05		0.861		0.956		1.02	
156	156 + 157	126	C	149	C	137	C	152	C	125	C	129	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		120		140		136		129		117		124	
159		1.95		1.94		1.92		2.16	EMPC	1.95		2.26	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.295	U	0.412	U	0.423	U	0.377	U	0.221	U	0.231	U
162		2.99		3.18		2.80		2.64	EMPC	3.00		2.87	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		35.5		39.2		38.1		38.1		36.0		38.3	
165		0.639	EMPC	0.480	U	0.493	U	0.476		0.589		0.257	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		127		167		151		170		130		127	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.933	U	1.70	U	1.53	U	0.872	U	0.900	U	0.939	U
170		36.4		41.0		37.8		38.8		36.5		39.9	
171	171 + 173	65.8	C	70.8	C	66.3	C	67.0	C	65.2	C	68.4	C
172		5.30		6.08		5.70		5.47		5.27		5.93	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		36.9		38.5		37.0		40.0		37.6		41.2	
175		8.31		9.04		8.29		8.63		8.38		8.54	
176		27.4		28.8		28.3		27.2		27.8		28.4	
177		171		179		165		174		172		174	
178		83.9		86.8		83.4		83.9		85.5		86.9	
179		112		0.0805	U	113		111		112		116	
180	180 + 193	440	C	529	C	465	C	584	C	422	C	431	C
181		2.16		2.58		2.47		2.39		2.20		2.32	
182		0.889	EMPC	0.102	U	0.933		0.991	EMPC	0.803		0.998	
183	183 + 185	195	C	216	C	202	C	220	C	191	C	198	C
184		1.45		1.54		1.58		1.32		1.55		1.45	
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0476	U	0.0816	U	0.0602	U	0.0499	U	0.0580	U	0.0491	U
187		605		691		650		661		615		631	
188		1.23		1.54		1.32		1.27		1.33		1.31	
189		1.75		1.51	EMPC	1.44		1.85		1.68		1.98	
190		79.1		90.9		80.3		98.6		78.0		78.5	
191		5.39		6.14		5.82		6.20		5.33		5.86	
192		0.0476	U	0.0834	U	0.0615	U	0.0499	U	0.0653	U	0.0491	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		7.58		9.49		9.21		8.56		7.56		8.38	
195		23.9		26.3		25.3		26.2		24.0		25.1	
196		12.9		14.8		13.9		15.0		13.3		14.5	
197	197 + 200	7.77	C	7.80	C	8.48	C	8.04	C	8.07	C	8.11	C
198	198 + 199	29.9	C	29.3	C	29.2	C	32.0	C	30.6	C	33.5	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		19.4		19.8		19.7		20.2		20.1		20.6	
202		58.7		72.1		65.4		61.8		61.6		62.0	
203		113		131		126		146		114		115	
204		0.0810		0.0638	U	0.0870	EMPC	0.0820		0.100		0.0940	
205		3.75		4.21		3.85		4.03		3.97		4.00	
206		15.7		17.2		15.5		16.6		17.5		19.3	
207		3.26		3.47		3.37		3.44		3.42		4.00	
208		7.31		7.67		7.34		8.00		8.87		9.49	
209		10.2		11.5		10.0		11.4		12.4		13.1	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		28.4	J	33.0	J	31.6	J	31.4	J	29.8	J	30.4	J
Total PCBs as Congeners (KM-based)		28.3	J	32.9	J	31.6	J	31.3	J	29.7	J	30.4	J
Total PCBs as Congeners (KM-based, capped)		28.3	J	32.9	J	31.6	J	31.3	J	29.7	J	30.4	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-9
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Reference P35 08022535TC 2/25/2008		Reference P36 08022536TC 2/25/2008		Reference P37 08022637TC 2/26/2008		Reference P38 08022738TC 2/27/2008		Reference P39 08022739TC 2/27/2008		Reference P40 08022740TC 2/27/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		2.98		3.16		2.89		2.59		2.42		2.64	
2		5.12		4.70		4.12		3.88		4.08		4.58	
3		1.02		0.929		0.891		0.863		0.777		0.853	
4		95.4		95.0		93.8		80.3		77.0		79.2	
5		1.66		1.02		1.53		1.30		1.18		1.43	
6		25.8		23.0		22.7		19.1		17.9		16.9	
7		0.896		0.774		0.701		0.721		0.686		0.618	
8		43.7		43.2		40.0		35.0		34.2		32.1	
9		1.53		1.53		1.44		1.34		1.22		1.14	
10		1.50		1.52		1.33		1.19		1.13		1.12	
11		8,190		8,770		7,370		7,100		8,990		8,260	
12	12 + 13	55.4	C	83.8	C	53.0	C EMPC	70.1	C	113	C	90.6	C
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.221		0.226		0.187		0.157		0.187		0.251	U
15		19.7		23.8		20.3		30.4	EMPC	35.6	EMPC	35.1	EMPC
16		147		133		127		111		111		107	
17		142		133		122		106		104		103	
18	18 + 30	315	C	310	C	300	C	252	C	252	C	242	C
19		15.6		15.6		15.2		13.4		13.0		12.9	
20	20 + 28	147	C	161	C	163	C	138	C	133	C	128	C
21	21 + 33	79.3	C	80.7	C	79.8	C	68.9	C	66.5	C	65.7	C
22		149		165		162		138		141		135	
23		0.201	EMPC	0.148		0.123	EMPC	0.184		0.134	U	0.120	EMPC
24		1.56		2.35		1.69		1.95		1.55		1.56	
25		13.8		14.5		14.2		11.9		11.7		12.1	
26	26 + 29	31.9	C	31.1	C	30.9	C	26.8	C	25.3	C	25.2	C
27		32.1		31.0		30.6		26.4		25.5		25.9	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		103		103		95.8		83.0		83.2		83.9	
32		15.1		16.3		16.5		13.4		11.1		11.3	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.499	EMPC	0.418		0.395		0.365		0.328	EMPC	0.366	
35		16.0		13.5		12.1		11.1		13.7		14.3	
36		4.22		3.86		3.29		3.08		3.79		3.71	
37		54.6		53.0		49.8		43.9		48.0		53.7	
38		1.41		1.15	EMPC	1.06		0.913		1.08		1.10	
39		3.39		2.43		2.13		2.00		2.31		2.95	J
40	40 + 41 + 71	132	C	121	C	98.3	C	98.1	C	103	C	102	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		233		207		203		168		185		183	
43		5.77		7.01		5.94		6.44		6.63		7.40	
44	44 + 47 + 65	791	C	699	C	689	C	599	C	665	C	681	C
45	45 + 51	35.4	C	31.2	C	31.2	C	26.9	C	27.0	C	28.7	C
46		6.10		5.76		5.40		4.93		4.81		4.83	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		105		98.1		90.6		77.5		83.4		84.2	
49	49 + 69	172	C	159	C	143	C	126	C	138	C	141	C
50	50 + 53	70.4	C	62.6	C	63.1	C	53.7	C	57.4	C	60.0	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		462		416		385		353		394		420	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.176	EMPC	0.158		0.149		0.172		0.144		0.133	
55		2.65		6.30		3.85		7.14		7.25		7.12	
56		121		117		107		102		114		112	
57		1.40		1.03		0.936		0.977	EMPC	0.930	EMPC	0.874	
58		1.89		1.12	EMPC	0.924		0.987		1.01	EMPC	1.35	
59	59 + 62 + 75	45.0	C	41.8	C	39.8	C	36.0	C	39.2	C	40.0	C
60		70.5		75.3		64.2		60.8		66.6		63.8	
61	61 + 70 + 74 + 76	521	C	518	C	437	C	434	C	493	C	455	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		15.3		14.0		12.0		11.4		12.1		12.7	
64		122		114		102		91.1		101		101	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		397		420		360		345		387		366	
67		14.4		13.0		11.2		10.5		11.4		11.5	
68		3.67		3.14		2.73		2.46		2.97		2.91	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		3.47		3.11		2.73		2.41		2.86		3.11	
73		0.0491	U	0.0491	U	0.0484	U	0.0475	U	0.0499	U	0.0497	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		42.8		44.3		38.4		37.1		43.2		46.3	
78		0.274	U	0.516	U	0.348	U	0.453	U	0.593	U	0.509	U
79		26.3		19.7		17.8		17.6		22.8		23.0	
80		0.247	U	0.484	U	0.326	U	0.425	U	0.556	U	0.476	U
81		2.60		2.51		1.67	EMPC	1.99	EMPC	2.13	EMPC	2.75	
82		22.0		24.5		20.6		21.5		25.1		21.7	
83	83 + 99	806	C	833	C	720	C	717	C	849	C	738	C
84		78.3		79.1		69.4		64.2		78.4		70.9	
85	85 + 116 + 117	198	C	202	C	173	C	166	C	203	C	175	C
86	86 + 87 + 97 + 108 + 119 + 125	768	C	773	C	692	C	668	C	792	C	702	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	91.4	C	94.7	C	82.7	C	75.7	C	91.9	C	83.8	C
89		3.00		2.86		2.47		2.51		2.97		2.47	
90	90 + 101 + 113	1,320	C	1,350	C	1,170	C	1,140	C	1,350	C	1,220	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		163		160		143		133		163		146	
93	93 + 95 + 98 + 100 + 102	862	C	821	C	761	C	701	C	855	C	811	C
94		1.50		1.33		1.22		1.15	EMPC	1.43		1.34	
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		1.27		1.22		1.08		1.06		1.16		1.10	EMPC
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		3.85		3.76		3.24		2.95		3.50		3.46	
104		0.125	EMPC	0.111		0.118	EMPC	0.108	EMPC	0.0910	EMPC	0.126	
105		484		484		419		416		484		535	
106		1.41	U	2.60	U	1.74	U	2.55	U	3.10	U	2.93	U
107	107 + 124	44.2	C	49.1	C	37.6	C	38.7	C	44.5	C	41.6	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		89.0		97.9		82.4		80.1		96.6		83.5	
110	110 + 115	1,120	C	1,120	C	982	C	972	C	1,140	C	999	C
111		0.664		0.778		0.688	EMPC	0.635	EMPC	0.669		0.590	EMPC
112		0.0930	U	0.233	U	0.275	U	0.283	U	0.232	U	0.292	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		29.9		27.2		24.0		23.3		28.7		30.8	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		2,470		2,420		2,180		2,140		2,520		2,770	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		9.18		9.24		8.11		7.90		9.36		8.34	
121		0.513		0.500	EMPC	0.416		0.372		0.435	EMPC	0.446	
122		6.06		6.07		5.46		5.39		6.58		4.83	
123		46.1		43.9		41.8		36.8		46.9		53.2	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		5.35		5.19		4.64		4.74		5.33		5.64	
127		1.90		2.71	U	1.80	U	2.65	U	3.22	U	3.00	U

Table H-9
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Reference P35 08022535TC 2/25/2008		Reference P36 08022536TC 2/25/2008		Reference P37 08022637TC 2/26/2008		Reference P38 08022738TC 2/27/2008		Reference P39 08022739TC 2/27/2008		Reference P40 08022740TC 2/27/2008	
128	128 + 166	178	C	159	C	166	C	144	C	168	C	165	C
129	129 + 138 + 160 + 163	2,590	C	2,240	C	2,170	C	2,050	C	2,370	C	2,440	C
130		92.3		87.2		77.9		75.8		88.1		85.2	
131		9.53		9.27		7.82		7.84		9.01		9.07	
132		207		188		177		171		202		192	
133		25.4		24.1		20.9		18.8		22.3		22.9	
134	134 + 143	40.0	C	38.8	C	35.7	C	35.8	C	41.9	C	38.9	C
135	135 + 151 + 154	405	C	367	C	332	C	321	C	376	C	362	C
136		70.3		63.5		58.6		55.2		64.4		60.0	
137		44.1		37.3		35.6		34.4		46.8		41.8	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	21.9	C	21.9	C	18.8	C	18.1	C	20.1	C	20.3	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		37.2		32.6		30.4		32.8		40.7		40.9	
142		0.452	U	1.57	U	0.460	U	0.935	U	1.18	U	0.673	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		36.4		33.0		30.1		29.4		34.6		32.8	
145		0.231	EMPC	0.158		0.165		0.171	EMPC	0.241	EMPC	0.185	
146		421		374		342		319		389		397	
147	147 + 149	1,460	C	1,290	C	1,190	C	1,190	C	1,360	C	1,360	C
148		2.70		2.53		2.10		1.98		2.54		2.35	
149	147 + 149		C147		C147		C147		C147		C147		C147
150		1.89		1.72		1.46		1.42		1.73		1.60	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.600		0.495		0.475		0.410		0.522		0.447	
153	153 + 168	3,970	C	3,420	C	3,340	C	3,030	C	3,800	C	3,670	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		1.25		1.28		1.06		1.06		1.37		1.27	
156	156 + 157	148	C	154	C	138	C	135	C	166	C	158	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		149		139		125		124		147		142	
159		2.45		1.98		1.41	EMPC	1.54		2.03	EMPC	1.98	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.320	U	1.06	U	0.312	U	0.634	U	0.801	U	0.469	U
162		3.69		3.68		3.38		2.99		3.80		3.76	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		45.7		43.1		38.0		36.9		41.5		41.1	
165		0.791	EMPC	1.26	U	0.825		0.752	U	0.949	U	0.700	EMPC
166	128 + 166		C128		C128		C128		C128		C128		C128
167		139		139		146		123		154		146	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.901	U	1.32	U	0.698	U	0.987	U	1.01	U	1.25	U
170		45.6		52.1		43.2		43.9		54.3		46.5	
171	171 + 173	78.9	C	84.3	C	71.2	C	70.7	C	83.9	C	76.0	C
172		6.78		7.29		6.24		6.01		6.98		6.32	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		47.7		46.2		40.1		38.1		46.9		42.6	
175		10.4		10.4		8.84		8.54		10.3		9.73	
176		34.0		33.6		28.8		28.0		33.0		31.7	
177		205		220		188		181		216		198	
178		101		110		90.5		87.9		107		97.4	
179		140		136		116		113		134		129	
180	180 + 193	474	C	494	C	489	C	414	C	547	C	476	C
181		2.49		2.53		2.23		2.38		2.84		2.31	
182		0.986		1.24		1.11		0.0475	U	1.55		1.61	
183	183 + 185	231	C	228	C	202	C	197	C	243	C	220	C
184		1.83		1.87		1.54		1.59		2.05		1.93	
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0598	U	0.0491	U	0.0484	U	0.0475	U	0.0499	U	0.0680	U
187		733		734		625		625		758		704	
188		1.50		1.52		1.30		1.25		1.39		1.57	
189		2.23		2.40		2.09		1.95		2.34		2.41	
190		89.2		93.8		84.8		80.3		102		88.7	
191		6.52		6.81		6.20		6.01		7.62		6.69	
192		0.0673	U	0.0491	U	0.0484	U	0.0475	U	0.0499	U	0.0766	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		9.99		10.2		9.10		8.85		10.9		10.3	
195		29.8		29.6		26.4		24.4		29.6		28.8	
196		16.3		17.4		14.9		14.6		16.6		15.8	
197	197 + 200	10.0	C	9.91	C	8.47	C	7.81	C	9.62	C	8.90	C
198	198 + 199	38.0	C	37.7	C	32.9	C	29.4	C	36.7	C	33.8	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		24.8		23.7		20.3		19.1		23.0		22.1	
202		71.0		77.3		65.6		60.3		73.2		69.3	
203		131		122		120		101		130		122	
204		0.102		0.129		0.0920	EMPC	0.0820	EMPC	0.150	EMPC	0.123	
205		4.76	EMPC	5.01		4.33		4.04		4.93		4.93	
206		20.6		21.2		18.8		17.1		20.3		19.4	
207		4.26		4.00		3.58		3.37		4.18		3.76	
208		10.1		10.3		9.20		8.06		9.69		8.93	
209		14.1		17.0		15.0		12.8		16.1		13.3	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		34.5	J	33.7	J	30.2	J	28.7	J	34.4	J	33.0	J
Total PCBs as Congeners (KM-based)		34.5	J	33.7	J	30.2	J	28.6	J	34.3	J	32.9	J
Total PCBs as Congeners (KM-based, capped)		34.5	J	33.7	J	30.2	J	28.6	J	34.3	J	32.9	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-9
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Reference P41 08022741TC 2/27/2008		Reference P42 08022742TC 2/27/2008		Reference P85 08030685TC 3/6/2008		Reference P86 08030686TC 3/6/2008		Reference P87 08030687TC 3/6/2008		Forebay - Goose Island P110 09042911OTC 4/29/2009	
Individual Congeners in pg/g (ng/kg), wet weight													
1		2.41		1.95		1.68		1.66		1.84		1.62	
2		4.36		3.40		3.81		3.71		3.68		3.65	
3		0.785		0.610	EMPC	0.811		0.697		0.686	EMPC	0.805	EMPC
4		70.6		54.1		37.1		38.4		38.9		36.8	
5		1.33		1.18		0.997		0.876		0.929		0.700	
6		15.4		11.1		8.17		8.41		8.15		7.82	
7		0.674	EMPC	0.500	EMPC	0.362		0.351	EMPC	0.363		0.480	
8		29.0		23.1		21.6		18.9		19.4		22.6	
9		0.988		0.752	EMPC	0.543		0.470		0.524		0.597	
10		0.982		0.736	EMPC	0.517		0.452		0.524		0.501	EMPC
11		8,070		7,380		7,720		6,790		7,180		4,480	
12	12 + 13	62.5	C EMPC	118	C	109	C	93.8	C	62.3	C EMPC	0.385	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.235	U	0.203	U	0.241	U	0.263	U	0.245	U	0.366	U
15		21.8		20.1	EMPC	30.8	EMPC	32.8	EMPC	17.8		36.9	
16		105		85.4		75.7		74.4		72.0		53.7	
17		98.9		75.9		67.8		65.8		59.3		49.7	
18	18 + 30	236	C	186	C	159	C	156	C	151	C	116	C
19		11.7		9.16		7.22		7.21		7.72		9.19	
20	20 + 28	122	C	101	C	94.5	C	81.9	C	80.3	C	110	C
21	21 + 33	60.1	C	49.4	C	46.5	C	41.4	C	42.1	C	56.2	C
22		131		109		104		98.5		93.2		102	
23		0.116		0.116	U	0.0965	U	0.0738	U	0.114	EMPC	0.127	EMPC
24		1.44		1.40		1.08		1.22		1.08		1.35	
25		11.2		9.22		8.62		7.68		7.61		10.1	
26	26 + 29	23.6	C	18.7	C	16.8	C	15.3	C	15.6	C	21.0	C
27		24.9		20.2		18.2		17.2		16.4		13.0	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		78.4		64.1		59.0		50.6		49.2		76.2	
32		9.77		7.08		6.09		5.53		5.44		9.78	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.340		0.235	EMPC	0.256		0.225		0.271		0.325	
35		14.8		13.3		13.1		11.3		11.6		11.0	
36		3.81		3.47		3.60		2.86		2.91		2.49	
37		52.1		45.1		43.2		39.1		37.7		47.7	
38		0.946		0.923		1.02		0.888		0.951		0.867	
39		2.85		2.34	J	2.43		2.18	J	1.99		2.04	
40	40 + 41 + 71	98.7	C	81.9	C	78.2	C	74.3	C	71.8	C	102	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		178		151		165		148		137		107	
43		7.19		6.16		5.06		4.80		5.18		6.41	
44	44 + 47 + 65	678	C	598	C	619	C	567	C	538	C	399	C
45	45 + 51	27.8	C	22.6	C	21.1	C	20.5	C	20.0	C	22.4	C
46		4.82		3.86		3.48		3.45		3.27		5.07	EMPC
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		81.7		67.9		67.4		64.8		58.4		57.7	
49	49 + 69	139	C	119	C	121	C	113	C	104	C	120	C
50	50 + 53	59.0	C	50.4	C	46.3	C	46.7	C	44.9	C	33.3	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		419		368		346		332		329		322	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.144		0.108	EMPC	0.0690		0.0660	EMPC	0.0880	EMPC	0.131	
55		6.01		8.15		5.80		7.86		7.59		8.48	
56		112		98.9		97.8		97.1		92.6		109	
57		1.01		0.723		0.802		0.776	EMPC	0.662		1.01	
58		1.63		1.37	EMPC	1.30	EMPC	1.14		1.07		1.12	
59	59 + 62 + 75	38.9	C	33.5	C	32.2	C	31.2	C	29.8	C	29.6	C
60		64.9		58.9		58.7		54.0		50.6		60.1	
61	61 + 70 + 74 + 76	458	C	411	C	406	C	373	C	346	C	394	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		13.0		11.4		11.5		10.5		9.72		10.5	
64		99.7		85.8		85.3		79.1		74.5		94.4	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		368		332		332		313		287		295	
67		11.3		9.74		9.98		9.56		8.51		9.20	
68		2.91		2.60		2.79		2.62		2.52		2.75	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		3.04		2.68		2.75		2.43		2.44		2.59	
73		0.0495	U	0.0481	U	0.0487	U	0.0452	U	0.0476	U	0.0585	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		46.8		41.4		40.8		38.4		35.7		33.7	
78		0.453	U	0.522	U	0.433	U	0.482	U	0.435	U	0.714	U
79		22.0		20.3		20.9		19.5		18.7		15.8	
80		0.423	U	0.488	U	0.405	U	0.451	U	0.407	U	0.624	U
81		2.21		2.03		1.88	EMPC	1.80		1.51	EMPC	2.17	EMPC
82		20.9		18.8		18.8		16.8		17.1		29.3	
83	83 + 99	750	C	674	C	686	C	629	C	590	C	529	C
84		73.1		64.4		62.4		56.0		52.7		64.7	
85	85 + 116 + 117	174	C	158	C	164	C	145	C	136	C	134	C
86	86 + 87 + 97 + 108 + 119 + 125	707	C	645	C	684	C	596	C	578	C	489	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	85.7	C	75.1	C	77.8	C	71.0	C	65.9	C	59.6	C
89		2.53		2.25		2.36		2.06		2.01		2.82	
90	90 + 101 + 113	1,260	C	1,130	C	1,140	C	1,030	C	965	C	845	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		152		136		129		116		113		110	
93	93 + 95 + 98 + 100 + 102	829	C	746	C	769	C	687	C	682	C	500	C
94		1.30	EMPC	1.15		1.10		1.03		1.08	EMPC	1.25	EMPC
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		1.00		0.923		0.913		0.785		0.760		0.989	
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		3.35		3.27		3.13		2.96		2.68		2.35	
104		0.128	EMPC	0.0652	U	0.0564	U	0.0780		0.0500	EMPC	0.0970	
105		556		488		478		440		414		352	
106		3.39	U	3.30	U	4.08	U	3.05	U	2.77	U	0.935	U
107	107 + 124	41.6	C	36.4	C	35.8	C	32.9	C	30.8	C	28.9	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		88.0		79.4		76.9		70.2		66.6		60.4	
110	110 + 115	999	C	910	C	877	C	809	C	779	C	786	C
111		0.464		0.639	EMPC	0.582	EMPC	0.385		0.413		0.344	EMPC
112		0.308	U	0.286	U	0.271	U	0.244	U	0.262	U	0.173	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		33.0		28.1		27.1		24.9		24.7		22.8	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		2,820		2,530		2,640		2,290		2,270		1,590	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		8.56		8.04		7.81		6.36		6.68		5.09	
121		0.362		0.415	EMPC	0.416		0.305	EMPC	0.289		0.287	EMPC
122		6.65		6.11	EMPC	4.58	U	5.52	EMPC	6.59		8.27	
123		50.6		43.8		50.0		41.2		40.9		28.0	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		5.36		5.12		5.88	U	4.46		4.51		3.07	
127		3.47	U	3.38	U	4.17	U	3.12	U	2.84	U	1.64	

Table H-9
Sediment PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS1	Reference P41 08022741TC 2/27/2008		Reference P42 08022742TC 2/27/2008		Reference P85 08030685TC 3/6/2008		Reference P86 08030686TC 3/6/2008		Reference P87 08030687TC 3/6/2008		Forebay - Goose Island P110 09042911OT C 4/29/2009	
128	128 + 166	171	C	154	C	150	C	140	C	127	C	141	C
129	129 + 138 + 160 + 163	2,470	C	2,260	C	2,270	C	2,060	C	1,990	C	1,640	C
130		87.7		78.3		77.8		71.3		64.1		61.3	
131		9.29		8.15		7.96		7.22		6.33		7.67	
132		193		171		165		156		146		162	
133		23.6		20.8		20.9		17.3		16.9		16.7	
134	134 + 143	39.1	C	34.5	C	34.1	C	31.1	C	28.6	C	31.9	C
135	135 + 151 + 154	355	C	324	C	316	C	282	C	268	C	270	C
136		59.7		53.7		53.6		50.0		44.4		48.9	
137		40.2		37.3		32.6		32.6		32.6		32.7	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	20.4	C	17.8	C	18.6	C	17.1	C	15.3	C	14.8	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		44.8		40.7		39.1		38.3		39.6		45.1	
142		1.09	U	1.14	U	1.05	U	1.10	U	0.806	U	0.913	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		33.6		29.4		30.0		26.5		23.5		26.2	
145		0.209	EMPC	0.200		0.210	EMPC	0.220	EMPC	0.173		0.256	
146		395		361		353		302		314		270	
147	147 + 149	1,350	C	1,240	C	1,230	C	1,140	C	1,080	C	930	C
148		2.32		2.10		2.04		1.61		1.64		1.49	
149	147 + 149		C147		C147		C147		C147		C147		C147
150		1.57		1.50		1.45		1.38		1.23		1.12	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.421		0.426		0.448		0.383		0.375		0.447	
153	153 + 168	3,630	C	3,380	C	4,070	C	3,060	C	3,190	C	2,540	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		1.35		1.18	EMPC	1.09		0.946	EMPC	0.846		0.907	
156	156 + 157	161	C	145	C	137	C	123	C	125	C	96.9	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		144		129		126		117		108		103	
159		2.16		1.72		1.61	EMPC	1.53	EMPC	1.51		2.45	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.761	U	0.793	U	0.733	U	0.767	U	0.561	U	0.641	U
162		3.56		3.07		2.68		2.74		2.41	EMPC	2.92	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		43.5		39.1		37.0		34.0		32.9		37.4	
165		0.868	U	0.905	U	0.836	U	0.875	U	0.640	U	0.733	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		146		137		165		123		131		92.5	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		1.03	U	1.01	U	1.73	U	1.17	U	1.57	U	1.08	U
170		47.9		43.4		37.0		37.3		35.6		38.7	
171	171 + 173	78.5	C	70.4	C	68.0	C	64.4	C	56.0	C	52.7	C
172		6.59		6.01		5.19		5.14		4.85		6.10	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		43.3		40.1		34.6		34.5		32.5		39.6	
175		10.1		8.98		8.11		7.15		6.96		7.22	
176		32.0		29.5		27.3		25.5		23.4		22.0	
177		206		188		180		169		153		139	
178		99.9		90.4		87.0		78.2		73.3		65.3	
179		131		119		116		108		97.9		87.2	
180	180 + 193	476	C	458	C	474	C	390	C	384	C	295	C
181		2.46		2.22	EMPC	2.07		1.97		2.17		1.72	
182		1.57	EMPC	1.25		1.28	EMPC	1.20	EMPC	1.21	EMPC	0.144	U
183	183 + 185	223	C	209	C	189	C	171	C	168	C	153	C
184		1.74		1.53		1.41		1.12		1.13		1.06	
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0649	U	0.0481	U	0.0533	U	0.0452	U	0.0550	U	0.122	U
187		705		660		614		555		541		477	
188		1.48		1.41		1.48		1.16		1.24		1.09	
189		2.37		2.17		2.01		1.71		1.72		1.57	
190		89.6		84.7		79.4		72.8		72.4		52.6	
191		7.04		6.73		5.99		5.43		5.45		5.48	
192		0.0730	U	0.0481	U	0.0600	U	0.0467	U	0.0618	U	0.129	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		10.6		10.4		7.99		7.57		8.29		8.03	
195		30.2		27.1		24.5		25.0		21.6		17.8	
196		16.3		14.7		12.2		12.0		11.7		11.4	
197	197 + 200	9.36	C	8.25	C	7.71	C	6.94	C	6.61	C	6.84	C
198	198 + 199	35.9	C	32.0	C	29.0	C	29.2	C	27.6	C	28.2	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		23.2		20.2		19.6		16.8		16.7		13.5	
202		72.1		64.9		67.4		58.8		58.2		44.5	
203		122		115		117		97.3		99.5		74.5	
204		0.0960	EMPC	0.0680		0.0840		0.0820	EMPC	0.109	EMPC	0.0634	U
205		5.16		4.65		4.26		4.02		3.78		2.87	
206		20.1		17.7		16.5		15.9		15.7		10.9	
207		3.99		3.45		3.14		2.96		3.02		2.25	
208		9.49		8.61		7.81		7.63		7.36		5.71	
209		14.3		12.5		11.9		10.6		10.6		7.10	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		32.9	J	29.8	J	30.8	J	27.0	J	26.9	J	21.4	J
Total PCBs as Congeners (KM-based)		32.8	J	29.7	J	30.7	J	27.0	J	26.9	J	21.5	J
Total PCBs as Congeners (KM-based, capped)		32.8	J	29.7	J	30.7	J	27.0	J	26.9	J	21.4	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-10
Crayfish PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P01-CF 08021901CF 2/19/2008		Forebay P04-CF 08021904CF 2/19/2008		Forebay P05-CF 08021505CF 2/15/2008		Forebay P06-CF 08021406CF 2/14/2008		Forebay P07-CF 08021407CF 2/14/2008		Forebay P08-CF 08021408CF 2/14/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		0.135		0.196		0.260		0.243		0.255	EMPC	0.144	EMPC
2		0.0780		0.109		0.146		0.236		0.0531	U	0.121	EMPC
3		0.175	EMPC	0.230		0.192		0.215	EMPC	0.220	EMPC	0.167	
4		0.474	U	0.535	U	2.29		0.919		0.706	U	0.462	U
5		0.0959	U	0.163	U	0.101	U	0.0854	U	0.137	U	0.139	U
6		0.235		0.248		0.217		0.235		0.239		0.156	
7		0.0910		0.144	U	0.0960	EMPC	0.0757	U	0.121	U	0.123	U
8		1.05	U	0.991	U	0.895	U	0.661	U	0.900	U	0.505	U
9		0.101		0.164	EMPC	0.184	EMPC	0.0870	EMPC	0.121	U	0.123	U
10		0.0826	U	0.140	U	0.114	EMPC	0.0736	U	0.118	U	0.120	U
11		50.1		30.2		36.9		75.9		16.4		31.0	
12	12 + 13	0.0920	C U	0.156	C U	0.0967	C U	0.0819	C U	0.131	C U	0.134	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.0888	U	0.151	U	0.0934	U	0.0791	U	0.127	U	0.129	U
15		1.98	EMPC	1.35		3.55	EMPC	2.50	EMPC	2.44	EMPC	1.35	EMPC
16		0.530		0.369	EMPC	0.411	EMPC	0.655		0.373	EMPC	0.328	EMPC
17		0.510		0.537		1.11		0.806		0.504		0.314	EMPC
18	18 + 30	1.71	C U	1.04	C U	2.12	C U	2.31	C U	1.27	C U	1.06	C U
19		0.131	U	0.189	U	0.847		0.235	U	0.179	U	0.121	U
20	20 + 28	2.63	C U	2.58	C U	3.24	C	3.00	C	2.13	C U	1.44	C U
21	21 + 33	0.746	C U	0.687	C U	0.804	C U	0.774	C U	0.507	C U	0.386	C U
22		0.544		0.568		0.489		0.695		0.501	EMPC	0.369	EMPC
23		0.0636	U	0.0652	U	0.0634	U	0.0497	U	0.0696	U	0.0669	U
24		0.0489	U	0.0592	U	0.0500	U	0.0497	U	0.0785	U	0.0498	U
25		0.0860	EMPC	0.177	EMPC	0.256		0.169	EMPC	0.115	EMPC	0.0750	EMPC
26	26 + 29	0.443	C U	0.474	C U	1.22	C	0.580	C	0.336	C U	0.283	C U
27		0.107	EMPC	0.233		0.348		0.332		0.106	EMPC	0.0560	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		1.29	U	1.28	U	1.63	U	1.19	U	1.06	U	0.701	U
32		0.289		0.266		0.453		0.246		0.327		0.145	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.0649	U	0.0665	U	0.0647	U	0.0497	U	0.0710	U	0.0682	U
35		0.271	EMPC	0.143		0.280		0.351		0.0690	U	0.124	EMPC
36		0.0700	EMPC	0.0569	U	0.0554	U	0.0920		0.0607	U	0.0584	U
37		3.31		2.55		4.15		4.29		8.02		1.79	
38		0.0590	U	0.0606	U	0.0589	U	0.0497	U	0.0646	U	0.0621	U
39		0.0620	U	0.0636	U	0.151		0.0497	U	0.0678	U	0.0652	U
40	40 + 41 + 71	0.487	C EMPC	0.987	C	1.34	C	1.57	C	0.751	C	0.461	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		0.608		1.44		0.791		2.24		0.591		0.577	EMPC
43		0.0514	U	0.0696	U	0.182	EMPC	0.143	EMPC	0.109	EMPC	0.0716	U
44	44 + 47 + 65	4.56	C	12.4	C	7.96	C	24.0	C	6.23	C	4.23	C
45	45 + 51	0.141	C	0.258	C	0.431	C	0.311	C	0.250	C	0.159	C EMPC
46		0.0489	U	0.0750		0.149		0.0710		0.0755	U	0.0673	U
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		0.291	U	0.372	U	0.431	U	0.672		0.395	U	0.220	U
49	49 + 69	0.743	C	2.91	C	3.89	C	2.79	C	1.62	C	0.776	C
50	50 + 53	0.275	C EMPC	0.573	C	1.02	C	1.14	C	0.346	C	0.219	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		2.76		10.0		16.9		17.8		4.46		2.56	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0489	U	0.0641	U	0.0520		0.0497	U	0.0586	U	0.0498	U
55		0.157	U	0.259	U	0.135	U	0.112	U	0.330	U	0.194	U
56		0.544	U	1.60		1.47		2.13		1.23		0.383	U
57		0.143	U	0.235	U	0.141	EMPC	0.101	U	0.300	U	0.176	U
58		0.167	U	0.275	U	0.143	U	0.119	U	0.351	U	0.206	U
59	59 + 62 + 75	0.158	C U	0.119	C U	0.192	C U	0.396	C EMPC	0.163	C U	0.0960	C U
60		0.840	EMPC	1.78		1.59		1.89		1.00	EMPC	0.474	U
61	61 + 70 + 74 + 76	13.9	C	44.6	C	213	C	140	C	109	C	16.1	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		1.70		10.6		23.5		33.8		14.6		5.17	
64		0.494	U	1.51		2.10		1.18		0.819	U	0.473	U
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		13.2		35.7		57.7		96.7		142		18.0	
67		0.174		0.237	U	0.292	EMPC	0.459		0.303	U	0.178	U
68		0.353		1.02	EMPC	1.80		0.911		0.539		0.741	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		0.130	U	0.214	U	0.250		0.180		0.273	U	0.160	U
73		0.0489	U	0.0496	U	0.0500	U	0.0497	U	0.0500	EMPC	0.0498	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		3.76		6.54		14.8		20.7		10.5		4.33	
78		0.166	U	0.273	U	0.142	U	0.118	U	0.348	U	0.204	U
79		0.516	EMPC	2.67		0.870		2.47		0.711		0.529	
80		0.142	U	0.234	U	0.122	U	0.101	U	0.299	U	0.175	U
81		0.239	EMPC	0.446		0.823	EMPC	1.32		0.361	U	0.228	U
82		0.396	EMPC	2.73		1.96		1.45		0.831	EMPC	0.203	EMPC
83	83 + 99	18.6	C	92.8	C	69.0	C	87.2	C	276	C	37.8	C
84		0.470	U	4.02		4.02		2.46		0.894		0.519	U
85	85 + 116 + 117	6.37	C	123	C	92.4	C	347	C	94.4	C	28.7	C
86	86 + 87 + 97 + 108 + 119 + 125	7.22	C	42.5	C	10.0	C	39.8	C	14.6	C	9.11	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	0.513	C	3.48	C	2.50	C	2.15	C	1.08	C	0.504	C
89		0.0615	U	0.0834	U	0.119		0.100	U	0.155	U	0.131	U
90	90 + 101 + 113	11.6	C	57.7	C	60.8	C	169	C	70.6	C	17.2	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		1.83		6.84		5.38		6.39		2.43		1.76	
93	93 + 95 + 98 + 100 + 102	6.85	C	34.1	C	18.1	C	40.1	C	11.6	C	7.46	C
94		0.0611	U	0.0828	U	0.0893	U	0.0997	U	0.154	U	0.130	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.0489	U	0.0496	U	0.104	EMPC	0.0497	U	0.0565	U	0.0498	U
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		0.0500	U	0.189		0.166		0.110		0.171		0.106	U
104		0.0489	U	0.0496	U	0.0500	U	0.0497	U	0.0796	U	0.0498	U
105		14.6		93.1		56.6		86.3	EMPC	134		34.7	
106		0.481	U	2.58	U	2.31	U	4.51	U	5.36	U	0.856	U
107	107 + 124	0.887	C	3.94	C	2.61	C	4.95	C U	5.89	C U	2.35	C EMPC
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		16.1		301		401		1,040		227		57.5	
110	110 + 115	4.32	C	31.8	C	19.4	C	24.7	C	9.47	C	4.96	C
111		0.229	EMPC	0.605		0.661		0.842	EMPC	0.194		0.238	
112		0.0489	U	0.0645	U	0.0695	U	0.0777	U	0.120	U	0.101	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		6.61		351		355		804		121		48.4	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		206		3,520		6,340		14,000		4,400		847	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		1.10		2.95		2.51		3.74		1.17		1.20	
121		0.0489	U	0.0639	U	0.0689	U	0.0770	U	0.119	U	0.100	U
122		0.595	U	3.19	U	2.85	U	5.57	U	6.62	U	1.06	U
123		4.75		247		206		460		69.0		30.2	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		0.800		3.51	U	3.60		7.83		2.60	U	1.30	U
127		0.560	U	34.8		29.5		78.5		15.2		3.46	

Table H-10
Crayfish PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P01-CF 08021901CF 2/19/2008		Forebay P04-CF 08021904CF 2/19/2008		Forebay P05-CF 08021505CF 2/15/2008		Forebay P06-CF 08021406CF 2/14/2008		Forebay P07-CF 08021407CF 2/14/2008		Forebay P08-CF 08021408CF 2/14/2008	
128	128 + 166	3.34	C	132	C	59.7	C	112	C	28.7	C	11.4	C
129	129 + 138 + 160 + 163	136	C	1,490	C	1,250	C	3,840	C	983	C	260	C
130		6.23		13.1		15.7		31.0		89.7		11.2	
131		0.160	U	0.521		0.226	U	0.281	U	0.632	U	0.164	U
132		1.64	EMPC	8.32		4.01		3.69		3.12		1.25	
133		3.90		11.3		32.3		39.5		26.8		5.97	
134	134 + 143	0.164	C U	2.94	C	0.988	C	0.288	C U	0.648	C U	0.907	C
135	135 + 151 + 154	7.02	C	13.2	C	11.8	C	8.25	C	34.1	C	5.84	C
136		0.679		3.94		3.02		1.79		27.8		1.05	
137		11.9		698		662		1,770		291		83.3	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	0.444	C EMPC	1.84	C	1.40	C	0.260	C U	13.9	C	0.878	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		0.154	U	0.204	U	0.218	U	0.271	U	0.609	U	0.158	U
142		0.166	U	0.220	U	0.235	U	0.292	U	0.657	U	0.171	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		0.433		1.45		0.977		0.957		0.853	EMPC	0.461	
145		0.0489	U	0.0496	U	0.0514	U	0.0497	U	0.0641	U	0.0550	U
146		52.3		483		601		1,790		323		101	
147	147 + 149	11.8	C	52.2	C	27.4	C	92.6	C	57.3	C	14.5	C
148		0.0910		0.0840		0.113		0.0850	EMPC	0.737		0.0724	U
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.0489	U	0.0820	EMPC	0.0500	U	0.0497	U	0.317		0.0508	U
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.0489	U	0.0496	U	0.0500	U	0.0497	U	0.0532	U	0.0498	U
153	153 + 168	242	C	2,060	C	2,870	C	7,730	C	2,320	C	570	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.0820		0.0496	U	0.112		0.191	EMPC	0.190	EMPC	0.0770	
156	156 + 157	38.2	C	2,280	C	1,620	C	3,910	C	655	C	211	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		2.61		10.5		5.41		7.03		9.62		3.49	
159		0.198	EMPC	0.360	EMPC	0.177	U	0.220	U	1.01	EMPC	0.189	EMPC
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.117	U	0.155	U	0.165	U	0.205	U	0.462	U	0.120	U
162		1.46		38.2		31.8		74.6		13.1		4.77	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		0.124	U	0.164	U	0.175	U	0.217	U	0.489	U	0.127	U
165		0.133	U	0.524		0.866	EMPC	0.234	U	0.528	U	0.172	EMPC
166	128 + 166		C128		C128		C128		C128		C128		C128
167		23.0		1,180		629		1,530		222		97.1	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.597	U	2.95	U	1.80	U	1.20	U	2.22	U	0.487	U
170		21.6		137		160		326		239		29.3	
171	171 + 173	2.99	C	5.30	C	4.06	C	3.04	C	18.8	C	1.86	C
172		2.97		5.77		10.3		11.5		24.4		3.38	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		2.39		8.43		6.02		3.65		16.2		2.45	EMPC
175		0.921		1.56		2.38		3.30		5.92		1.01	
176		0.531		1.08		0.443	EMPC	0.351		1.39		0.299	
177		22.1		34.2		25.9		36.4		58.5		17.4	
178		7.12		9.28		13.6		10.2		21.1		6.02	
179		1.62		2.86		2.26		1.89		2.80		1.62	
180	180 + 193	143	C	1,710	C	0.0552	C U	2,450	C	495	C	194	C
181		0.776	EMPC	28.1		14.7		30.6		8.48		2.06	
182		0.0596	U	0.0594	U	0.0632	U	0.0593	U	1.47		0.0879	U
183	183 + 185	16.8	C	28.4	C	40.5	C	42.5	C	81.3	C	13.6	C
184		0.0940		0.0496	U	0.0500	U	0.0497	U	0.147	EMPC	0.0613	U
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0489	U	0.0496	U	0.0500	U	0.0497	U	0.0574	U	0.0680	U
187		165		792		424		896		238		160	
188		0.349	EMPC	1.27		0.657		0.755		0.422		0.317	
189		2.69		68.3		41.4		82.1		16.0		5.48	
190		14.1		130		49.4		40.3		51.9		13.8	
191		1.75		13.3		13.6		33.6		11.6		3.01	
192		0.0560	U	0.0558	U	0.0593	U	0.0557	U	0.0697	U	0.0826	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		11.0		39.5		36.3		37.8		47.1		9.33	
195		7.44		19.1		14.7		12.6		15.9		4.55	
196		9.34		35.9		19.8		22.1		27.4		6.12	
197	197 + 200	1.05	C	2.37	C	1.36	C	0.678	C	3.82	C	0.475	C
198	198 + 199	19.0	C	57.7	C	38.6	C	38.9	C	62.9	C	14.1	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		3.70		8.46		5.73		4.90		8.53		2.42	
202		2.79		3.73		3.95		3.21		11.0		2.74	
203		16.1		43.4		18.8		13.0		44.2		9.43	
204		0.0489	U	0.0615	U	0.0572	U	0.0702	U	0.0597	U	0.0720	U
205		0.689	EMPC	1.50		1.37		0.796		2.02		0.545	EMPC
206		4.40		6.06		7.23		4.38		25.4		3.63	
207		1.88		4.24		2.49		1.54		4.31		1.03	
208		2.57		4.14		3.50		2.98		7.18		1.91	
209		5.07		4.84		5.75		4.94		4.45		3.19	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		1.46	J	16.8	J	16.9	J	42.7	J	12.5	J	3.14	J
Total PCBs as Congeners (KM-based)		1.44	J	16.9	J	16.9	J	42.6	J	12.4	J	3.12	J
Total PCBs as Congeners (KM-based, capped)		1.44	J	16.8	J	16.9	J	42.6	J	12.4	J	3.12	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-10
Crayfish PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P13-CF 08021413CF 2/14/2008		Forebay P14-CF 08022014CF 2/20/2008		Forebay P15-CF 08021915CF 2/19/2008		Forebay P16-CF 08022216CF 2/22/2008		Forebay P17-CF 08021917CF 2/19/2008		Forebay P18-CF 08021918CF 2/19/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		0.138		0.134		0.153		0.224		0.151		0.128	EMPC
2		0.0970	EMPC	0.123	EMPC	0.139		0.175		0.108	EMPC	0.139	EMPC
3		0.193	EMPC	0.209	EMPC	0.203	EMPC	0.191	EMPC	0.239	EMPC	0.227	EMPC
4		0.224	U	0.275	U	0.520	U	0.884	U	0.483	U	0.308	U
5		0.156	U	0.114	U	0.129	U	0.745	U	0.163	U	0.161	U
6		0.138	U	0.147		0.192		0.653	U	0.145	U	0.143	U
7		0.142	U	0.104	U	0.118	U	0.655	U	0.149	U	0.147	U
8		0.339	U	0.579	U	0.782	U	0.585	U	0.530	U	0.466	U
9		0.140	U	0.102	U	0.116	U	0.654	U	0.146	U	0.144	U
10		0.144	U	0.105	U	0.120	U	0.648	U	0.151	U	0.149	U
11		12.0		16.7		32.3		56.4		37.9		41.9	
12	12 + 13	0.156	C U	0.114	C U	0.130	C U	0.714	C U	0.164	C U	0.162	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.147	U	0.108	U	0.122	U	0.677	U	0.155	U	0.152	U
15		0.931		0.832		3.11		1.03	U	1.02	EMPC	1.15	
16		0.172		0.321		0.365		0.378	EMPC	0.409	EMPC	0.278	
17		0.143	EMPC	0.340	EMPC	0.341		0.389		0.488		0.306	EMPC
18	18 + 30	0.460	C U	0.668	C U	1.16	C U	1.30	C U	1.03	C U	0.828	C U
19		0.0964	U	0.0679	U	0.0970	U	0.157	U	0.104	U	0.147	U
20	20 + 28	1.27	C U	1.87	C U	2.61	C U	2.21	C U	1.91	C U	2.07	C U
21	21 + 33	0.395	C U	0.507	C U	0.743	C U	0.480	C U	0.481	C U	0.544	C U
22		0.320		0.399	EMPC	0.564		0.362		0.786		0.492	EMPC
23		0.0692	U	0.0515	U	0.0709	U	0.0981	U	0.0862	U	0.0598	U
24		0.0682	U	0.0509	U	0.0683	U	0.0802	U	0.0615	U	0.0606	U
25		0.0618	U	0.0630		0.122		0.101	EMPC	0.0850		0.0535	U
26	26 + 29	0.239	C U	0.247	C U	0.479	C U	0.488	C U	0.310	C U	0.358	C U
27		0.0659	U	0.0520	EMPC	0.103		0.0748	U	0.0850	EMPC	0.0586	U
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		0.607	U	0.932	U	1.14	U	1.05	U	1.03	U	0.880	U
32		0.125	EMPC	0.199		0.239		0.185		0.148		0.161	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.0709	U	0.0527	U	0.0726	U	0.0998	U	0.0883	U	0.0613	U
35		0.0870	EMPC	0.0680	EMPC	0.120	EMPC	0.157		0.0961	U	0.149	
36		0.0672	U	0.0500	U	0.0689	U	0.0950	EMPC	0.0838	U	0.0582	U
37		1.52		1.01		5.58		3.88		1.51		2.84	
38		0.0692	U	0.0515	U	0.0709	U	0.0956	U	0.0862	U	0.0598	U
39		0.149		0.0567	U	0.0781	U	0.106	U	0.0950	U	0.0659	U
40	40 + 41 + 71	0.343	C	0.435	C	0.627	C	0.502	C	0.666	C	0.534	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		0.154	U	0.174	U	0.464		0.409	U	0.916		0.369	U
43		0.0837	U	0.0849	U	0.0880	U	0.118	U	0.0942	U	0.0936	U
44	44 + 47 + 65	1.13	C	1.28	C	2.98	C	3.12	C	3.28	C	2.17	C
45	45 + 51	0.129	C EMPC	0.0900	C	0.144	C	0.261	C EMPC	0.194	C	0.184	C
46		0.0852	U	0.0864	U	0.0896	U	0.110	U	0.0959	U	0.0953	U
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		0.145	U	0.184	U	0.189	U	0.275	U	0.454	U	0.204	U
49	49 + 69	0.603	C	0.659	C	0.716	C	0.892	C EMPC	1.36	C	0.738	C EMPC
50	50 + 53	0.137	C	0.107	C EMPC	0.195	C	0.194	C	0.212	C	0.124	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		1.56		1.72		2.28		2.58		2.72		2.14	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0644	U	0.0578	U	0.0616	U	0.0711	U	0.0655	U	0.0733	U
55		0.191	U	0.109	U	0.234	U	0.268	U	0.140	U	0.130	U
56		0.287	U	0.329	U	0.414	U	0.612	U	0.822	U	0.427	U
57		0.172	U	0.0979	U	0.211	U	0.254	U	0.126	U	0.117	U
58		0.187	U	0.106	U	0.229	U	0.285	U	0.137	U	0.127	U
59	59 + 62 + 75	0.0960	C U	0.0573	C U	0.151	C U	0.130	C U	0.124	C U	0.0850	C U
60		0.222	U	0.282	U	0.462	U	0.691		0.726		0.619	
61	61 + 70 + 74 + 76	6.77	C	4.72	C	7.95	C	14.0	C	8.04	C	8.64	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		1.75		1.24		1.88		2.48		0.615		1.91	
64		0.339	U	0.458	U	0.563	U	0.578	U	0.892	U	0.488	U
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		7.05		3.86		8.47		19.0		6.72		10.8	
67		0.161	U	0.0917	U	0.197	U	0.250	U	0.118	U	0.110	U
68		0.870	EMPC	0.424		0.520		0.741		0.225		0.629	EMPC
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		0.165	U	0.0936	U	0.201	U	0.234	U	0.121	U	0.112	U
73		0.0590	U	0.0598	U	0.0620	U	0.0715	U	0.0664	U	0.0659	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		2.11		1.74		4.38		5.14		1.57		4.12	
78		0.195	U	0.111	U	0.238	U	0.286	U	0.143	U	0.133	U
79		0.150	U	0.0854	U	0.227	EMPC	0.240	EMPC	0.189	EMPC	0.206	EMPC
80		0.167	U	0.0951	U	0.205	U	0.228	U	0.123	U	0.114	U
81		0.215	U	0.125	U	0.273	U	0.289	U	0.164	U	0.313	EMPC
82		0.206	EMPC	0.198		0.237	EMPC	0.259	EMPC	0.372	EMPC	0.224	
83	83 + 99	7.35	C	3.17	C	7.66	C	18.9	C	8.36	C	9.81	C
84		0.402	U	0.453	U	0.597	EMPC	0.533	U	0.657		0.419	U
85	85 + 116 + 117	4.58	C	3.10	C	4.28	C	6.45	C	2.80	C	5.87	C
86	86 + 87 + 97 + 108 + 119 + 125	1.73	C	1.62	C U	3.39	C	4.91	C	5.21	C	2.83	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	0.256	C U	0.290	C U	0.375	C	0.276	C U	0.788	C	0.343	C
89		0.0941	U	0.0759	U	0.0950	U	0.108	U	0.129	U	0.0851	U
90	90 + 101 + 113	5.43	C	4.32	C	6.03	C	9.84	C	9.08	C	7.35	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		0.626	EMPC	0.515	EMPC	0.781	EMPC	1.98		1.32		0.900	
93	93 + 95 + 98 + 100 + 102	1.88	C U	1.82	C U	3.68	C	7.50	C	4.28	C	3.13	C
94		0.0971	U	0.0783	U	0.0980	U	0.111	U	0.133	U	0.0878	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.0491	U	0.0726	U	0.0500	U	0.0711	U	0.0520	U	0.0491	U
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		0.0806	U	0.0651	U	0.0814	U	0.0926	U	0.111	U	0.0730	U
104		0.0541	U	0.0771	U	0.0501	U	0.0711	U	0.0559	U	0.0532	U
105		4.89	EMPC	3.67	EMPC	7.46		13.2		6.36		7.37	
106		0.193	U	0.168	U	0.285	U	0.778	U	0.278	U	0.339	U
107	107 + 124	0.441	C	0.176	C U	0.694	C EMPC	1.15	C	0.363	C	0.577	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		10.7		10.9		9.05		16.2		5.55		16.3	
110	110 + 115	2.42	C	2.52	C	3.48	C	3.06	C	7.22	C	3.33	C
111		0.303		0.283		0.159	EMPC	0.326		0.131		0.311	
112		0.0655	U	0.0529	U	0.0662	U	0.0826	U	0.0900	U	0.0593	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		3.70		5.69		4.07		6.61		2.14		6.10	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		95.5		112		122		248		82.4		173	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		0.985		1.20		0.778		1.41		0.561		1.32	
121		0.0702	U	0.0567	U	0.0708	U	0.0799	U	0.0964	U	0.0635	U
122		0.214	U	0.186	U	0.316	U	0.899	U	0.308	U	0.376	U
123		2.42		5.81		3.37		6.82		2.11		5.06	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		0.306		0.238		0.468		1.10	U	0.397	U	0.469	
127		0.438		0.494	EMPC	0.340	U	0.852	U	0.331	U	0.540	EMPC

Table H-10
Crayfish PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P13-CF 08021413CF 2/14/2008		Forebay P14-CF 08022014CF 2/20/2008		Forebay P15-CF 08021915CF 2/19/2008		Forebay P16-CF 08022216CF 2/22/2008		Forebay P17-CF 08021917CF 2/19/2008		Forebay P18-CF 08021918CF 2/19/2008	
128	128 + 166	1.63	C EMPC	1.61	C	1.91	C	2.59	C	2.30	C EMPC	2.21	C
129	129 + 138 + 160 + 163	60.4	C	54.7	C	69.1	C	122	C	44.8	C	99.8	C
130		3.21		0.988	EMPC	3.58		7.22		1.47		4.35	
131		0.147	U	0.226	U	0.207	U	0.185	U	0.188	U	0.141	U
132		0.857		0.819		0.999		0.945	EMPC	1.72		0.871	
133		2.55		1.60		1.64		3.42		1.11		2.83	
134	134 + 143	0.143	C U	0.220	C U	0.450	C EMPC	0.185	C U	0.457	C EMPC	0.431	C
135	135 + 151 + 154	0.0574	C U	1.54	C	3.26	C	7.56	C	3.32	C	3.24	C
136		0.433		0.329		0.548		1.05		0.678		0.561	EMPC
137		6.57		9.31		5.97		10.9		4.34		10.1	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	0.236	C	0.203	C U	0.187	C	0.435	C EMPC	0.297	C EMPC	0.310	C EMPC
140	139 + 140		C139		C139		C139		C139		C139		C139
141		0.133	U	0.205	U	1.64		0.183	U	0.171	U	0.128	U
142		0.149	U	0.230	U	0.211	U	0.185	U	0.192	U	0.143	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		0.186	EMPC	0.174	EMPC	0.244		0.516		0.314	EMPC	0.235	
145		0.0491	U	0.0499	U	0.0654	U	0.0711	U	0.0711	U	0.0502	U
146		30.9		26.1		27.0		55.0		13.9		46.9	
147	147 + 149	4.72	C	3.96	C	6.55	C	9.04	C	9.22	C	6.66	C
148		0.0590	U	0.0587	U	0.0828	U	0.113		0.0900	U	0.0635	U
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.0491	U	0.0499	U	0.0626	U	0.0711	U	0.0680	U	0.0491	U
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.0491	U	0.0499	U	0.0592	U	0.0711	U	0.0644	U	0.0491	U
153	153 + 168	122	C	201	C	151	C	322	C	76.0	C	220	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.150	EMPC	0.0499	U	0.0722	U	0.0820		0.0662	U	0.0518	U
156	156 + 157	13.8	C	26.3	C	16.9	C	28.0	C	13.6	C	25.7	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		0.898		0.612		1.44		2.55	EMPC	1.41	EMPC	1.40	
159		0.157		0.172	U	0.158	U	0.221		0.144	U	0.123	EMPC
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.102	U	0.157	U	0.144	U	0.133	U	0.131	U	0.0975	U
162		0.973		1.28		0.820	EMPC	1.18		0.454	EMPC	1.42	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		0.108	U	0.166	U	0.153	U	0.137	U	0.139	U	0.104	U
165		0.201	EMPC	0.174	U	0.159	U	0.153	U	0.145	U	0.178	
166	128 + 166		C128		C128		C128		C128		C128		C128
167		8.53		22.8		12.1		21.5		11.8		17.7	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.249	U	0.257	U	0.350	U	0.539	U	0.167	U	0.254	U
170		9.04		12.5		11.3		14.4		4.86		13.8	
171	171 + 173	0.958	C EMPC	0.571	C	1.05	C	2.27	C	1.18	C EMPC	1.25	C
172		1.75		0.953		1.85		2.17		0.456		1.45	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		1.34		1.09	EMPC	2.33		2.37		0.855	EMPC	1.36	
175		0.571		0.341	EMPC	0.595		0.925		0.203	EMPC	0.617	
176		0.134	EMPC	0.156	EMPC	0.292	EMPC	0.474		0.345		0.164	
177		8.44		4.28		10.6		19.1		3.60		11.6	
178		3.88		1.81		3.77		7.59		1.92		4.27	
179		0.599		0.549		1.06		2.48		1.17		0.911	EMPC
180	180 + 193	0.0610	C U	111	C	73.9	C	0.0766	C U	47.3	C	104	C
181		0.340		0.507		0.363		0.631		0.241		0.613	EMPC
182		0.0648	U	0.0788	U	0.167	EMPC	0.584		0.0719	U	0.0521	U
183	183 + 185	6.59	C	3.75	C	8.26	C	14.8	C	4.09	C	8.75	C
184		0.0910		0.0574	U	0.0500	U	0.0711	U	0.0524	U	0.0491	U
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0519	U	0.0631	U	0.0500	U	0.0711	U	0.0576	U	0.0491	U
187		78.2		101		81.1		138		50.9		136	
188		0.380		0.408		0.267	EMPC	0.354		0.219	EMPC	0.474	
189		1.17		1.62	EMPC	1.26		1.55	EMPC	0.926		1.58	
190		4.84		2.85		7.76		11.9		2.82		7.41	
191		0.982		1.45		1.10		1.59		0.565	EMPC	1.49	
192		0.0651	U	0.0791	U	0.0610	U	0.0798	U	0.0722	U	0.0523	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		6.30		7.03		6.69		6.53		2.14		8.18	
195		2.18		3.96		3.12		3.95		1.67		4.16	
196		4.04		6.38		4.03		4.69		2.51		5.90	
197	197 + 200	0.407	C	0.298	C	0.500	C	0.533	C EMPC	0.504	C	0.440	C
198	198 + 199	11.1	C	9.40	C	12.1	C	12.9	C	4.20	C	13.4	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		1.79		2.67		1.85		2.77		1.45		3.00	
202		1.87		0.890	EMPC	2.29		4.22		1.09		2.54	
203		5.37		2.53		10.2		13.1		2.84		6.41	
204		0.0509	U	0.0561	U	0.0543	U	0.0711	U	0.0564	U	0.0491	U
205		0.305		0.216		0.421		0.633		0.123		0.363	
206		2.23		1.62		3.50		3.32		1.26		2.22	
207		0.852		1.38		0.853	EMPC	0.931		0.763		1.27	
208		1.42		1.01		1.84		1.84		0.541		1.64	
209		2.17	EMPC	2.83		2.76		3.47		1.77		2.61	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		0.611	J	0.846	J	0.831	J	1.36	J	0.555	J	1.13	J
Total PCBs as Congeners (KM-based)		0.591	J	0.825	J	0.816	J	1.34	J	0.536	J	1.12	J
Total PCBs as Congeners (KM-based, capped)		0.591	J	0.825	J	0.816	J	1.34	J	0.536	J	1.12	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-10
Crayfish PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P19-CF 08021919CF 2/19/2008		Forebay P20-CF 08021920CF 2/19/2008		Forebay P21-CF 08021921CF 2/19/2008		Reference P38/42-CF 08021838/42 CF 2/28/2008		Reference P22-CF 08022622CF 2/26/2008		Reference P33-CF 08022233CF 2/26/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		0.161	EMPC	0.182	EMPC	0.142		0.176	U	0.130		0.156	U
2		0.106	EMPC	0.167	EMPC	0.123		0.186		0.138		0.186	EMPC
3		0.222	EMPC	0.261		0.130		0.156		0.186		0.188	EMPC
4		0.467	U	0.514	U	0.790	U	0.695	U	0.889	U	0.445	
5		0.168	U	0.130	U	0.655	U	0.532	U	0.735	U	0.184	U
6		0.149	EMPC	0.251		0.573	U	0.466	U	0.644	U	0.164	U
7		0.153	U	0.118	U	0.576	U	0.468	U	0.647	U	0.168	U
8		0.477	U	0.889	U	0.514	U	0.627		0.577	U	0.682	
9		0.150	U	0.116	U	0.574	U	0.467	U	0.645	U	0.162	U
10		0.155	U	0.120	U	0.569	U	0.463	U	0.639	U	0.163	U
11		49.4		48.2		49.7		64.3		15.1		35.8	
12	12 + 13	0.168	C U	0.130	C U	0.627	C U	0.510	C U	0.705	C U	0.181	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.159	U	0.123	U	0.595	U	0.484	U	0.668	U	0.170	U
15		1.73	EMPC	1.57	EMPC	4.50	EMPC	2.12		0.998	U	1.87	
16		0.397	EMPC	0.519		0.408		0.488		0.225	EMPC	0.497	
17		0.274		0.524	EMPC	0.359	EMPC	0.578		0.188		0.614	EMPC
18	18 + 30	1.55	C U	1.52	C U	1.64	C U	1.40	C U	0.447	C U	1.28	C U
19		0.0967	U	0.119	U	0.145	U	0.142		0.0870	U	0.111	
20	20 + 28	2.30	C U	3.10	C	2.53	C U	4.70	C	0.883	C U	3.94	C
21	21 + 33	0.386	C U	0.722	C U	0.482	C U	0.625	C U	0.310	C U	0.780	C U
22		0.386	EMPC	0.587		0.522		0.638		0.260		0.691	
23		0.0855	U	0.0751	U	0.0952	U	0.0709	U	0.0750	U	0.0497	U
24		0.0830	U	0.0614	U	0.0797	U	0.0527	U	0.0633	U	0.0497	U
25		0.121	EMPC	0.105		0.0834	U	0.0720		0.0657	U	0.177	
26	26 + 29	0.378	C U	0.414	C U	0.951	C	0.544	C	0.149	C U	0.460	C
27		0.109		0.0720		0.131	EMPC	0.0900		0.0590	U	0.0880	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		0.782	U	1.58	U	1.10	U	1.54	U	0.495	U	1.60	U
32		0.101	EMPC	0.270		0.168		0.240	U	0.118	EMPC	0.264	U
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.0876	U	0.0770	U	0.0968	U	0.0721	U	0.0763	U	0.0497	U
35		0.254		0.147	EMPC	0.157	EMPC	0.408	EMPC	0.0790	U	0.112	EMPC
36		0.0831	U	0.0731	U	0.0890	U	0.177		0.0701	U	0.0497	U
37		2.37		2.81		6.25		4.39		1.02		3.32	
38		0.0855	U	0.0752	U	0.0928	U	0.0691	U	0.0731	U	0.0497	U
39		0.0941	U	0.0828	U	0.103	U	0.0765	U	0.0809	U	0.0497	U
40	40 + 41 + 71	0.460	C EMPC	0.553	C	0.513	C	0.652	C U	0.277	C EMPC	0.594	C U
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		0.459	EMPC	0.564	EMPC	0.673	EMPC	0.460		0.187	U	0.510	
43		0.105	U	0.0913	U	0.126	U	0.0900		0.0919	U	0.0742	U
44	44 + 47 + 65	3.98	C	3.41	C	4.45	C	2.87	C	1.05	C	2.30	C U
45	45 + 51	0.171	C	0.213	C	0.187	C EMPC	0.276	C EMPC	0.138	C	0.223	C
46		0.107	U	0.0930	U	0.118	U	0.0827	U	0.0857	U	0.0748	U
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		0.185	U	0.343	U	0.342	U	0.362		0.0890	U	0.365	EMPC
49	49 + 69	0.499	C	0.911	C EMPC	0.991	C	1.10	C U	0.368	C	1.05	C U
50	50 + 53	0.224	C EMPC	0.239	C	0.258	C EMPC	0.235	C	0.0800	C EMPC	0.266	C EMPC
51	45 + 51		C45		C45		C45		C45		C45		C45
52		2.03		2.63		2.93		2.94		0.872		2.36	U
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0692	U	0.0558	U	0.0742	U	0.0500	U	0.0567	U	0.0497	U
55		0.192	U	0.125	U	0.191	U	0.158	U	0.133	U	0.138	U
56		0.362	U	0.502	U	0.744	U	0.542		0.269	U	0.429	EMPC
57		0.173	U	0.112	U	0.182	U	0.148	U	0.126	U	0.127	U
58		0.188	U	0.122	U	0.203	U	0.152	U	0.141	U	0.128	U
59	59 + 62 + 75	0.156	C U	0.113	C U	0.128	C U	0.162	C EMPC	0.0568	C U	0.177	C
60		0.857		1.08		1.01		1.01		0.207	U	0.957	
61	61 + 70 + 74 + 76	9.75	C	11.3	C	14.5	C	11.6	C	2.66	C U	9.41	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		1.10		1.59		1.69		1.20		0.612		1.06	
64		0.321	U	0.536	U	0.599	U	0.653		0.247	U	0.718	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		10.3		10.5		17.6		11.9		2.43		7.92	
67		0.162	U	0.130	EMPC	0.307	EMPC	0.152	EMPC	0.124	U	0.109	U
68		0.304	EMPC	0.342	EMPC	0.352		0.384		0.235	EMPC	0.446	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		0.165	U	0.108	U	0.167	U	0.145	U	0.116	U	0.121	U
73		0.0737	U	0.0644	U	0.0763	U	0.0536	U	0.0555	U	0.0526	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		2.67		3.38		3.66		2.88		1.30		2.39	
78		0.196	U	0.127	U	0.204	U	0.154	U	0.142	U	0.138	U
79		0.343		0.338		0.368		0.141		0.115	U	0.155	
80		0.168	U	0.109	U	0.163	U	0.133	U	0.113	U	0.123	U
81		0.218	U	0.211		0.250		0.175	U	0.135	U	0.176	
82		0.139	EMPC	0.204	EMPC	0.257	EMPC	0.180		0.0880	EMPC	0.144	
83	83 + 99	13.8	C	13.4	C	17.4	C	12.7	C	2.57	C	9.17	C
84		0.311	U	0.371	U	0.489	U	0.424		0.219	U	0.489	
85	85 + 116 + 117	3.21	C	3.90	C EMPC	3.71	C	3.47	C	1.31	C	2.87	C
86	86 + 87 + 97 + 108 + 119 + 125	5.66	C	4.85	C	6.75	C	3.23	C	1.12	C U	2.99	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	0.324	C U	0.426	C EMPC	0.576	C	0.353	C	0.141	C U	0.477	C EMPC
89		0.117	U	0.0794	U	0.104	U	0.0798	U	0.0730	U	0.0798	U
90	90 + 101 + 113	6.68	C	7.56	C	9.91	C	6.46	C	2.15	C	5.33	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		1.27		1.09		1.88		1.22		0.267	EMPC	0.852	
93	93 + 95 + 98 + 100 + 102	5.14	C	4.75	C	6.91	C	3.46	C	1.07	C U	2.43	C
94		0.121	U	0.0819	U	0.107	U	0.0819	U	0.0750	U	0.0814	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.0557	U	0.0637	U	0.0580	U	0.0500	U	0.0494	U	0.0497	U
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		0.100	U	0.0681	U	0.0886	U	0.0682	U	0.0624	U	0.0660	U
104		0.0626	U	0.0611	U	0.0633	U	0.0507	U	0.0494	U	0.0497	U
105		11.1		11.0		12.7		8.98		1.97		7.62	
106		0.462	U	0.500	U	0.435	U	0.281	U	0.153	U	0.197	U
107	107 + 124	0.530	C EMPC	0.609	C EMPC	0.711	C	0.526	C EMPC	0.160	C U	0.330	C EMPC
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		8.00		10.8		8.96		7.79		3.90		6.80	
110	110 + 115	3.35	C	3.46	C	5.81	C	3.13	C	1.36	C U	3.44	C
111		0.131	EMPC	0.171	EMPC	0.117		0.0990	EMPC	0.0810	EMPC	0.172	
112		0.0816	U	0.0553	U	0.0790	U	0.0590	U	0.0556	U	0.0565	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		2.61	EMPC	3.61		3.89		2.92		2.62		3.20	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		111		152		156		107		52.6		95.3	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		0.668		0.903		0.754		0.585		0.418	EMPC	0.669	
121		0.0874	U	0.0592	U	0.0764	U	0.0588	U	0.0538	U	0.0583	U
122		0.513	U	0.554	U	0.503	U	0.324	U	0.177	U	0.221	U
123		3.11	EMPC	3.62		4.00		2.45		1.93		2.71	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		0.650	U	0.748	U	0.547	U	0.377		0.207	U	0.273	U
127		0.551	U	0.596	U	0.476	U	0.307	U	0.265		0.221	U

Table H-10
Crayfish PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay P19-CF 08021919CF 2/19/2008		Forebay P20-CF 08021920CF 2/19/2008		Forebay P21-CF 08021921CF 2/19/2008		Reference P38/42-CF 08021838/42 CF 2/28/2008		Reference P22-CF 08022622CF 2/26/2008		Reference P33-CF 08022233CF 2/26/2008	
128	128 + 166	1.84	C	1.60	C	2.97	C	1.58	C	0.887	C EMPC	1.84	C
129	129 + 138 + 160 + 163	73.8	C	81.0	C	79.1	C	58.0	C	23.2	C	51.0	C
130		3.33		3.48		4.29		3.30		0.614		1.80	
131		0.265	U	0.246	U	0.249	U	0.130	U	0.171	U	0.0961	U
132		1.35		1.36		1.98		1.08		0.407	U	1.18	
133		1.84		2.00		1.95		1.69		0.574	EMPC	1.33	
134	134 + 143	0.487	C EMPC	0.240	C U	0.249	C U	0.488	C	0.171	C U	0.277	C EMPC
135	135 + 151 + 154	5.73	C	4.19	C	6.96	C	4.01	C	0.856	C U	2.61	C
136		0.641		0.472	EMPC	0.867		0.454		0.246	U	0.403	EMPC
137		4.72		6.25		6.00		4.02		4.35		5.15	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	0.262	C EMPC	0.221	C U	0.419	C	0.361	C	0.156	C U	0.262	C EMPC
140	139 + 140		C139		C139		C139		C139		C139		C139
141		0.241	U	0.224	U	0.247	U	0.130	U	0.170	U	1.33	
142		0.270	U	0.251	U	0.250	U	0.131	U	0.171	U	0.100	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		0.341		0.404		0.453		0.374		0.0800		0.259	
145		0.0621	U	0.0498	U	0.0572	U	0.0500	U	0.0494	U	0.0497	U
146		24.8		32.5		27.9		22.7		9.49		23.5	
147	147 + 149	9.47	C	8.93	C	11.0	C	5.57	C	1.72	C	5.76	C
148		0.0786	U	0.0610	U	0.0712	U	0.0500	U	0.0494	U	0.0594	U
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.0594	U	0.0498	U	0.0541	U	0.0500	U	0.0494	U	0.0497	U
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.0563	U	0.0498	U	0.0513	U	0.0500	U	0.0494	U	0.0497	U
153	153 + 168	158	C	192	C	181	C	113	C	77.4	C	115	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.111	EMPC	0.0660		0.113	EMPC	0.0500	U	0.0494	U	0.0497	U
156	156 + 157	13.9	C	19.2	C	19.1	C	12.7	C	14.3	C	14.7	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		2.07		1.37	EMPC	2.35		1.52		0.216		1.16	
159		0.202	U	0.188	U	0.191	U	0.100	U	0.132	U	0.0770	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.184	U	0.171	U	0.179	U	0.0936	U	0.123	U	0.0693	U
162		0.616		0.820	EMPC	0.741	EMPC	0.470		0.389	EMPC	0.572	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		0.195	U	0.182	U	0.721	EMPC	0.514		0.127	U	0.308	
165		0.204	U	0.189	U	0.206	U	0.108	U	0.142	U	0.0850	
166	128 + 166		C128		C128		C128		C128		C128		C128
167		12.0		14.1		14.4		8.88		9.80		9.44	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.240	U	0.298	U	0.265	U	0.126	U	0.180	U	0.158	U
170		6.75		8.53		9.35		7.25		6.33		7.41	
171	171 + 173	1.50	C EMPC	1.25	C EMPC	2.69	C	1.59	C	0.341	C	1.06	C
172		0.835	EMPC	0.829		1.18		1.06		0.314	EMPC	0.750	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		1.18		1.01		2.02		1.53		0.395		0.943	
175		0.475	EMPC	0.420	EMPC	0.647	EMPC	0.372		0.141	EMPC	0.254	EMPC
176		0.376	EMPC	0.335	EMPC	0.648		0.265		0.0870	EMPC	0.227	
177		9.27		11.5		12.5		10.0		2.34		5.32	
178		4.25		3.43		5.11		4.64		0.892		2.18	
179		1.53		0.765		2.41		0.916		0.253		0.681	
180	180 + 193	54.2	C	66.8	C	73.8	C	47.6	C	63.0	C	52.3	C
181		0.272	EMPC	0.430		0.445	EMPC	0.247		0.323	EMPC	0.325	
182		0.294	EMPC	0.0717	U	0.0912	U	0.0571	U	0.0601	U	0.242	
183	183 + 185	7.93	C	8.16	C	11.9	C	7.37	C	2.89	C	5.09	C
184		0.0830	EMPC	0.0570		0.103		0.0500	U	0.0494	U	0.0497	U
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0632	U	0.0575	U	0.0744	U	0.0500	U	0.0494	U	0.0497	U
187		67.1		87.6		77.7		69.8		27.8		65.6	
188		0.197	EMPC	0.237		0.383	EMPC	0.197		0.153		0.159	
189		0.923		1.09	EMPC	1.23		0.767		1.24		0.956	
190		5.92		6.14		7.38		4.95		2.39		3.57	
191		0.684		0.867		0.814		0.651		0.688	EMPC	0.740	
192		0.0792	U	0.0720	U	0.0902	U	0.0565	U	0.0595	U	0.0509	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		3.41		4.08		4.48		3.38		2.79		3.76	
195		2.43		3.11		3.38		2.28		2.34	EMPC	2.33	
196		2.60		3.24		4.02		2.42		3.20		2.87	
197	197 + 200	0.364	C	0.396	C	0.979	C	0.421	C EMPC	0.215	C EMPC	0.360	C
198	198 + 199	6.57	C	7.03	C	7.98	C	7.41	C	2.93	C	6.53	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		1.70		2.09		2.35		1.56		0.705	EMPC	1.23	
202		2.16		1.65		2.88		2.45		0.575	EMPC	0.948	
203		6.31		5.08		8.24		5.50		1.79		2.70	
204		0.0670	U	0.0572	U	0.0510	U	0.0500	U	0.0494	U	0.0497	U
205		0.260		0.242		0.428		0.322		0.162		0.238	
206		1.75		1.56		2.51		2.25		0.714		1.62	
207		0.609		0.816		1.17		0.606		0.808		0.787	
208		0.977	EMPC	1.10		1.47		1.34		0.442		0.999	
209		2.16		2.41		3.43		2.07		2.95		2.60	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		0.792	J	0.936	J	0.990	J	0.729	J	0.391	J	0.647	J
Total PCBs as Congeners (KM-based)		0.766	J	0.911	J	0.967	J	0.71868	J	0.366	J	0.634	J
Total PCBs as Congeners (KM-based, capped)		0.766	J	0.911	J	0.967	J	0.71868	J	0.366	J	0.634	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-10
Crayfish PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference P72-CF 08030372CF 3/3/2008		Reference P73-CF 08030373CF 3/3/2008		Reference P74-CF 08030374CF 3/3/2008		Reference P75-CF 08030375CF 3/3/2008		Reference P76-CF 08030376CF 3/3/2008	
Individual Congeners in pg/g (ng/kg), wet weight											
1		0.152	U	0.191	U	0.140	U	0.100	U	0.152	U
2		0.665		0.474		0.0900		0.457	EMPC	0.268	
3		0.109	EMPC	0.213		0.175		0.122	EMPC	0.114	
4		0.367	U	0.434		0.313		0.648	U	0.320	
5		0.257	U	0.229	U	0.165	U	0.531	U	0.249	U
6		0.228	U	0.204	U	0.147	U	0.465	U	0.221	U
7		0.234	U	0.209	U	0.150	U	0.467	U	0.227	U
8		0.588		0.559		0.334		0.417	U	0.639	
9		0.227	U	0.202	U	0.146	U	0.466	U	0.220	U
10		0.227	U	0.202	U	0.146	U	0.462	U	0.220	U
11		57.0		40.0		30.9		50.5		40.5	
12	12 + 13	0.253	C U	0.226	C U	0.163	C U	0.509	C U	0.245	C U
13	12 + 13		C12		C12		C12		C12		C12
14		0.237	U	0.212	U	0.153	U	0.483	U	0.230	U
15		1.35		1.24		0.891		0.721	U	0.782	
16		0.284		0.264		0.298		0.523		0.249	
17		0.317		0.281	EMPC	0.220		0.407		0.376	
18	18 + 30	0.756	C U	0.804	C U	0.733	C U	1.29	C U	0.836	C U
19		0.126		0.140	EMPC	0.0717	U	0.0991	U	0.0780	EMPC
20	20 + 28	1.80	C U	1.95	C U	2.54	C	2.43	C	1.32	C U
21	21 + 33	0.464	C U	0.364	C U	0.379	C U	0.405	C U	0.380	C U
22		0.342		0.344		0.297		0.604		0.285	
23		0.0683	U	0.0717	U	0.0490	U	0.0882	U	0.0570	U
24		0.0534	U	0.0587	U	0.0490	U	0.0782	U	0.0550	U
25		0.0770		0.0603	U	0.0750	EMPC	0.0772	U	0.0750	
26	26 + 29	0.267	C	0.270	C	0.208	C	0.274	C EMPC	0.228	C
27		0.0496	U	0.0546	U	0.0650		0.0870	EMPC	0.0511	U
28	20 + 28		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18
31		0.904	U	0.779	U	0.705	U	0.874	U	0.725	U
32		0.178	U	0.229	U	0.129	U	0.137	U	0.205	U
33	21 + 33		C21		C21		C21		C21		C21
34		0.0659	U	0.0800	EMPC	0.0490	U	0.0897	U	0.0550	U
35		0.348		0.384		0.0502	U	0.251		0.281	EMPC
36		0.116	EMPC	0.143		0.0490	U	0.0913	U	0.0740	EMPC
37		2.40		3.36		2.38		2.68		1.33	
38		0.0667	U	0.0699	U	0.0490	U	0.0859	U	0.0557	U
39		0.0689	U	0.0723	U	0.0490	U	0.0951	U	0.0575	U
40	40 + 41 + 71	0.500	C U	0.412	C U	0.433	C U	0.505	C U	0.441	C U
41	40 + 41 + 71		C40		C40		C40		C40		C40
42		0.240	EMPC	0.255	EMPC	0.433	EMPC	0.794		0.267	
43		0.0705	U	0.0838	U	0.0620	U	0.139	U	0.0770	U
44	44 + 47 + 65	1.82	C U	1.63	C U	2.45	C	3.92	C	1.43	C U
45	45 + 51	0.210	C	0.211	C EMPC	0.141	C	0.243	C	0.181	C
46		0.0710	U	0.0844	U	0.0625	U	0.130	U	0.0776	U
47	44 + 47 + 65		C44		C44		C44		C44		C44
48		0.250	EMPC	0.179	EMPC	0.239		0.339		0.189	EMPC
49	49 + 69	0.722	C U	0.504	C U	0.722	C U	1.06	C U	0.535	C U
50	50 + 53	0.124	C EMPC	0.195	C EMPC	0.173	C EMPC	0.281	C EMPC	0.132	C EMPC
51	45 + 51		C45		C45		C45		C45		C45
52		1.84	U	1.36	U	1.87	U	2.23	U	1.39	U
53	50 + 53		C50		C50		C50		C50		C50
54		0.0497	U	0.0820		0.0490	U	0.0745	U	0.0497	U
55		0.160	U	0.132	U	0.107	U	0.168	U	0.115	U
56		0.423		0.365		0.416		0.543	EMPC	0.266	
57		0.147	U	0.122	U	0.0987	U	0.158	U	0.106	U
58		0.149	U	0.123	U	0.0998	U	0.162	U	0.107	U
59	59 + 62 + 75	0.102	C EMPC	0.0760	C EMPC	0.112	C EMPC	0.189	C	0.104	C
60		0.392		0.583		1.56		1.18	EMPC	0.324	
61	61 + 70 + 74 + 76	7.41	C	8.95	C	10.3	C	12.3	C	4.04	C
62	59 + 62 + 75		C59		C59		C59		C59		C59
63		1.19		1.23		1.22		1.19		0.811	
64		0.480		0.379		0.483		0.678	EMPC	0.358	
65	44 + 47 + 65		C44		C44		C44		C44		C44
66		5.78		8.94		13.6		12.9		3.81	
67		0.126	U	0.104	U	0.100	EMPC	0.142	U	0.0909	U
68		0.444		0.414		0.405		0.352		0.215	
69	49 + 69		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40
72		0.140	U	0.116	U	0.0939	U	0.154	U	0.101	U
73		0.0499	U	0.0593	U	0.0490	U	0.0841	U	0.0545	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61
77		2.62		3.29		2.99		2.57		1.87	
78		0.160	U	0.132	U	0.107	U	0.164	U	0.115	U
79		0.139	EMPC	0.208		0.208		0.246	EMPC	0.0941	U
80		0.143	U	0.118	U	0.0960	U	0.142	U	0.103	U
81		0.169	U	0.161	EMPC	0.167		0.194	U	0.127	U
82		0.247	EMPC	0.166		0.0707	U	1.31	U	0.0854	U
83	83 + 99	5.76	C	9.09	C	16.3	C	16.2	C	4.44	C
84		0.421		0.272		0.365		1.30	U	0.373	
85	85 + 116 + 117	3.64	C	3.53	C	3.68	C	3.51	C	2.47	C
86	86 + 87 + 97 + 108 + 119 + 125	2.03	C	2.21	C	3.49	C	6.42	C	1.63	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
88	88 + 91	0.319	C	0.325	C	0.403	C	1.16	C U	0.260	C
89		0.0601	U	0.106	U	0.0655	U	1.22	U	0.0791	U
90	90 + 101 + 113	4.97	C	4.86	C	6.91	C	9.00	C	3.68	C
91	88 + 91		C88		C88		C88		C88		C88
92		0.781		0.546		0.926		1.19	U	0.546	
93	93 + 95 + 98 + 100 + 102	2.31	C	2.30	C	3.17	C	5.36	C	1.86	C U
94		0.0614	U	0.108	U	0.0668	U	1.25	U	0.0807	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93
96		0.0496	U	0.0512	U	0.0490	U	0.344	U	0.0497	U
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93
103		0.0497	U	0.0877	U	0.0542	U	1.04	U	0.0654	U
104		0.0496	U	0.0549	U	0.0490	U	0.339	U	0.0497	U
105		3.57		6.03		12.7		10.6		3.01	
106		0.186	U	0.258	U	0.266	U	1.42	U	0.171	U
107	107 + 124	0.327	C	0.402	C	0.405	C	1.49	C U	0.265	C EMPC
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
109		8.91		8.22		7.05		9.24		5.65	
110	110 + 115	2.71	C	2.03	C	3.33	C	5.47	C	2.11	C
111		0.205	EMPC	0.123		0.137	EMPC	0.916	U	0.0660	EMPC
112		0.0496	U	0.0752	U	0.0490	U	0.904	U	0.0561	U
113	90 + 101 + 113		C90		C90		C90		C90		C90
114		3.69		3.51		3.90		3.64		2.52	
115	110 + 115		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85
118		95.8		111		138		157		63.6	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
120		0.737		0.704		0.865		0.866	U	0.517	EMPC
121		0.0496	U	0.0775	U	0.0490	U	0.901	U	0.0578	U
122		0.209	U	0.290	U	0.299	U	1.64	U	0.217	
123		2.47		3.07		3.76		3.72		1.96	
124	107 + 124		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
126		0.450		0.455		0.376	U	1.96	U	0.231	U
127		0.209	U	0.290	U	0.299	U	1.56	U	0.192	U

Table H-10
Crayfish PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference P72-CF 08030372CF 3/3/2008		Reference P73-CF 08030373CF 3/3/2008		Reference P74-CF 08030374CF 3/3/2008		Reference P75-CF 08030375CF 3/3/2008		Reference P76-CF 08030376CF 3/3/2008	
128	128 + 166	1.46	C	1.46	C	2.70	C	2.94	C	1.19	C
129	129 + 138 + 160 + 163	59.5	C	62.7	C	61.4	C	78.4	C	37.8	C
130		2.94		3.43		2.66		3.00		1.58	
131		0.124	U	0.137	U	0.0754	U	0.200	U	0.0938	U
132		0.919		0.957		1.08		1.88		0.655	
133		1.99		1.85		1.21		1.92		0.878	
134	134 + 143	0.229	C	0.438	C	0.312	C	0.674	C	0.183	C EMPC
135	135 + 151 + 154	2.80	C	3.23	C	2.78	C	5.26	C	1.67	C
136		0.435		0.401		0.425		0.679		0.340	
137		5.78		5.84		5.10		7.00		3.80	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129
139	139 + 140	0.158	C	0.258	C	0.339	C	0.354	C	0.105	C
140	139 + 140		C139		C139		C139		C139		C139
141		1.00		0.132	U	0.0731	U	0.199	U	0.0909	U
142		0.130	U	0.142	U	0.0786	U	0.201	U	0.0977	U
143	134 + 143		C134		C134		C134		C134		C134
144		0.141	EMPC	0.201	EMPC	0.261	EMPC	0.343		0.131	EMPC
145		0.0496	U	0.0598	U	0.0490	U	0.0591	U	0.0497	U
146		27.9		25.2		21.6		29.4		16.5	
147	147 + 149	4.56	C	4.97	C	6.85	C	10.1	C	3.54	C
148		0.0496	U	0.0764	U	0.0511	U	0.0736	U	0.0521	U
149	147 + 149		C147		C147		C147		C147		C147
150		0.0496	U	0.0574	U	0.0490	U	0.0559	U	0.0497	U
151	135 + 151 + 154		C135		C135		C135		C135		C135
152		0.0496	U	0.0547	U	0.0490	U	0.0531	U	0.0497	U
153	153 + 168	115	C	142	C	174	C	199	C	83.2	C
154	135 + 151 + 154		C135		C135		C135		C135		C135
155		0.0550	EMPC	0.0630	EMPC	0.0570	EMPC	0.0524	U	0.0497	U
156	156 + 157	17.3	C	16.9	C	18.8	C	22.2	C	12.3	C
157	156 + 157		C156		C156		C156		C156		C156
158		0.855		0.957		1.88		2.25		0.410	
159		0.0966	U	0.106	U	0.0586	U	0.154	U	0.0729	U
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129
161		0.0898	U	0.0985	U	0.0544	U	0.144	U	0.0677	U
162		0.847		0.642	EMPC	0.522	EMPC	0.679		0.540	EMPC
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129
164		0.240		0.0989	U	0.357		0.345	EMPC	0.264	EMPC
165		0.102	U	0.118	EMPC	0.0670	EMPC	0.175		0.0771	U
166	128 + 166		C128		C128		C128		C128		C128
167		10.6		10.6		13.6		16.7		8.46	
168	153 + 168		C153		C153		C153		C153		C153
169		0.0992	U	0.154	U	0.103	U	0.171	U	0.105	U
170		12.6		13.2		7.82		7.37		6.92	
171	171 + 173	0.879	C	1.33	C	1.32	C	2.00	C	0.560	C EMPC
172		1.30	EMPC	1.17		0.535		0.414		0.551	
173	171 + 173		C171		C171		C171		C171		C171
174		1.26		1.04		0.802		0.888		0.870	
175		0.391		0.493		0.316		0.476		0.206	
176		0.172	EMPC	0.233		0.324		0.526		0.108	EMPC
177		8.23		10.9		7.16		9.14		4.52	
178		3.61		4.15		2.71		5.19		1.45	
179		0.504	EMPC	0.474		0.750		1.48		0.478	EMPC
180	180 + 193	59.1	C	61.3	C	55.5	C	74.1	C	39.2	C
181		0.393	EMPC	0.343		0.324		0.381	EMPC	0.267	
182		0.0496	U	0.0718	U	0.0490	U	0.0807	U	0.0670	U
183	183 + 185	6.19	C	7.93	C	7.07	C	9.00	C	3.55	C
184		0.0496	U	0.0541	U	0.0490	U	0.0591	U	0.0505	U
185	183 + 185		C183		C183		C183		C183		C183
186		0.0496	U	0.0585	U	0.0490	U	0.0658	U	0.0546	U
187		75.8		69.5		55.2		87.9		47.6	
188		0.147		0.275		0.214		0.238		0.163	
189		1.33		1.19		1.04		1.25		0.851	
190		5.05		5.69		5.00		5.95		3.09	
191		0.750		0.639		0.727		0.997		0.304	
192		0.0496	U	0.0726	U	0.0490	U	0.0798	U	0.0678	U
193	180 + 193		C180		C180		C180		C180		C180
194		6.01		5.36		3.88		3.73		3.47	
195		3.41		3.75		3.38		2.76		1.97	
196		3.28		3.72		3.42		3.07		2.06	
197	197 + 200	0.395	C	0.359	C	0.521	C	0.565	C	0.140	C
198	198 + 199	8.55	C	8.71	C	5.10	C	6.56	C	3.64	C
199	198 + 199		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197
201		1.45		1.74		1.50		1.83		0.856	
202		1.31		1.88		1.84		2.76		0.635	
203		4.17		5.11		5.08		4.41		2.46	
204		0.0496	U	0.0494	U	0.0490	U	0.0570	U	0.0511	U
205		0.335		0.300		0.287		0.286		0.156	
206		2.11		2.18		1.63		1.31		1.06	
207		0.787		0.789	EMPC	0.772	EMPC	0.760		0.414	
208		1.24		1.18		0.799		0.735		0.506	
209		2.48		2.46		2.43		1.82		1.68	
Total PCBs as Congeners in ug/kg, wet weight											
Total PCBs as Congeners (full EMPC/full SDL)		0.706	J	0.746	J	0.783	J	0.984	J	0.469	J
Total PCBs as Congeners (KM-based)		0.692	J	0.735	J	0.774	J	0.952	J	0.456	J
Total PCBs as Congeners (KM-based, capped)		0.692	J	0.735	J	0.774	J	0.952	J	0.456	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-10
Crayfish PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference P78-CF 0803037 8CF 3/3/2008		Reference P79-CF 0803037 9CF 3/3/2008		Reference P82-CF 0803038 2CF 3/3/2008		Reference P90-CF 0803129 0CF 3/12/2008		Reference P91-CF 0803129 1CF 3/12/2008	
Individual Congeners in pg/g (ng/kg), wet weight											
1		0.228	U	0.238	U	0.127	U	0.0970	U	0.132	U
2		0.235	EMPC	0.324		0.130		0.0790		0.130	
3		0.204		0.185		0.166	EMPC	0.106		0.176	EMPC
4		0.627		0.544		0.337		0.262	U	0.297	
5		0.197	U	0.260	U	0.215	U	0.251	U	0.113	U
6		0.324		0.273		0.191	U	0.223	U	0.104	U
7		0.179	U	0.237	U	0.195	U	0.228	U	0.106	U
8		1.05		0.937		0.433		0.380		0.418	
9		0.174	U	0.229	U	0.189	U	0.221	U	0.101	U
10		0.174	U	0.230	U	0.190	U	0.222	U	0.100	U
11		42.9		71.1		60.0		25.9		51.0	
12	12 + 13	0.194	C U	0.256	C U	0.212	C U	0.247	C U	0.119	C U
13	12 + 13		C12		C12		C12		C12		C12
14		0.182	U	0.240	U	0.199	U	0.232	U	0.110	U
15		0.898		1.41		1.35		0.527		1.21	
16		0.365		0.349		0.414		0.263		0.320	
17		0.516		0.524		0.367		0.357		0.332	
18	18 + 30	1.30	C U	1.49	C U	1.29	C U	0.767	C U	1.34	C U
19		0.150		0.138	EMPC	0.0980		0.0760		0.0696	U
20	20 + 28	1.93	C U	2.59	C	4.47	C	2.65	C	2.75	C
21	21 + 33	0.622	C U	0.671	C U	0.554	C U	0.433	C U	0.336	C U
22		0.467		0.369		0.413	EMPC	0.384		0.328	
23		0.0536	U	0.0721	U	0.0675	U	0.0570	U	0.0644	U
24		0.0498	U	0.0529	U	0.0497	U	0.0500	U	0.0517	U
25		0.106	EMPC	0.101		0.0568	U	0.0710		0.0660	
26	26 + 29	0.311	C	0.500	C	0.355	C	0.195	C	0.252	C
27		0.0660		0.0760	EMPC	0.0940	EMPC	0.0498	U	0.0690	
28	20 + 28		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18
31		1.30	U	1.18	U	1.29	U	0.833	U	0.866	U
32		0.324	U	0.203	U	0.160	U	0.177	U	0.120	U
33	21 + 33		C21		C21		C21		C21		C21
34		0.0516	U	0.0695	U	0.0651	U	0.0549	U	0.0633	U
35		0.431		0.854		0.152	EMPC	0.0647	U	0.186	
36		0.0539	U	0.491		0.0679	U	0.0573	U	0.0635	U
37		1.96		3.13		4.20		1.96		4.04	
38		0.0523	U	0.0704	U	0.0658	U	0.0556	U	0.0633	U
39		0.0540	U	0.0728	U	0.0681	U	0.0575	U	0.0653	U
40	40 + 41 + 71	0.552	C U	0.536	C U	0.657	C U	0.590	C U	0.411	C U
41	40 + 41 + 71		C40		C40		C40		C40		C40
42		0.348	EMPC	0.342		0.762		0.608		0.841	
43		0.0640	U	0.0859	U	0.0871	U	0.0837	U	0.0782	U
44	44 + 47 + 65	1.68	C U	2.42	C	4.31	C	2.24	C U	4.11	C
45	45 + 51	0.287	C	0.227	C EMPC	0.262	C EMPC	0.234	C EMPC	0.157	C EMPC
46		0.0710		0.0866	U	0.0877	U	0.0843	U	0.0789	U
47	44 + 47 + 65		C44		C44		C44		C44		C44
48		0.271		0.267		0.394	EMPC	0.301		0.272	EMPC
49	49 + 69	0.658	C U	0.872	C U	1.14	C U	0.852	C U	0.738	C U
50	50 + 53	0.146	C EMPC	0.198	C	0.271	C	0.171	C	0.227	C
51	45 + 51		C45		C45		C45		C45		C45
52		1.79	U	2.31	U	3.57		1.87	U	2.06	U
53	50 + 53		C50		C50		C50		C50		C50
54		0.0498	U	0.0529	U	0.0497	U	0.0498	U	0.0492	U
55		0.0898	U	0.141	U	0.160	U	0.166	U	0.167	U
56		0.405		0.428		0.501		0.360		0.436	
57		0.0828	U	0.130	U	0.147	U	0.153	U	0.153	U
58		0.0837	U	0.132	U	0.149	U	0.155	U	0.150	U
59	59 + 62 + 75	0.0960	C	0.135	C	0.183	C	0.169	C EMPC	0.166	C
60		0.468	EMPC	0.764		2.63		1.47		1.55	
61	61 + 70 + 74 + 76	5.99	C	9.99	C	26.6	C	10.6	C	17.6	C
62	59 + 62 + 75		C59		C59		C59		C59		C59
63		0.752		1.49		2.13		0.626		1.34	
64		0.467		0.596		0.671		0.566	EMPC	0.429	
65	44 + 47 + 65		C44		C44		C44		C44		C44
66		5.43		9.40		27.9		14.4		16.5	
67		0.0710	U	0.151		0.203		0.131	U	0.201	EMPC
68		0.232		0.524		0.745		0.327	EMPC	0.403	
69	49 + 69		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40
72		0.0787	U	0.124	U	0.191		0.145	U	0.143	U
73		0.0498	U	0.0609	U	0.0617	U	0.0592	U	0.0550	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61
77		2.09		3.49		4.66		1.87		3.80	
78		0.0897	U	0.141	U	0.159	U	0.166	U	0.164	U
79		0.114	EMPC	0.264		0.434		0.176	EMPC	0.387	
80		0.0805	U	0.126	U	0.143	U	0.149	U	0.143	U
81		0.104	U	0.162	U	0.250	EMPC	0.204	U	0.188	U
82		0.187		0.153	EMPC	0.212		0.0887	U	0.170	EMPC
83	83 + 99	5.29	C	10.6	C	41.2	C	24.3	C	20.3	C
84		0.365		0.470		0.600		0.432		0.396	
85	85 + 116 + 117	2.44	C	4.25	C	7.65	C	2.14	C	4.15	C
86	86 + 87 + 97 + 108 + 119 + 125	1.61	C	3.53	C	10.2	C	3.29	C	6.91	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
88	88 + 91	0.263	C	0.404	C	0.657	C	0.527	C	0.699	C EMPC
89		0.0653	U	0.0734	U	0.0927	U	0.0822	U	0.0955	U
90	90 + 101 + 113	3.55	C	7.01	C	17.1	C	5.30	C	9.27	C
91	88 + 91		C88		C88		C88		C88		C88
92		0.515		1.39		2.40		0.693	EMPC	1.25	
93	93 + 95 + 98 + 100 + 102	1.88	C U	3.47	C	6.93	C	2.75	C	5.56	C
94		0.0666	U	0.0749	U	0.0947	U	0.0839	U	0.0971	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93
96		0.0498	U	0.0496	U	0.0497	U	0.0498	U	0.0492	U
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93
103		0.0540	U	0.0607	U	0.0767	U	0.0680	U	0.0797	U
104		0.0498	U	0.0496	U	0.0497	U	0.0498	U	0.0492	U
105		3.34		7.99		24.8		15.5		14.3	
106		0.188	U	0.281	U	0.514	U	0.237	U	0.0985	U
107	107 + 124	0.217	C EMPC	0.665	C	1.67	C	0.264	C	0.945	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
109		5.37		9.59		16.7		5.82		10.0	
110	110 + 115	2.04	C	3.44	C	4.76	C	3.40	C	3.36	C
111		0.0930	EMPC	0.189	EMPC	0.266	EMPC	0.0607	U	0.221	
112		0.0498	U	0.0520	U	0.0657	U	0.0582	U	0.0687	U
113	90 + 101 + 113		C90		C90		C90		C90		C90
114		2.36		3.56		8.15		4.71		4.17	
115	110 + 115		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85
118		69.7		122		323		264		163	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
120		0.438	EMPC	0.769	EMPC	1.41		1.10		0.970	
121		0.0498	U	0.0536	U	0.0677	U	0.0600	U	0.0706	U
122		0.212	U	0.316	U	0.578	U	0.267	U	0.109	U
123		2.05		3.26		7.36		6.45		3.72	
124	107 + 124		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
126		0.267	U	0.530		0.792	U	0.329	U	0.402	
127		0.212	U	0.315	U	0.587	EMPC	0.267	U	0.107	U

Table H-10
Crayfish PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference P78-CF 08030378CF 3/3/2008		Reference P79-CF 08030379CF 3/3/2008		Reference P82-CF 08030382CF 3/3/2008		Reference P90-CF 08031290CF 3/12/2008		Reference P91-CF 08031291CF 3/12/2008	
128	128 + 166	0.835	C	2.66	C	3.35	C	2.56	C	2.85	C
129	129 + 138 + 160 + 163	38.9	C	74.5	C	167	C	67.9	C	91.9	C
130		2.07		4.19		8.80		2.09	EMPC	4.86	
131		0.100	U	0.117	U	0.168	U	0.0908	U	0.159	EMPC
132		0.763		0.965	EMPC	2.19		1.16		2.32	
133		1.14		2.11		3.55		0.786		2.12	
134	134 + 143	0.180	C	0.443	C	0.580	C	0.355	C EMPC	0.358	C
135	135 + 151 + 154	2.13	C	4.33	C	8.38	C	2.25	C	5.58	C
136		0.435	EMPC	0.597		0.701		0.476		0.545	
137		4.02		6.47		14.5		8.45		5.64	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129
139	139 + 140	0.214	C	0.277	C EMPC	0.653	C	0.296	C EMPC	0.347	C
140	139 + 140		C139		C139		C139		C139		C139
141		0.0973	U	0.113	U	0.163	U	0.0880	U	0.923	EMPC
142		0.105	U	0.122	U	0.175	U	0.0946	U	0.158	U
143	134 + 143		C134		C134		C134		C134		C134
144		0.137		0.284	EMPC	0.994		0.205	EMPC	0.487	
145		0.0498	U	0.0496	U	0.0497	U	0.0498	U	0.0595	U
146		17.2		31.9		66.0		19.0		31.0	
147	147 + 149	3.72	C	6.69	C	15.9	C	5.17	C	12.0	C
148		0.0498	U	0.0579	U	0.0550	U	0.0514	U	0.0753	U
149	147 + 149		C147		C147		C147		C147		C147
150		0.0498	U	0.0496	U	0.0497	U	0.0498	U	0.0550	U
151	135 + 151 + 154		C135		C135		C135		C135		C135
152		0.0498	U	0.0496	U	0.0497	U	0.0498	U	0.0527	U
153	153 + 168	90.6	C	155	C	472	C	323	C	204	C
154	135 + 151 + 154		C135		C135		C135		C135		C135
155		0.0498	U	0.0560	EMPC	0.0840	EMPC	0.0498	U	0.0980	
156	156 + 157	13.0	C	18.8	C	39.1	C	29.6	C	20.4	C
157	156 + 157		C156		C156		C156		C156		C156
158		0.537		1.58		3.55		2.29		2.14	
159		0.0870		0.133	EMPC	0.172	EMPC	0.0730	EMPC	0.117	U
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129
161		0.0725	U	0.0844	U	0.122	U	0.0655	U	0.104	U
162		0.478		0.851	EMPC	1.48		0.464		0.895	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129
164		0.0728	U	0.525		1.17	EMPC	0.0658	U	0.377	EMPC
165		0.0825	U	0.141	EMPC	0.138	U	0.0746	U	0.135	EMPC
166	128 + 166		C128		C128		C128		C128		C128
167		8.16		11.2		30.1		27.3		13.4	
168	153 + 168		C153		C153		C153		C153		C153
169		0.0911	U	0.114	U	0.200	U	0.223	U	0.237	U
170		6.83		14.5		22.0		7.97		10.7	
171	171 + 173	1.02	C	1.50	C	2.96	C	2.87	C	2.60	C
172		0.632		1.42		2.50		0.262	EMPC	0.808	
173	171 + 173		C171		C171		C171		C171		C171
174		0.777		1.69		2.36		0.846	EMPC	0.949	
175		0.260		0.497		0.990		0.214	EMPC	0.578	EMPC
176		0.158		0.309		0.577		0.298	EMPC	0.665	
177		6.63		11.1		19.9		4.96		18.2	
178		2.81		4.35		8.53		2.81		5.70	
179		0.387		1.05		0.970		0.608		1.41	
180	180 + 193	41.9	C	70.1	C	145	C	98.6	C	71.1	C
181		0.303		0.457		0.789	EMPC	0.409		0.389	EMPC
182		0.0498	U	0.0563	U	0.0725	U	0.0589	U	0.0860	U
183	183 + 185	4.61	C	8.46	C	22.7	C	15.0	C	12.4	C
184		0.0498	U	0.0496	U	0.0546	U	0.0498	U	0.0621	U
185	183 + 185		C183		C183		C183		C183		C183
186		0.0498	U	0.0496	U	0.0591	U	0.0498	U	0.0726	U
187		47.4		85.3		167		53.4		83.7	
188		0.132		0.189		0.268		0.234		0.204	EMPC
189		0.907		1.31		2.20		1.29		1.14	EMPC
190		3.11		7.28		12.9		4.71		7.11	
191		0.452		0.996		2.02		1.61		0.641	EMPC
192		0.0498	U	0.0569	U	0.0734	U	0.0596	U	0.0850	U
193	180 + 193		C180		C180		C180		C180		C180
194		2.90		6.15		9.42		2.89		3.96	
195		2.28		3.87		5.80		3.45		3.94	
196		2.31		4.18		6.28		3.85		3.26	
197	197 + 200	0.296	C	0.479	C	0.713	C	0.827	C	0.638	C
198	198 + 199	4.93	C	9.03	C	14.9	C	3.19	C	7.24	C
199	198 + 199		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197
201		1.26		1.84		2.85		1.15		2.16	
202		1.27		1.98		2.91		1.42	EMPC	2.62	
203		2.70		8.67		11.8		4.45		5.92	
204		0.0498	U	0.0496	U	0.0514	U	0.0499	U	0.0661	U
205		0.207	EMPC	0.378		0.710		0.139	EMPC	0.380	
206		1.14		2.76		3.22		1.07		1.83	
207		0.599		0.766		1.27		0.849		0.892	
208		0.669		1.23		1.40		0.449	EMPC	1.06	
209		2.00		2.50		2.95		1.72		2.23	
Total PCBs as Congeners in ug/kg, wet weight											
Total PCBs as Congeners (full EMPC/full SDL)		0.510	J	0.889	J	1.96	J	1.14	J	1.03	J
Total PCBs as Congeners (KM-based)		0.496	J	0.876	J	1.94	J	1.12	J	1.02	J
Total PCBs as Congeners (KM-based, capped)		0.496	J	0.876	J	1.94	J	1.12	J	1.02	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-10
Crayfish PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference P92-CF 08031292CF 3/12/2008		Reference P94-CF 08031294CF 3/12/2008		Reference P98-CF 08031298CF 3/12/2008		Reference P100-CF 08031210OCF 3/12/2008		Forebay - Goose Island P110 09042911OCF 4/29/2009	
Individual Congeners in pg/g (ng/kg), wet weight											
1		0.341	U	0.162	U	0.145	U	0.135	U	0.201	U
2		0.327	EMPC	1.14		0.171		0.492		0.209	U
3		0.936		0.238		0.166		0.191		0.258	U
4		0.610	U	0.410		0.280		0.369		1.29	U
5		0.415	U	0.165	U	0.119	U	0.123	U	0.703	U
6		0.383	U	0.164	EMPC	0.110	U	0.152	EMPC	0.639	U
7		0.390	U	0.188		0.112	U	0.122		0.657	U
8		0.892	EMPC	0.718		0.414		0.586		0.600	U
9		0.369	U	0.147	U	0.106	U	0.109	U	0.634	U
10		0.369	U	0.147	U	0.105	U	0.109	U	0.626	U
11		37.3		61.9		28.1		58.0		19.8	
12	12 + 13	0.436	C U	0.174	C U	0.125	C U	0.129	C U	0.724	C U
13	12 + 13		C12		C12		C12		C12		C12
14		0.403	U	0.160	U	0.115	U	0.119	U	0.687	U
15		1.00	EMPC	1.00		0.932		1.24		0.914	U
16		0.326	U	0.323		0.214		0.407		0.292	
17		0.463	EMPC	0.424		0.202		0.452		0.295	EMPC
18	18 + 30	0.854	C U	1.02	C U	0.611	C U	1.31	C U	0.655	C EMPC
19		0.269	U	0.101		0.117	EMPC	0.117	EMPC	0.214	U
20	20 + 28	1.68	C U	1.79	C U	1.15	C U	2.60	C	2.23	C
21	21 + 33	0.582	C U	0.552	C U	0.311	C U	0.439	C U	0.460	C EMPC
22		0.430		0.431		0.286		0.433		0.566	EMPC
23		0.215	U	0.0928	U	0.0604	U	0.0513	U	0.115	U
24		0.201	U	0.0670	U	0.0577	U	0.0496	U	0.104	U
25		0.187	U	0.119		0.0650		0.100		0.117	
26	26 + 29	0.263	C	0.303	C EMPC	0.193	C	0.375	C	0.348	C
27		0.189	U	0.0652	U	0.0542	U	0.0660		0.0930	U
28	20 + 28		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18
31		1.03	U	1.06	U	0.553	U	0.911	U	1.09	
32		0.255	U	0.251	U	0.0990	U	0.221	U	0.132	
33	21 + 33		C21		C21		C21		C21		C21
34		0.212	U	0.0912	U	0.0594	U	0.0505	U	0.116	U
35		0.249	U	0.650		0.171		0.389		0.136	U
36		0.212	U	0.231		0.0596	U	0.112	EMPC	0.119	U
37		1.60		2.06		2.18		3.58		2.59	
38		0.212	U	0.0912	U	0.0594	U	0.0504	U	0.120	U
39		0.218	U	0.0941	U	0.0613	U	0.0520	U	0.117	U
40	40 + 41 + 71	0.672	C U	0.419	C U	0.269	C U	0.522	C U	0.647	C EMPC
41	40 + 41 + 71		C40		C40		C40		C40		C40
42		0.286	U	0.310	EMPC	0.248		0.670		0.512	
43		0.303	U	0.102	U	0.0911	U	0.0799	U	0.103	U
44	44 + 47 + 65	1.59	C U	1.72	C U	1.32	C U	2.84	C	2.15	C
45	45 + 51	0.263	C U	0.210	C EMPC	0.0792	C U	0.225	C	0.138	C EMPC
46		0.305	U	0.103	U	0.0919	U	0.0806	U	0.104	U
47	44 + 47 + 65		C44		C44		C44		C44		C44
48		0.303		0.214		0.150		0.270		0.321	
49	49 + 69	0.866	C U	0.659	C U	0.475	C U	0.759	C U	0.907	C
50	50 + 53	0.255	C U	0.185	C	0.0768	C U	0.205	C	0.150	C
51	45 + 51		C45		C45		C45		C45		C45
52		2.15	U	1.45	U	1.18	U	2.07	U	1.89	
53	50 + 53		C50		C50		C50		C50		C50
54		0.188	U	0.0742	U	0.0760		0.0496	U	0.130	U
55		0.360	U	0.145	U	0.0796	U	0.146	U	0.187	EMPC
56		0.349	U	0.300	EMPC	0.294		0.347		0.802	
57		0.328	U	0.132	U	0.0725	U	0.133	U	0.125	U
58		0.323	U	0.130	U	0.0712	U	0.131	U	0.133	U
59	59 + 62 + 75	0.205	C U	0.0690	C	0.0618	C U	0.134	C EMPC	0.207	C
60		0.425	EMPC	0.383	EMPC	0.404		0.977		0.875	
61	61 + 70 + 74 + 76	4.90	C	5.52	C	5.15	C	13.2	C	6.60	C
62	59 + 62 + 75		C59		C59		C59		C59		C59
63		0.762	EMPC	0.887	EMPC	1.02		1.42		0.777	
64		0.500	EMPC	0.420		0.355		0.462	EMPC	0.650	
65	44 + 47 + 65		C44		C44		C44		C44		C44
66		3.39		5.75		5.65		14.0		7.41	
67		0.288	U	0.116	U	0.0636	U	0.117	U	0.112	U
68		0.313	U	0.316		0.252	EMPC	0.423	EMPC	0.128	
69	49 + 69		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40
72		0.309	U	0.124	U	0.0681	U	0.125	U	0.121	U
73		0.213	U	0.0714	U	0.0641	U	0.0562	U	0.0568	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61
77		1.90		2.74		2.28		4.02		2.26	
78		0.353	U	0.142	U	0.0780	U	0.143	U	0.137	U
79		0.296	U	0.119	U	0.118	EMPC	0.379		0.146	
80		0.307	U	0.124	U	0.0678	U	0.124	U	0.120	U
81		0.401	U	0.151	U	0.146	EMPC	0.193	EMPC	0.145	U
82		0.362	U	0.135	EMPC	0.137		0.150		0.168	U
83	83 + 99	3.59	C	5.65	C	5.64	C	16.4	C	7.64	C
84		0.545	EMPC	0.375		0.208		0.491		0.560	
85	85 + 116 + 117	2.28	C	2.21	C	2.34	C	3.93	C	2.58	C
86	86 + 87 + 97 + 108 + 119 + 125	1.70	C	1.52	C	1.69	C	4.78	C	3.47	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
88	88 + 91	0.383	C EMPC	0.287	C	0.243	C	0.439	C	0.404	C
89		0.333	U	0.0861	U	0.0579	U	0.0594	U	0.161	U
90	90 + 101 + 113	3.57	C	3.67	C	3.28	C	6.61	C	5.26	C EMPC
91	88 + 91		C88		C88		C88		C88		C88
92		0.475		0.548		0.504		0.951		0.850	
93	93 + 95 + 98 + 100 + 102	2.78	C	1.78	C U	1.71	C U	3.65	C	2.43	C
94		0.339	U	0.0875	U	0.0588	U	0.0604	U	0.162	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93
96		0.172	U	0.0652	U	0.0496	U	0.0496	U	0.0644	U
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93
103		0.278	U	0.0718	U	0.0495	U	0.0496	U	0.137	U
104		0.184	U	0.0744	U	0.0680	EMPC	0.0496	U	0.106	U
105		2.25		4.00		4.33		11.8		6.24	
106		0.240	U	0.152	U	0.0804	U	0.0962	U	0.190	U
107	107 + 124	0.254	C U	0.208	C EMPC	0.271	C	0.674	C	0.399	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
109		5.65		6.22		5.98		10.0		4.75	
110	110 + 115	1.88	C EMPC	1.90	C	1.93	C	2.86	C	3.99	C
111		0.248	U	0.0950	EMPC	0.132	EMPC	0.178	EMPC	0.120	U
112		0.240	U	0.0652	U	0.0495	U	0.0496	U	0.108	U
113	90 + 101 + 113		C90		C90		C90		C90		C90
114		2.86		3.02		3.47		4.58		2.35	
115	110 + 115		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85
118		69.7		112		101		149		87.0	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
120		0.500	EMPC	0.584		0.685		0.891	EMPC	0.398	
121		0.246	U	0.0652	U	0.0495	U	0.0496	U	0.118	U
122		0.264	U	0.167	U	0.0885	U	0.106	U	0.232	U
123		2.26		2.91		3.00		4.17		2.56	
124	107 + 124		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86
126		0.275	U	0.243	EMPC	0.261	EMPC	0.481		0.261	EMPC
127		0.261	U	0.165	U	0.0875	U	0.105	U	0.223	U

Table H-10
Crayfish PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference P92-CF 08031292CF 3/12/2008		Reference P94-CF 08031294CF 3/12/2008		Reference P98-CF 08031298CF 3/12/2008		Reference P100-CF 08031210OCF 3/12/2008		Forebay - Goose Island P110 09042911OCF 4/29/2009	
128	128 + 166	1.18	C	1.33	C	1.30	C	2.55	C	1.48	C EMPC
129	129 + 138 + 160 + 163	37.3	C	40.1	C	44.3	C	82.1	C	44.5	C
130		1.09		1.45		1.74		3.50		1.77	
131		0.368	U	0.174	U	0.0844	U	0.136	EMPC	0.195	U
132		0.558		0.534		0.584		1.07		1.42	
133		1.01		1.17		0.994		2.30		0.924	
134	134 + 143	0.354	C U	0.176	C EMPC	0.229	C EMPC	0.271	C EMPC	0.689	C EMPC
135	135 + 151 + 154	1.47	C	1.69	C	1.73	C	4.50	C	3.04	C
136		0.394		0.391		0.380		0.659		0.636	
137		4.20		3.77		4.24		5.77		4.13	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129
139	139 + 140	0.314	C U	0.148	C U	0.111	C EMPC	0.321	C EMPC	0.178	C U
140	139 + 140		C139		C139		C139		C139		C139
141		0.344	U	0.597		0.322	EMPC	0.711		0.177	U
142		0.368	U	0.173	U	0.0843	U	0.124	U	0.198	U
143	134 + 143		C134		C134		C134		C134		C134
144		0.256	U	0.0970		0.100	EMPC	0.366	EMPC	0.290	EMPC
145		0.204	U	0.0652	U	0.0495	U	0.0496	U	0.0866	U
146		15.6		17.7		17.4		31.8		15.0	
147	147 + 149	2.98	C	3.12	C	3.29	C	8.45	C	6.32	C
148		0.259	U	0.0779	U	0.0495	U	0.0496	U	0.111	U
149	147 + 149		C147		C147		C147		C147		C147
150		0.189	U	0.0652	U	0.0495	U	0.0496	U	0.0823	U
151	135 + 151 + 154		C135		C135		C135		C135		C135
152		0.181	U	0.0652	U	0.0495	U	0.0496	U	0.0787	U
153	153 + 168	78.8	C	140	C	129	C	171	C	136	C
154	135 + 151 + 154		C135		C135		C135		C135		C135
155		0.210	U	0.0684	U	0.160		0.0660		0.118	U
156	156 + 157	15.1	C	16.7	C	20.1	C	24.4	C	13.3	C
157	156 + 157		C156		C156		C156		C156		C156
158		0.249	U	0.652		0.625		1.69		1.04	
159		0.272	U	0.128	U	0.0624	U	0.0914	U	0.138	U
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129
161		0.242	U	0.114	U	0.0554	U	0.0812	U	0.139	U
162		0.678	EMPC	0.570	EMPC	0.757		0.882		0.400	EMPC
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129
164		0.266	U	0.126	U	0.0611	U	0.356	EMPC	0.579	EMPC
165		0.289	U	0.136	U	0.0663	U	0.0971	U	0.159	U
166	128 + 166		C128		C128		C128		C128		C128
167		9.47		12.3		16.6		18.0		11.2	
168	153 + 168		C153		C153		C153		C153		C153
169		0.301	U	0.307	U	0.0971	U	0.325	U	0.164	U
170		7.26		8.06		7.72		9.43		8.66	
171	171 + 173	0.667	C EMPC	0.817	C	0.768	C EMPC	1.89	C	0.960	C
172		0.750	EMPC	0.531		0.472		0.921	EMPC	0.676	EMPC
173	171 + 173		C171		C171		C171		C171		C171
174		0.723	EMPC	0.623		0.759		1.17		1.55	
175		0.281	U	0.317		0.219		0.435	EMPC	0.290	
176		0.210	U	0.174	EMPC	0.150		0.463	EMPC	0.285	EMPC
177		5.45		7.30		5.60		10.3		4.80	
178		2.29	EMPC	2.64		2.36		4.95		2.42	
179		0.305	EMPC	0.463		0.556		0.882		1.07	
180	180 + 193	58.7	C	57.2	C	65.5	C	79.3	C	57.3	C
181		0.336		0.344		0.278	EMPC	0.507		0.267	EMPC
182		0.274	U	0.0857	U	0.0549	U	0.123		0.142	EMPC
183	183 + 185	4.21	C	6.21	C	4.69	C	9.06	C	5.11	C
184		0.198	U	0.0652	U	0.0495	U	0.0496	U	0.0568	U
185	183 + 185		C183		C183		C183		C183		C183
186		0.231	U	0.0723	U	0.0495	U	0.0562	U	0.0589	U
187		58.6		53.6		60.0		79.9		52.2	
188		0.222	U	0.209		0.202	EMPC	0.297		0.155	EMPC
189		1.31		0.936		1.32		1.65		0.662	
190		4.30		6.46		4.93		10.7		4.73	
191		0.460		0.566	EMPC	0.483		0.857		0.841	
192		0.271	U	0.0847	U	0.0542	U	0.0658	U	0.0623	U
193	180 + 193		C180		C180		C180		C180		C180
194		3.85		2.91		3.44		4.53		3.76	
195		2.32	EMPC	3.12		2.36		3.87		2.48	
196		2.55		2.37		2.27		3.43		3.05	
197	197 + 200	0.244	C U	0.284	C	0.214	C	0.448	C	0.297	C EMPC
198	198 + 199	6.09	C	4.47	C	4.59	C	8.19	C	5.37	C EMPC
199	198 + 199		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197
201		1.27		1.51		1.28		2.01		1.20	
202		0.961	EMPC	1.21		1.18		2.22		1.63	
203		3.04		4.86		4.32		9.69		5.47	
204		0.238	U	0.0786	U	0.0495	U	0.0648	U	0.0637	U
205		0.288	U	0.319	EMPC	0.242	EMPC	0.450		0.315	EMPC
206		1.28		1.63		1.35		2.54		1.53	EMPC
207		0.757	EMPC	0.666		0.499		0.813		0.425	
208		0.701	U	0.739	EMPC	0.641		1.19		0.758	
209		2.02		2.37		1.71	EMPC	2.67		1.80	
Total PCBs as Congeners in ug/kg, wet weight											
Total PCBs as Congeners (full EMPC/full SDL)		0.528	J	0.665	J	0.620	J	0.958	J	0.614	J
Total PCBs as Congeners (KM-based)		0.498	J	0.650	J	0.609	J	0.946	J	0.587	J
Total PCBs as Congeners (KM-based, capped)		0.498	J	0.650	J	0.609	J	0.946	J	0.587	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-11
Sculpin PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay SF-01 F-1 9/17/2008		Forebay SF-02 F-2 9/17/2008		Forebay SF-03 F-3 9/17/2008		Forebay SF-04 F-4 9/17/2008		Forebay SF-05 F-5 10/22/2008		Forebay SF-06 F-6 9/19/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		0.121	EMPC	0.161		66.3	U	0.205		0.246		0.382	
2		0.482		0.409		72.3	U	0.561		0.444		1.22	
3		0.220	EMPC	0.444	EMPC	77.0	U	0.496	EMPC	0.247		0.665	EMPC
4		1.03	EMPC	1.22	EMPC	336	U	1.01		1.78		2.94	
5		0.151	U	0.148	U	251	U	0.184	U	0.132	U	0.216	U
6		0.681		0.684		226	U	1.21	EMPC	0.961		1.75	
7		0.267	EMPC	0.154	EMPC	229	U	0.191	EMPC	0.233		0.469	EMPC
8		3.47		3.40		209	U	2.78		4.36		8.63	
9		0.233	EMPC	0.268		225	U	0.744		0.304		0.652	EMPC
10		0.139	U	0.136	U	230	U	0.169	U	0.121	U	0.206	U
11		211		191		233	U	90.5		124		450	
12	12 + 13	0.146	C U	0.143	C U	233	C U	1.07	C EMPC	0.127	C U	0.221	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.139	U	0.135	U	228	U	0.168	U	0.120	U	0.208	U
15		1.16	EMPC	1.19		278	U	0.620		0.854		2.93	EMPC
16		3.94		3.64		130	U	2.63		5.38		11.5	
17		6.55		5.96		189		14.6		14.8		36.3	
18	18 + 30	15.6	C	15.1	C	882	C EMPC	65.2	C	25.9	C	60.1	C
19		0.437		0.499	EMPC	111	U	0.492		1.01		1.76	
20	20 + 28	68.0	C	60.6	C	2,330	C	283	C	122	C	280	C
21	21 + 33	9.90	C	7.60	C	380	C	20.7	C	14.1	C	40.1	C
22		9.74		8.99		86.1	U	14.6		13.3		48.1	
23		0.0740	EMPC	0.0497	U	80.7	U	0.418		0.196	U	0.330	U
24		0.314	EMPC	0.248		79.9	U	0.290		0.376		0.655	
25		1.53		1.32		69.3	U	5.51		2.62		10.5	
26	26 + 29	7.77	C	6.49	C	211	C EMPC	31.4	C	12.4	C	38.8	C
27		1.00		1.02		79.0	U	2.75		2.39		7.03	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		29.8		23.0		850		243		37.4		170	
32		1.61		1.23		75.3	U	4.21		4.08		13.3	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.234	EMPC	0.210		79.8	U	0.804		0.397		1.02	
35		0.0680	EMPC	0.141		77.7	U	0.325	U	0.198	U	0.343	U
36		0.0517	U	0.0860		74.0	U	0.882	EMPC	0.169	U	0.302	U
37		2.53		3.54		96.5		28.7		9.62		13.9	
38		0.119	EMPC	0.108		78.9	U	1.99		0.559		0.972	
39		0.315	EMPC	0.184		76.6	U	8.92		1.95		3.59	
40	40 + 41 + 71	10.6	C	7.53	C	3,320	C	322	C	162	C	227	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		7.19		6.24		3,610		505		82.5		115	
43		2.21	EMPC	1.62		2,880		54.4		17.3		23.3	
44	44 + 47 + 65	71.3	C	67.5	C	52,400	C	5,620	C	1,120	C	1,300	C
45	45 + 51	2.10	C	1.52	C	313	C EMPC	5.89	C	11.8	C	20.4	C
46		0.359		0.385	EMPC	94.7	U	0.515		2.14		2.66	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		8.08		6.12		2,690		0.250	U	52.9		93.1	
49	49 + 69	56.3	C	53.1	C	35,700	C	8,730	C	909	C	1,090	C
50	50 + 53	1.05	C	0.876	C EMPC	1,090	C	18.7	C	18.5	C	15.5	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		142		109		165,000		29,800		3,220		3,640	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0620	EMPC	0.0497	U	59.6	U	0.261		0.214	EMPC	1.38	
55		0.198	U	0.240	U	258	U	4.22	U	1.64	U	1.70	U
56		7.85		6.63		5,290		1,340		18.1		217	
57		0.622		0.608	EMPC	260	U	7.88		1.68		2.88	EMPC
58		0.405	EMPC	0.461		262	U	3.85	U	4.39	EMPC	4.32	EMPC
59	59 + 62 + 75	6.14	C	5.80	C	1,070	C	97.1	C	25.5	C	44.7	C
60		41.4		63.5		8,840		1,950		370		357	
61	61 + 70 + 74 + 76	246	C	360	C	131,000	C	41,600	C	3,970	C	5,880	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		14.2		31.5		2,480		501		199		82.5	
64		29.7		26.5		9,120		1,710		417		559	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		201		396		73,300		16,800		3,060		1,970	
67		1.28		1.39		225	U	10.4		2.07		8.86	
68		2.62		3.22		236	U	12.1		7.68		10.6	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		3.46		3.83		237	U	19.2		9.09		15.4	
73		0.0505	U	0.0497	U	58.2	U	0.192	U	0.178	U	0.124	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		10.8		19.9		443		111		40.0		48.7	
78		0.494		0.241	U	251	U	47.1		26.2		6.78	EMPC
79		1.63		1.90		3,020		471		71.4		59.4	
80		0.456		0.486	EMPC	233	U	9.75	EMPC	3.83		1.57	
81		0.449	EMPC	0.807	EMPC	295	U	9.50	U	5.23	U	3.88	U
82		2.29	EMPC	1.23	EMPC	22,200		2,230		361		227	
83	83 + 99	708	C	1,480	C	315,000	C	69,000	C	33,400	C	8,610	C
84		6.44		4.50		29,200		1,240		588		420	
85	85 + 116 + 117	198	C	365	C	73,900	C	18,800	C	8,850	C	2,650	C
86	86 + 87 + 97 + 108 + 119 + 125	117	C	129	C	196,000	C	33,500	C	7,090	C	5,600	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	9.41	C	6.34	C	23,900	C	2,730	C	566	C	535	C
89		0.294		0.229	EMPC	366	U	6.26		31.7		25.4	
90	90 + 101 + 113	302	C	311	C	303,000	C	58,700	C	12,600	C	10,000	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		82.8		85.9		49,100		9,270		1,840		1,760	
93	93 + 95 + 98 + 100 + 102	96.2	C	75.1	C	113,000	C	12,100	C	2,720	C	2,860	C
94		0.0830		0.0908	U	363	U	1.96		4.01		1.48	
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.507	EMPC	0.300		234	EMPC	8.61		19.0		19.6	
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		1.35		0.795	EMPC	954		120		24.4		26.7	
104		0.0505	U	0.0615	U	52.9	U	0.490	U	0.400	U	0.189	U
105		383		881		269,000		38,200		21,400		5,130	
106		1.28	U	2.55	U	325	U	23.9	U	13.5	U	7.53	U
107	107 + 124	14.5	C	14.6	C	10,400	C	2,180	C	182	C	465	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		100		283		40,600		7,130		3,890		955	
110	110 + 115	197	C	197	C	247,000	C	45,700	C	12,200	C	9,350	C
111		1.83		5.01		256	U	6.01		4.76		3.22	
112		0.0505	U	0.0639	U	235	U	0.657	U	0.441	U	0.194	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		44.8		162		19,900		3,510		2,890		356	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		1,630		6,700		757,000		111,000		86,900		19,300	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		9.36		26.6		234	U	33.1		32.0		19.5	
121		0.677		1.11		259	U	1.55		1.54	EMPC	1.63	
122		1.44	U	2.87	U	4,460		257		15.2	U	56.0	
123		22.9		61.0		11,800		1,660		920		268	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		3.21		7.31		405	EMPC	54.0		29.1		11.7	
127		4.51		15.0		1,950		283		14.0	U	31.9	

Table H-11
Sculpin PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay SF-01 F-1 9/17/2008		Forebay SF-02 F-2 9/17/2008		Forebay SF-03 F-3 9/17/2008		Forebay SF-04 F-4 9/17/2008		Forebay SF-05 F-5 10/22/2008		Forebay SF-06 F-6 9/19/2008	
128	128 + 166	305	C	597	C	60,700	C	20,800	C	17,100	C	2,510	C
129	129 + 138 + 160 + 163	2,040	C	4,800	C	463,000	C	113,000	C	91,300	C	15,100	C
130		32.6		44.2		23,600		3,040		774		577	
131		0.630		0.562	U	2,350		332		48.0		38.7	
132		16.0		9.49		38,400		4,080		1,010		874	
133		37.7		107		4,820		912		827		176	
134	134 + 143	5.45	C	3.43	C	10,400	C	1,330	C	233	C	200	C
135	135 + 151 + 154	164	C	204	C	31,900	C	6,240	C	1,740	C	1,710	C
136		16.1		12.6		13,700		1,280		493		453	
137		130		424		57,700		12,800		14,700		979	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	34.3	C	70.6	C	6,590	C	2,040	C	1,530	C	306	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		63.5		74.5		37,700		7,460		2,330		1,220	
142		0.206	U	0.561	U	233	U	6.08	U	3.32	U	2.18	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		7.37		5.71		7,050		1,100		195		191	
145		0.0505	U	0.0497	U	55.1	EMPC	0.343	U	2.17		1.88	
146		304		845		59,200		10,500		7,890		1,840	
147	147 + 149	57.5	C	49.8	C	69,800	C	8,440	C	1,360	C	1,480	C
148		1.07	EMPC	1.15		91.1	EMPC	17.2		5.27		7.33	
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.0940		0.0497	U	61.9	EMPC	8.60		1.37		1.72	
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.377		0.332		49.8	U	10.4		9.62		8.39	
153	153 + 168	2,940	C	13,600	C	423,000	C	105,000	C	106,000	C	14,500	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		2.34	EMPC	5.11		46.1	U	4.50		5.38		4.76	
156	156 + 157	306	C	1,220	C	118,000	C	21,900	C	25,400	C	2,020	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		169		380		40,500		12,800		11,400		1,450	
159		1.03		1.11	EMPC	375		31.3		7.48		7.47	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.136	U	0.371	U	158	U	4.01	U	2.19	U	1.47	U
162		10.8		36.1		2,740		426		475		53.8	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		20.8		20.3		15,200		2,580		618		456	
165		1.73		4.68		177	U	14.5		14.3		1.64	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		97.9		322		30,800		5,230		3,520		766	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		2.46	U	7.04	U	164	U	23.2	U	28.8	U	5.51	U
170		285		1,120		49,200		9,460		12,900		988	
171	171 + 173	103	C	281	C	6,420	C	2,160	C	2,240	C	379	C
172		37.6		71.5		5,030		851		830		134	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		12.7		8.59		8,400		687		134		152	
175		5.64		11.3		839		125		63.5		27.8	
176		1.55		0.819		566		64.3		10.7		20.8	
177		40.6		58.0		8,900		851		309		311	
178		81.8		246		4,160		659		599		300	
179		26.8		21.3		2,220		318		121		220	
180	180 + 193	975	C	7,050	C	84,000	C	16,500	C	26,600	C	2,040	C
181		6.76		26.4		1,410		311		412		28.4	
182		2.35		3.95		266	EMPC	48.0		47.7		7.86	
183	183 + 185	234	C	788	C	16,100	C	3,520	C	3,550	C	721	C
184		2.66		6.37		48.8	U	12.0		12.0		5.82	
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0513	U	0.0497	U	53.4	U	0.475	U	0.246	U	0.137	EMPC
187		451		952		28,700		3,350		2,620		1,750	
188		1.06		2.28		53.1	U	6.22		4.29		3.12	
189		12.8		88.1		2,480		400		501		43.7	
190		107		421		7,060		1,640		1,990		294	
191		15.9		84.3		2,130		337		438		39.8	
192		0.0570	U	0.274	EMPC	56.0	U	0.528	U	0.273	U	0.124	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		101		422		9,210		950		1,480		147	
195		60.8		394		3,180		371		534		90.2	
196		59.5		445		3,890		462		688		86.5	
197	197 + 200	9.52	C	39.6	C	393	C	44.2	C	63.9	C	17.8	C
198	198 + 199	72.8	C	172	C	7,560	C	564	C	449	C	193	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		11.1		30.4		830	EMPC	65.7		48.2		29.6	
202		53.2		205		1,790		226		309		131	
203		128		409		2,960		717		1,220		232	
204		0.214	EMPC	0.765		35.6	U	0.801		1.10		0.363	
205		6.94		27.4		265		50.5		67.1		12.7	
206		54.5		147		1,650		321		635		75.8	
207		12.0		57.0		405		60.6		92.8		12.3	
208		10.7		26.7		631		54.2		54.7		20.0	
209		28.5		75.0		282		67.0		85.5		28.5	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		15.0	J	48.9	J	4,784	J	915	J	559	J	141	J
Total PCBs as Congeners (KM-based)		14.9	J	48.8	J	4,773	J	915	J	559	J	141	J
Total PCBs as Congeners (KM-based, capped)		14.9	J	48.8	J	4,773	J	915	J	559	J	141	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-11
Sculpin PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay SF-07 F-7 10/21/2008		Forebay SF-08 F-8 9/17/2008		Forebay SF-09 F-9 9/19/2008		Forebay SF-10 F-10 10/21/2008		Forebay SF-11 F-11 9/17/2008		Forebay SF-12 F-12 2/22/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		0.234		0.178		0.160	EMPC	0.251	EMPC	0.175		0.929	J
2		0.446		0.473		0.535		0.479	EMPC	0.384		1.14	J
3		0.251	EMPC	0.265	EMPC	0.368	EMPC	0.594	EMPC	0.236	EMPC	0.702	EMPC
4		1.27		1.10		1.36		1.84		1.01		5.26	J
5		0.0876	U	0.112	U	0.172	U	0.134	EMPC	0.112	U	0.347	EMPC
6		0.687		0.657		0.161	U	0.125	U	0.518		2.55	J
7		0.146	EMPC	0.176		0.165	U	0.289		0.114	EMPC	0.477	J
8		3.26		3.58		3.05		5.69		2.44		12.2	J
9		0.241		0.244		0.237		0.391		0.178	EMPC	0.946	EMPC
10		0.0890	EMPC	0.106	U	0.163	U	0.125	U	0.106	U	0.257	EMPC
11		128		213		152		132		179		332	J
12	12 + 13	0.0896	C U	0.114	C U	0.176	C U	0.125	C U	0.114	C U	0.132	C UJ
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.0845	U	0.108	U	0.166	U	0.125	U	0.108	U	0.125	UJ
15		0.784		1.51	EMPC	0.923	EMPC	1.19		1.16	EMPC	1.98	EMPC
16		4.02		4.16		3.47		5.68		2.70		12.7	J
17		7.31		8.49		5.65		9.32		4.84		21.4	J
18	18 + 30	16.5	C	18.8	C	12.6	C	20.5	C	11.9	C	49.6	C J
19		0.561		0.461		0.534	EMPC	0.754		0.423		1.89	J
20	20 + 28	89.0	C	97.6	C	66.2	C	99.7	C	66.3	C	184	C J
21	21 + 33	11.8	C	13.0	C	8.45	C	16.7	C	7.27	C	28.3	C J
22		11.2		13.1		9.07		14.8		7.21		27.8	J
23		0.126		0.0752	U	0.0650	EMPC	0.125	U	0.0815	U	0.184	J
24		0.319		0.299		0.309		0.419		0.214		0.880	EMPC
25		1.75		1.90		1.31		2.45		1.13		3.53	J
26	26 + 29	9.60	C	10.5	C	6.89	C	11.5	C	6.60	C	18.2	C J
27		1.04		1.16		0.877		1.40		0.649		3.56	J
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		36.8		40.5		26.7		50.6		22.3		93.8	J
32		1.60		1.81		1.20		2.83		1.10		4.38	J
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.394		0.394	EMPC	0.280		0.422		0.273		0.630	J
35		0.0880	U	0.105	EMPC	0.107	EMPC	0.239		0.0847	U	0.179	UJ
36		0.0775	U	0.0689	U	0.0510	EMPC	0.138		0.0746	U	0.157	UJ
37		2.29		11.4		2.55		3.23		3.24		3.70	J
38		0.170	EMPC	0.151		0.125	EMPC	0.235	EMPC	0.108	EMPC	0.407	EMPC
39		0.464		0.454		0.364		0.653	EMPC	0.244		1.21	J
40	40 + 41 + 71	17.5	C	16.8	C	10.7	C	24.3	C	7.51	C	43.3	C J
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		14.3		12.4		9.84		15.5		5.21		42.9	J
43		3.47		3.43		1.97		4.51		2.04	EMPC	8.19	J
44	44 + 47 + 65	118	C	119	C	69.0	C	138	C	65.9	C	307	C J
45	45 + 51	2.74	C	2.59	C	2.00	C	4.74	C	1.32	C	8.77	C J
46		0.550		0.413	EMPC	0.489		0.836		0.300	EMPC	1.71	J
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		15.1		13.7		0.0623	U	0.125	U	6.24		40.9	J
49	49 + 69	105	C	105	C	62.2	C	128	C	57.5	C	208	C J
50	50 + 53	1.40	C	1.22	C	1.25	C	2.31	C	0.829	C	6.12	C J
51	45 + 51		C45		C45		C45		C45		C45		C45
52		231		234		122		310		123		564	J
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0870	EMPC	0.0750	EMPC	0.0527	U	0.125	U	0.0570		0.125	UJ
55		0.236	U	0.396	U	0.262	U	0.361	U	0.341	U	0.745	UJ
56		11.2		11.6		8.27		15.7		5.84		37.9	J
57		1.12		1.48		0.775	EMPC	1.39		0.728		2.22	J
58		0.960		0.589		0.450		1.47		0.525		2.00	EMPC
59	59 + 62 + 75	10.5	C	10.1	C	5.95	C	12.8	C	5.67	C	26.4	C J
60		68.6		77.2		46.0		70.9		54.5		154	J
61	61 + 70 + 74 + 76	402	C	505	C	259	C	514	C	307	C	940	C J
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		19.2		31.0		14.4		16.6		22.1		33.5	J
64		58.4		54.8		37.4		73.9		27.7		0.125	UJ
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		330		458		227		318		319		633	J
67		2.17		2.52		1.52		2.71		1.23		4.86	J
68		3.55		4.22		2.92		3.66		3.36		7.33	J
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		5.47		5.89		3.24		5.80		3.92		9.79	J
73		0.0500	U	0.0501	U	0.0497	U	0.125	U	0.0498	U	0.125	UJ
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		12.8		29.8		11.4		14.3		14.2		29.2	J
78		0.905	EMPC	0.831		0.621		0.349	U	0.920		1.44	J
79		2.87		2.68		1.76		3.91		1.59		10.9	J
80		0.315	EMPC	0.441	EMPC	0.298	EMPC	0.306	U	0.385		0.717	J
81		0.553	U	1.45		0.382	EMPC	0.524	U	0.710	EMPC	0.818	UJ
82		4.11	EMPC	3.48		3.07		6.08		2.22	EMPC	16.8	J
83	83 + 99	1,020	C	1,210	C	524	C	1,060	C	877	C	1,880	C J
84		11.0		9.27		7.46		18.2		4.05		56.4	J
85	85 + 116 + 117	280	C	347	C	154	C	316	C	234	C	608	C J
86	86 + 87 + 97 + 108 + 119 + 125	241	C	227	C	133	C	342	C	110	C	733	C J
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	19.8	C	17.2	C	11.4	C	30.9	C	6.16	C	90.2	C J
89		0.750		0.638		0.470	EMPC	1.14		0.208	U	1.93	EMPC
90	90 + 101 + 113	730	C	661	C	375	C	920	C	291	C	2,080	C J
91	88 + 91		C88		C88		C88		C88		C88		C88
92		166		169		76.4		203		74.4		469	J
93	93 + 95 + 98 + 100 + 102	180	C	180	C	88.8	C	240	C	76.6	C	520	C J
94		0.232	U	0.214	U	0.262	U	0.224		0.214	U	0.449	J
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.928		0.804		0.448	EMPC	1.25		0.361	EMPC	2.09	J
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		3.09		2.50		1.54		3.67		0.943		7.22	J
104		0.103	U	0.103	U	0.113	U	0.137	U	0.106	U	0.141	UJ
105		600		752		325		652		527		1,210	J
106		1.73	U	1.97	U	1.18	U	1.60	U	1.74	U	3.09	U
107	107 + 124	25.9	C	33.6	C	16.7	C	43.3	C	17.7	C	63.8	C J
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		159		187		107		143		171		320	J
110	110 + 115	462	C	430	C	263	C	649	C	172	C	1,720	C J
111		2.87		3.04		1.87		2.16		3.10		4.08	J
112		0.159	U	0.146	U	0.179	U	0.144	U	0.147	U	0.219	UJ
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		55.3		73.4		32.7		47.8		68.2		63.8	J
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		2,430		3,000		1,360		2,090		2,880		3,840	J
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		14.7		16.2		8.97		11.0		16.8		22.6	J
121		1.17		1.09		0.633		1.08		0.789		2.38	J
122		1.94	U	2.20	U	1.32	U	1.79	U	1.95	U	3.46	U
123		32.6		37.6		21.4		24.1		39.4		30.3	J
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		4.35		5.97		3.21		4.20		5.50		10.2	J
127		3.82		6.00		2.78		4.89		5.91		3.17	U

Table H-11
Sculpin PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay SF-07 F-7 10/21/2008		Forebay SF-08 F-8 9/17/2008		Forebay SF-09 F-9 9/19/2008		Forebay SF-10 F-10 10/21/2008		Forebay SF-11 F-11 9/17/2008		Forebay SF-12 F-12 2/22/2008	
128	128 + 166	392	C	500	C	207	C	476	C	347	C	834	C J
129	129 + 138 + 160 + 163	3,090	C	3,700	C	1,550	C	3,270	C	2,960	C	5,390	C J
130		72.7		65.2		43.8		78.9		37.5		183	J
131		1.67		1.45		1.03		2.26		0.492	U	2.39	U
132		33.7		31.4		19.6		60.4		8.62		237	J
133		61.3		70.4		34.8		56.5		61.3		117	J
134	134 + 143	14.4	C	11.6	C	7.45	C	20.4	C	3.34	C	59.8	C J
135	135 + 151 + 154	320	C	307	C	144	C	356	C	138	C	1,030	C J
136		34.9		32.9		16.6		45.3		12.2		129	J
137		138		180		73.3		140		163		59.6	J
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	46.3	C	56.8	C	22.3	C	56.3	C	40.1	C	62.6	C J
140	139 + 140		C139		C139		C139		C139		C139		C139
141		115		130		53.5		161		65.4		123	J
142		0.370	U	0.424	U	0.330	U	0.520	U	0.501	U	2.44	UJ
143	134 + 143		C134		C134		C134		C134		C134		C134
144		16.8		14.2		8.62		22.3		5.07		31.2	J
145		0.101	U	0.0808	U	0.0954	U	0.125	U	0.0685	U	0.125	UJ
146		525		570		310		420		538		935	J
147	147 + 149	109	C	105	C	65.2	C	158	C	40.9	C	808	C J
148		2.23		1.86		1.11		2.52		0.727		8.49	J
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.202		0.152	EMPC	0.0900	U	0.273		0.0647	U	1.14	J
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.598		0.0745	U	0.341		0.808		0.305		1.94	J
153	153 + 168	4,650	C	5,270	C	2,190	C	3,950	C	6,260	C	5,280	C J
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		3.62		4.12		1.77		3.97		3.47		6.51	J
156	156 + 157	340	C	428	C	179	C	337	C	414	C	283	C J
157	156 + 157		C156		C156		C156		C156		C156		C156
158		233		293		106		284		205		186	J
159		1.63		1.64		0.922		1.93		0.778	EMPC	3.66	J
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.250	U	0.286	U	0.223	U	0.351	U	0.338	U	1.65	UJ
162		14.7		18.9		8.77		14.1		17.7		18.1	J
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		41.5		43.3		20.9		58.6		18.8		160	J
165		2.70		3.12		1.72		2.31		2.83		3.77	EMPC
166	128 + 166		C128		C128		C128		C128		C128		C128
167		116		140		71.6		93.5		165		131	J
168	153 + 168		C153		C153		C153		C153		C153		C153
169		3.65		3.63	U	2.18	U	3.22	U	4.79	U	4.05	U
170		328		388		175		373		478		218	J
171	171 + 173	152	C	177	C	77.6	C	188	C	159	C	127	C J
172		49.9		57.4		27.5		52.7		64.3		42.1	J
173	171 + 173		C171		C171		C171		C171		C171		C171
174		21.0		19.4		12.0		32.3		7.51		70.8	J
175		9.72		9.21		5.65		9.54		8.02		10.6	J
176		3.09		2.74		1.73		5.13		0.614	EMPC	13.6	J
177		85.4		72.4		57.1		91.3		45.5		414	J
178		159		168		87.7		147		133		386	J
179		67.1		53.3		34.3		82.8		17.5		333	J
180	180 + 193	1,290	C	1,460	C	693	C	1,150	C	2,270	C	744	C J
181		8.39		10.0		4.24		8.19		9.88		6.22	J
182		3.00		3.49		1.73	EMPC	3.59		2.68		3.09	J
183	183 + 185	347	C	384	C	172	C	379	C	398	C	309	C J
184		4.22		4.81		2.20		5.12		4.13		5.36	J
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0500	U	0.0574	U	0.0507	U	0.125	U	0.0498	U	0.125	UJ
187		705		643		468		526		654		2,230	J
188		1.83		1.76		1.34		1.47		1.75		5.34	J
189		13.5		15.7		8.13		13.6		20.9		9.62	J
190		172		202		83.0		170		242		161	J
191		19.9		24.2		10.3		21.1		33.3		11.1	J
192		0.0542	U	0.0647	U	0.0571	U	0.175	EMPC	0.101	EMPC	0.125	UJ
193	180 + 193		C180		C180		C180		C180		C180		C180
194		124		130		69.5		118		190		65.9	J
195		84.9		92.0		44.6		83.0		123		67.9	J
196		68.4		77.7		40.9		71.8		120		40.7	J
197	197 + 200	14.1	C	15.1	C	7.56	C	16.7	C	18.3	C	10.3	C J
198	198 + 199	115	C	108	C	73.7	C	91.8	C	110	C	155	C J
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		19.6		17.6		13.0		15.5		18.5		20.7	J
202		106		113		57.8		104		93.2		199	J
203		213		227		102		217		288		142	J
204		0.407		0.420		0.214		0.374	EMPC	0.476		0.229	J
205		11.2		11.6		5.74		10.7		14.3		5.73	J
206		73.4		74.9		40.7		66.6		73.4		34.8	J
207		14.5		15.6		8.48		14.6		18.3		7.46	J
208		17.4		16.3		10.9		13.9		14.4		14.8	J
209		37.1		39.3		20.9		29.6		34.9		15.9	J
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		22.9	J	26.2	J	12.3	J	23.1	J	24.1	J	39.7	J
Total PCBs as Congeners (KM-based)		22.9	J	26.1	J	12.3	J	23.1	J	24.2	J	39.6	J
Total PCBs as Congeners (KM-based, capped)		22.9	J	26.1	J	12.3	J	23.1	J	24.1	J	39.6	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-11
Sculpin PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay SF-13 F-13 2/22/2008		Forebay SF-14 F-14 10/22/2008		Forebay SF-15 F-15 10/21/2008		Forebay SF-16 F-16 10/21/2008		Forebay SF-17 F-17 10/21/2008		Reference SR-01 R-1 7/23/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		0.540	EMPC	0.160		1.94		0.218	EMPC	0.266	EMPC	0.165	
2		0.664	J	0.376		2.04		0.411		0.454		0.407	EMPC
3		2.45	EMPC	0.221	EMPC	20.9	EMPC	0.461	EMPC	0.595	EMPC	0.275	
4		2.43	J	1.32		0.989	EMPC	1.27		1.70		1.24	
5		0.157	UJ	0.0960		0.273	U	0.0870	EMPC	0.233	U	0.275	U
6		1.21	J	0.748		0.379	EMPC	0.637		1.34		0.641	
7		0.289	EMPC	0.202	EMPC	0.651		0.187		0.254		0.253	U
8		4.86	J	3.44		1.92		2.84		6.59		3.15	
9		0.547	J	0.286	EMPC	0.975	EMPC	0.221	EMPC	0.435		0.244	U
10		0.150	UJ	0.0830	EMPC	0.241	U	0.0760		0.206	U	0.257	U
11		114	J	127		138	EMPC	134		133		143	
12	12 + 13	0.924	C EMPC	0.0822	C U	0.269	C U	0.0759	C U	0.230	C U	0.257	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.152	UJ	0.0769	U	0.252	U	0.0710	U	0.215	U	0.246	U
15		0.731	J	0.975	EMPC	1.41		0.779		1.15		1.03	
16		4.24	J	3.92		0.937		3.27		6.22		3.55	
17		5.96	J	11.2		1.84		5.58		13.7		6.49	
18	18 + 30	15.2	C J	22.5	C	4.69	C	15.3	C	29.9	C	14.3	C
19		0.735	J	0.456	EMPC	0.272	EMPC	0.475		0.621		0.429	EMPC
20	20 + 28	66.4	C J	106	C	44.9	C	78.9	C	226	C	91.5	C
21	21 + 33	6.95	C J	13.3	C	3.29	C	7.60	C	26.2	C	12.5	C
22		6.41	J	14.5		3.51		8.85		23.2		12.6	
23		0.141	UJ	0.106	EMPC	0.132	U	0.117	EMPC	0.203	U	0.133	U
24		0.263	EMPC	0.352	EMPC	0.132	U	0.243		0.529	EMPC	0.239	
25		0.866	J	2.06		0.576		1.35		3.63		2.01	
26	26 + 29	6.67	C J	11.7	C	3.79	C	8.35	C	18.8	C	9.87	C
27		1.03	J	1.33		0.291	EMPC	0.954		1.91		0.802	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		35.4	J	44.5		15.2		32.2		88.9		46.4	
32		1.79	J	1.85		0.452	EMPC	1.35		7.15		1.36	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.153	EMPC	0.383		0.132	U	0.256		0.467		0.314	
35		0.141	UJ	0.114	EMPC	0.132	U	0.0929	U	0.219	U	0.133	U
36		0.141	UJ	0.0776	U	0.132	U	0.0800	U	0.188	U	0.114	U
37		0.874	J	2.34		0.716		2.51		4.10		2.85	
38		0.141	UJ	0.223		0.132	U	0.134	EMPC	0.342	EMPC	0.123	U
39		0.158	EMPC	0.663	EMPC	0.132	U	0.350		0.821		0.483	
40	40 + 41 + 71	7.86	C J	17.2	C	2.61	C	8.07	C	35.9	C	14.8	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		5.17	J	18.0		1.72		10.9		25.4		11.0	
43		1.55	J	0.245		0.880	EMPC	2.91		6.71		3.37	EMPC
44	44 + 47 + 65	66.9	C J	154	C	57.4	C	102	C	279	C	112	C
45	45 + 51	1.80	C J	2.51	C	1.21	C	2.00	C	4.69	C	2.33	C
46		0.493	EMPC	0.367	EMPC	0.132	U	0.395	EMPC	0.619	EMPC	0.380	EMPC
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		6.69	J	19.4		2.37		9.48		24.9		12.1	
49	49 + 69	58.7	C J	136	C	29.1	C	82.0	C	221	C	103	C
50	50 + 53	1.27	C J	1.03	C	0.223	C	0.972	C	2.17	C	0.952	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		151	J	277		61.8		165		361		216	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.141	UJ	0.0810	EMPC	0.132	U	0.0760	EMPC	0.108	EMPC	0.0903	U
55		0.240	UJ	0.819	U	0.336	U	0.349	U	1.18	U	0.334	U
56		5.32	J	9.89		1.47		6.50		22.3		12.4	
57		0.564	J	1.30		0.409		1.10		2.27		1.00	
58		0.285	J	0.734	U	0.301	U	0.509		1.06	U	1.06	
59	59 + 62 + 75	6.09	C J	13.0	C	3.84	C	8.31	C	22.2	C	9.92	C
60		43.9	J	108		51.1		59.4		249		69.0	
61	61 + 70 + 74 + 76	255	C J	585	C	257	C	477	C	1,090	C	415	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		10.4	J	28.2		12.9		29.4		49.5		15.1	
64		0.141	UJ	68.0		14.2		42.5		114		55.3	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		188	J	517		266		383		982		313	
67		0.612	J	2.45		0.479		1.44	EMPC	3.52		2.43	
68		2.22	J	4.44		2.11		6.21		5.00		3.30	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		3.20	J	6.62		2.81		4.89		8.77		5.64	
73		0.141	UJ	0.0499	U	0.132	U	0.0501	U	0.100	U	0.0823	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		4.31	J	15.3		4.64		18.7		15.4		11.4	
78		0.365	J	1.21		0.505	EMPC	1.32		1.63	EMPC	0.318	U
79		1.26	J	3.25		0.664		1.91		4.36		2.03	
80		0.238	EMPC	0.682	U	0.280	U	0.460	EMPC	1.92	EMPC	0.390	EMPC
81		0.225	UJ	0.756	U	0.278	U	0.846	EMPC	1.11	U	0.938	EMPC
82		2.64	EMPC	2.98		0.629	EMPC	2.73		11.6		4.10	
83	83 + 99	502	C J	1,710	C	913	C	878	C	2,490	C	868	C
84		6.50	J	8.94		1.27	EMPC	6.94		21.6		11.2	
85	85 + 116 + 117	157	C J	454	C	158	C	252	C	708	C	266	C
86	86 + 87 + 97 + 108 + 119 + 125	119	C J	288	C	58.4	C	151	C	447	C	212	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	7.34	C J	18.9	C	2.27	C	11.2	C	33.3	C	18.0	C
89		0.210	EMPC	0.642		0.209	U	0.382		0.967		0.483	
90	90 + 101 + 113	342	C J	953	C	161	C	485	C	1,020	C	632	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		99.1	J	228		55.0		109		251		161	
93	93 + 95 + 98 + 100 + 102	100	C J	207	C	46.7	C	114	C	246	C	172	C
94		0.197	UJ	0.0839	U	0.214	U	0.138	U	0.286	U	0.113	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.342	EMPC	0.836		0.150	U	0.572		1.19		0.734	
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		1.43	J	3.07		0.430	EMPC	2.05		4.13		2.53	
104		0.145	UJ	0.0743	U	0.211	U	0.0719	U	0.167	U	0.0591	U
105		303	J	997		549		530		1,570		505	
106		0.900	UJ	2.63	U	1.58	U	3.47	U	3.90	U	1.27	U
107	107 + 124	13.0	C J	35.7	C	8.36	C	17.6	C	37.5	C	29.4	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		72.4	J	221		98.3		393		270		123	
110	110 + 115	191	C J	551	C	97.2	C	289	C	756	C	458	C
111		1.20	J	3.71		3.25		3.81		4.41		1.88	
112		0.141	UJ	0.0586	U	0.150	U	0.0964	U	0.200	U	0.0723	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		21.2	J	81.8		48.8		239		128		32.0	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		870	J	3,750		1,860		7,340		4,800		1,540	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		6.40	EMPC	22.0		8.18		19.8		18.5		10.2	
121		0.897	J	1.87		0.669	EMPC	1.15		2.29		0.984	
122		1.01	U	2.99	U	1.80	U	3.94	U	4.42	U	2.19	EMPC
123		12.8	EMPC	48.7		19.6		160		56.6		20.2	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		2.39	J	6.32		2.90		7.26		5.96		3.06	
127		1.62	J	5.70		3.59		20.6		10.7		1.30	U

Table H-11
Sculpin PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Forebay SF-13 F-13 2/22/2008		Forebay SF-14 F-14 10/22/2008		Forebay SF-15 F-15 10/21/2008		Forebay SF-16 F-16 10/21/2008		Forebay SF-17 F-17 10/21/2008		Reference SR-01 R-1 7/23/2008	
128	128 + 166	190	C J	670	C	401	C	335	C	877	C	361	C
129	129 + 138 + 160 + 163	1,380	C J	5,510	C	3,010	C	3,230	C	5,830	C	2,440	C
130		30.9	J	98.3		19.7		65.4		103		54.1	
131		0.754	EMPC	1.69	EMPC	0.507	U	0.997		3.00		1.51	
132		16.8	J	32.1		2.82		18.5		66.6		40.0	
133		27.1	J	100		60.4		73.6		91.2		45.1	
134	134 + 143	5.18	C J	14.3	C	1.24	C	6.60	C	17.2	C	11.1	C
135	135 + 151 + 154	180	C J	488	C	114	C	211	C	407	C	310	C
136		0.141	UJ	42.9		5.90		20.7		46.2		32.9	
137		47.2	J	180		95.0		602		366		76.5	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	22.3	C	78.3	C	22.9	C	31.3	C	95.7	C	39.1	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		66.6	J	148		47.9		81.5		266		108	
142		0.555	UJ	0.722	U	0.506	U	0.633	U	1.04	U	0.274	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		8.04	J	21.1		2.30		10.4		25.6		15.0	
145		0.141	UJ	0.0610	EMPC	0.132	U	0.0703	U	0.161	U	0.0554	U
146		216	J	840		547		977		721		352	
147	147 + 149	53.4	C J	128	C	17.8	C	82.6	C	196	C	131	C
148		1.32	J	3.54		0.597		1.89		3.14		2.23	
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.141	U	0.126	EMPC	0.132	U	0.0655	U	0.301	EMPC	0.251	EMPC
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.141	UJ	0.852		0.132	U	0.449		0.651	EMPC	0.597	
153	153 + 168	1,480	C	7,790	C	4,780	C	8,030	C	6,930	C	2,900	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		1.98		6.24		1.76		3.29		6.24		2.55	
156	156 + 157	123	C J	485	C	381	C	1,550	C	759	C	183	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		90.3	J	414		183		150		552		195	
159		0.799	J	1.34		0.556	EMPC	1.14	EMPC	2.38	EMPC	1.70	EMPC
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.375	UJ	0.504	U	0.353	U	0.442	U	0.724	U	0.183	U
162		6.02	J	20.6		13.4		37.4		28.5		9.42	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		25.1	J	52.9		12.3		27.0		73.1		41.0	
165		1.30	J	4.53		4.52		3.88		3.85	EMPC	1.64	
166	128 + 166		C128		C128		C128		C128		C128		C128
167		43.2	J	179		87.5		671		193		70.8	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		1.45	UJ	5.62	U	3.69	U	4.16	U	3.70	U	3.36	U
170		148	J	411		526		392		641		212	
171	171 + 173	67.6	C J	271	C	130	C	112	C	227	C	110	C
172		27.5	J	64.0		81.2		44.5		102		39.4	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		12.8	J	17.9		3.01		12.9		32.7		21.4	
175		5.47	J	15.2		5.04		11.3		14.8		6.60	
176		1.61	J	3.85		0.132	U	1.73		4.77		3.59	
177		38.4	J	110		19.2		78.6		93.9		60.8	
178		79.7	J	292		128		170		200		118	
179		35.1	J	91.6		10.2		36.5		61.0		57.7	
180	180 + 193	448	C J	1,650	C	1,620	C	2,710	C	1,860	C	624	C
181		3.13	J	11.3		5.02		20.4		13.8		4.30	
182		2.19	J	5.01		2.22	EMPC	3.02		6.29		2.14	
183	183 + 185	175	C J	595	C	319	C	360	C	520	C	224	C
184		1.86	J	7.70		1.58		3.24		5.89		3.14	
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.141	UJ	0.0570	U	0.132	U	0.0592	U	0.109	U	0.0672	U
187		306	J	1,100		710		1,350		720		450	
188		0.880	EMPC	2.90		0.692		2.99		2.25		1.19	
189		5.86	J	15.8		20.5		41.3		24.8		6.91	
190		67.0	J	246		169		193		191		97.8	
191		8.32	J	28.3		20.2		29.8		32.2		10.1	
192		0.141	UJ	0.225		0.132	U	0.184	EMPC	0.141	EMPC	0.0750	
193	180 + 193		C180		C180		C180		C180		C180		C180
194		62.3	J	116		179		155		204		65.2	
195		31.1	J	109		85.5		98.3		98.1		45.2	
196		42.7	J	86.9		68.2		121		109		38.0	
197	197 + 200	6.51	C J	20.7	C	12.1	C	12.8	C	16.2	C	9.08	C
198	198 + 199	87.9	C J	136	C	166	C	166	C	169	C	81.8	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		10.3	J	32.6		9.75		33.9		20.8		13.3	
202		49.4	J	193		49.4		100		122		67.5	
203		112	J	288		208		185		268		114	
204		0.225	J	0.483		0.276		0.319	EMPC	0.696		0.244	
205		4.88	J	14.8		12.0		9.79		13.1		5.36	
206		46.3	J	82.3		68.2		58.2		102		34.8	
207		13.2	J	18.3		12.0		24.1		18.4		7.22	
208		15.6	J	22.4		12.0		20.3		20.9		10.8	
209		22.4	J	41.9		22.8		34.8		31.6		17.8	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		9.90	J	35.4	J	19.6	J	35.6	J	40.7	J	16.8	J
Total PCBs as Congeners (KM-based)		9.87	J	35.3	J	19.4	J	35.6	J	40.7	J	16.9	J
Total PCBs as Congeners (KM-based, capped)		9.87	J	35.3	J	19.4	J	35.6	J	40.7	J	16.8	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-11
Sculpin PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference SR-02 R-2 7/24/2008		Reference SR-03 R-3 3/14/2008		Reference SR-04 R-4 10/9/2008		Reference SR-05 R-5 7/24/2008		Reference SR-06 R-6 2/26/2008		Reference SR-07 R-7 3/10/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		0.190	EMPC	0.179	EMPC	0.213		0.323	EMPC	0.433		1.43	J
2		0.440	EMPC	0.235		0.413	EMPC	0.611		0.656	EMPC	0.719	J
3		0.241	EMPC	0.218	EMPC	0.212	EMPC	0.353		0.458	EMPC	0.424	J
4		1.41		1.26		2.03	EMPC	3.18	EMPC	1.81		16.9	J
5		0.250	U	0.192	U	0.198	U	0.242	EMPC	0.423	U	0.513	UJ
6		0.913		0.573		1.03		1.98		1.05		7.90	J
7		0.231	U	0.177	U	0.233	EMPC	0.419	EMPC	0.402	EMPC	0.726	EMPC
8		4.41		2.60		0.172	U	8.86		5.25		23.9	J
9		0.305	EMPC	0.201	EMPC	0.334		0.639		0.450	EMPC	2.21	J
10		0.234	U	0.179	U	0.184	U	0.198	EMPC	0.393	U	0.886	J
11		149		119		140		215		112		178	J
12	12 + 13	0.234	C U	0.179	C U	0.190	C U	0.182	C U	0.405	C U	1.65	C EMPC
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.224	U	0.171	U	0.185	U	0.177	U	0.395	U	0.479	UJ
15		1.25		0.587	EMPC	0.903		2.30		0.976		1.92	J
16		5.85		2.64		4.06		12.0		4.91		17.8	J
17		9.45		4.21		7.34		21.0		6.38		31.3	J
18	18 + 30	21.8	C	9.94	C	17.9	C	44.9	C	16.0	C	68.6	C J
19		0.741		0.392	EMPC	0.633		1.56		0.916		3.18	J
20	20 + 28	99.4	C	57.0	C	112	C	166	C	68.5	C	251	C J
21	21 + 33	15.2	C	5.84	C	15.1	C	29.9	C	9.51	C	39.8	C J
22		15.1		6.81		16.2		31.3		7.54		28.8	J
23		0.0906	U	0.118	U	0.109		0.239		0.246	U	0.221	EMPC
24		0.315		0.183	EMPC	0.277		0.532	EMPC	0.337		1.06	J
25		2.30		1.00		2.90		3.96		1.03		4.00	J
26	26 + 29	12.1	C	6.10	C	12.8	C	19.9	C	6.79	C	27.3	C J
27		1.62		0.658	EMPC	1.23		3.23		1.09		4.32	J
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		39.6		21.0		57.7		74.1		33.2		90.2	J
32		2.85		1.08		1.89		5.54		2.18		11.6	J
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.394	EMPC	0.165	EMPC	0.407		0.722		0.266	EMPC	0.561	J
35		0.198	EMPC	0.118	U	0.137	EMPC	0.288		0.253	U	0.164	UJ
36		0.160	EMPC	0.102	U	0.0852	U	0.138		0.210	U	0.136	UJ
37		4.47		2.27		2.06		7.28		0.674		1.41	J
38		0.171	EMPC	0.109	U	0.0926	U	0.276		0.228	U	0.149	EMPC
39		0.606	EMPC	0.108	U	0.0937	U	1.22	EMPC	0.245	EMPC	0.911	J
40	40 + 41 + 71	24.4	C	7.61	C	19.5	C	7.73	C	12.7	C	40.5	C J
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		19.4		10.9		15.2		40.8		7.92		24.9	J
43		5.15		2.22		4.15		7.29		2.78		7.10	J
44	44 + 47 + 65	156	C	103	C	126	C	257	C	82.8	C	204	C J
45	45 + 51	4.43	C	1.34	C	2.95	C	6.83	C	2.84	C	7.65	C J
46		0.709		0.124		0.434	EMPC	1.85		0.792	EMPC	1.76	J
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		18.5		8.93		16.0		35.7		9.05		30.3	J
49	49 + 69	121	C	86.1	C	123	C	183	C	67.3	C	177	C J
50	50 + 53	2.48	C	0.784	C	1.88	C	6.32	C	2.41	C	4.50	C J
51	45 + 51		C45		C45		C45		C45		C45		C45
52		284		175		256		424		161		347	J
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0830	EMPC	0.0588	U	0.0597	U	0.182		0.141	U	0.149	EMPC
55		0.481	U	0.475	U	0.311	U	0.362	U	0.750	U	0.709	U
56		18.8		5.48	EMPC	18.6		39.5		7.33		14.0	J
57		1.02		0.803	EMPC	1.08		1.43		0.811		1.59	J
58		0.717	EMPC	0.502	EMPC	1.12		1.33	EMPC	0.725	U	0.813	J
59	59 + 62 + 75	13.2	C	8.70	C	12.1	C	21.4	C	7.98	C	18.1	C J
60		82.1		78.7		67.4		130		52.6		92.3	J
61	61 + 70 + 74 + 76	420	C	366	C	463	C	680	C	282	C	504	C J
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		19.5		22.5		17.0		28.0		12.0		23.7	J
64		64.0		41.0		70.2		116		38.8		0.122	UJ
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		387		409		310		579		215		409	J
67		2.81		1.73		3.48		4.59		0.972	EMPC	2.48	J
68		2.53		2.37		3.89		4.18		2.11		3.06	J
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		5.95		5.39		6.15		8.38		3.93		6.59	J
73		0.0706	U	0.0604	U	0.0582	U	0.0484	U	0.138	U	0.122	UJ
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		12.9		10.7		13.8		21.7		5.19		9.81	J
78		0.458	U	0.452	U	0.300	U	0.349	U	0.724	U	0.683	UJ
79		3.24		2.19		2.74		6.22		1.42		2.65	J
80		0.421	U	0.576		0.374	EMPC	0.542	EMPC	0.649	U	0.613	UJ
81		1.40	EMPC	1.36	EMPC	0.689	EMPC	1.98	EMPC	0.711	U	1.41	EMPC
82		6.24		1.61		9.57		15.7		4.30		5.96	J
83	83 + 99	1,200	C	1,730	C	817	C	1,930	C	632	C	1,010	C J
84		16.7		4.57		22.4		40.3		11.0		11.3	J
85	85 + 116 + 117	324	C	445	C	239	C	522	C	192	C	285	C J
86	86 + 87 + 97 + 108 + 119 + 125	263	C	233	C	274	C	496	C	145	C	269	C J
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	23.3	C	9.67	C	29.0	C	52.6	C	12.1	C	16.7	C J
89		0.984	EMPC	0.203		0.674		1.83		0.461	EMPC	0.568	J
90	90 + 101 + 113	758	C	775	C	758	C	1,270	C	412	C	748	C J
91	88 + 91		C88		C88		C88		C88		C88		C88
92		203		213		188		305		127		197	J
93	93 + 95 + 98 + 100 + 102	204	C	149	C	204	C	347	C	134	C	197	C J
94		0.209	U	0.186	U	0.225	EMPC	0.420		0.221	U	0.351	UJ
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		1.04		0.497		0.758		1.71		0.569		1.19	J
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		2.99		2.07		4.04		4.47		1.49	EMPC	3.21	J
104		0.0624	U	0.0757	U	0.0619	U	0.136	EMPC	0.119	U	0.131	UJ
105		685		972		455		1,040		358		591	J
106		2.10	U	2.11	U	1.27	U	2.23	U	0.903	U	1.48	UJ
107	107 + 124	25.9	C	23.7	C	32.9	C	41.6	C	13.6	C	22.9	C J
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		159		261		104		214		80.7		144	J
110	110 + 115	498	C	390	C	568	C	1,030	C	289	C	460	C J
111		2.70		4.18		1.70	EMPC	3.81		1.39	EMPC	2.44	J
112		0.134	U	0.119	U	0.118	U	0.106	U	0.142	U	0.225	UJ
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		47.1		82.1		27.2		71.6		25.0		39.2	J
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		2,180		3,870		1,270		3,490		1,050		1,710	J
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		14.1		24.1		8.82		21.2		7.27		11.7	J
121		1.68		0.133	U	0.985		1.95		0.878		1.62	J
122		2.24	U	2.25	U	2.92		3.59	EMPC	0.993	U	1.62	UJ
123		25.8		44.5		21.4		45.3		15.3		25.5	J
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		3.64		4.62		2.54		5.89		2.72		3.97	J
127		2.16	U	7.38		2.86		7.33		2.47		3.00	J

Table H-11
Sculpin PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference SR-02 R-2 7/24/2008		Reference SR-03 R-3 3/14/2008		Reference SR-04 R-4 10/9/2008		Reference SR-05 R-5 7/24/2008		Reference SR-06 R-6 2/26/2008		Reference SR-07 R-7 3/10/2008	
128	128 + 166	450	C	803	C	319	C	840	C	271	C	366	C J
129	129 + 138 + 160 + 163	3,310	C	6,350	C	2,110	C	5,890	C	1,820	C	2,740	C J
130		56.5		76.2		79.7		124		45.5		81.1	J
131		1.33	EMPC	0.470	U	3.10		3.26	EMPC	1.08		1.94	J
132		48.5		13.8		72.1		122		25.7		32.4	J
133		66.5		123		40.6		97.1		34.4		53.8	J
134	134 + 143	13.2	C	7.32	C	19.1	C	29.3	C	7.86	C	12.4	C J
135	135 + 151 + 154	398	C	531	C	354	C	623	C	243	C	378	C J
136		40.7		29.8		43.1		73.6		24.0		36.2	J
137		94.4		179		62.4		172		57.8		64.6	J
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	52.4	C	91.9	C	35.6	C	88.2	C	28.3	C	40.8	C J
140	139 + 140		C139		C139		C139		C139		C139		C139
141		124		138		110		197		78.2		107	J
142		0.543	U	0.458	U	0.209	U	2.05	U	0.379	U	0.569	UJ
143	134 + 143		C134		C134		C134		C134		C134		C134
144		17.6		15.7		24.0		32.0		10.7		19.0	J
145		0.0920		0.0663	U	0.0653	U	0.0970	EMPC	0.119	U	0.153	UJ
146		470		922		353		722		280		447	J
147	147 + 149	149	C	81.2	C	186	C	330	C	76.6	C	101	C J
148		2.72		3.30		2.86		4.08		2.00		2.91	J
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.171	EMPC	0.0639	U	0.469		0.509		0.119	U	0.147	UJ
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.783	EMPC	0.735	EMPC	0.555		1.24		0.472	EMPC	0.738	J
153	153 + 168	4,190	C	9,000	C	2,290	C	7,430	C	1,950	C	2,930	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		3.90		7.09		2.47	EMPC	6.49		2.12		3.24	J
156	156 + 157	239	C	464	C	148	C	438	C	140	C	187	C J
157	156 + 157		C156		C156		C156		C156		C156		C156
158		268		504		173		482		148		206	J
159		1.84		0.324	U	2.21		3.48	EMPC	1.63	EMPC	2.01	EMPC
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.362	U	0.305	U	0.144	U	1.41	U	0.262	U	0.393	UJ
162		12.1		27.8		7.82		19.7		6.76		9.81	J
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		42.3		35.8		49.1		87.1		31.1		57.1	J
165		2.65		4.47		1.58	EMPC	3.99		1.65		1.88	EMPC
166	128 + 166		C128		C128		C128		C128		C128		C128
167		91.2		175		60.6		149		51.9		77.0	J
168	153 + 168		C153		C153		C153		C153		C153		C153
169		4.03	U	7.77	U	2.14	U	7.56	U	2.90	U	3.95	UJ
170		245		528		186		560		188		188	J
171	171 + 173	153	C	361	C	100	C	304	C	91.3	C	113	C J
172		43.8		80.5		34.8		78.8		33.8		35.2	J
173	171 + 173		C171		C171		C171		C171		C171		C171
174		21.5		9.27		31.8		50.6		16.3		21.9	J
175		8.12		15.1		8.19		13.7		5.72		9.25	J
176		3.43		1.58		5.38		8.51		1.97		3.13	J
177		62.0		79.9		84.5		146		47.4		75.6	J
178		164		357		109		257		93.4		150	J
179		59.1		67.8		72.6		127		44.7		69.2	J
180	180 + 193	756	C	1,940	C	514	C	1,650	C	523	C	576	C J
181		5.84		13.6		3.82		11.5		3.39	EMPC	4.84	J
182		3.00		5.69		2.14	EMPC	5.39		2.46	EMPC	2.91	J
183	183 + 185	321	C	722	C	203	C	550	C	194	C	279	C J
184		4.75		9.57		2.70		7.93		2.38		3.31	J
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0495	U	0.0683	U	0.0721	U	0.0777	U	0.192	U	0.133	UJ
187		520		1,060		503		917		381		634	J
188		1.54		2.85		1.32		2.43		1.12		1.67	J
189		8.59		0.318	U	5.20		17.2		5.98		6.73	J
190		131		322		78.1		260		78.2		102	J
191		14.6		36.9		8.48		28.6		9.42		11.8	J
192		0.0680	EMPC	0.0719	U	0.0870	EMPC	0.193	EMPC	0.208	U	0.144	UJ
193	180 + 193		C180		C180		C180		C180		C180		C180
194		75.0		158		52.9		162		57.7		57.6	J
195		59.2		158		37.3		133		38.8		40.3	J
196		49.0		117		32.4		97.3		34.2		42.3	J
197	197 + 200	11.5	C	27.7	C	7.31	C	22.5	C	7.29	C	8.82	C J
198	198 + 199	83.8	C	153	C	73.8	C	132	C	67.1	C	87.0	C J
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		14.7		37.4		12.5		25.7		10.7		16.3	J
202		91.1		225		55.0		151		48.2		72.1	J
203		155		420		82.7		296		90.6		122	J
204		0.259		0.650		0.133	EMPC	0.378	EMPC	0.129	U	0.187	J
205		6.54		17.8		4.58		13.4		3.91		5.26	J
206		36.0		88.4		25.8		78.8		27.4		34.1	J
207		8.85		22.0		5.72		17.0		6.57		7.86	J
208		10.2		21.8		9.30		17.5		8.42		12.4	J
209		15.1		41.1		13.1		32.3		12.9		21.6	J
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		22.0	J	37.5	J	15.9	J	38.4	J	12.3	J	19.3	J
Total PCBs as Congeners (KM-based)		21.9	J	37.5	J	15.9	J	38.3	J	12.2	J	19.2	J
Total PCBs as Congeners (KM-based, capped)		21.9	J	37.5	J	15.9	J	38.3	J	12.2	J	19.2	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-11
Sculpin PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference SR-08 R-8 10/9/2008		Reference SR-09 R-9 7/24/2008		Reference SR-10 R-10 7/23/2008		Reference SR-11 R-11 3/3/2008		Reference SR-12 R-12 10/9/2008		Reference SR-13 R-13 7/23/2008	
Individual Congeners in pg/g (ng/kg), wet weight													
1		0.182		0.166	EMPC	0.360	EMPC	0.231	EMPC	0.185	EMPC	0.231	EMPC
2		0.411	EMPC	0.672	EMPC	0.631	EMPC	0.450		0.483	EMPC	0.440	
3		0.236	EMPC	0.227	EMPC	0.428	EMPC	0.235	EMPC	0.245	EMPC	0.333	EMPC
4		2.10		2.49		4.05	EMPC	2.74		1.50		2.36	
5		0.229	U	0.199	U	0.371	U	0.207	U	0.140	U	0.220	U
6		1.10		1.70		2.18		1.70		0.818		1.75	
7		0.256	EMPC	0.283	EMPC	0.523	EMPC	0.221		0.180		0.218	EMPC
8		4.49		5.79		8.77		5.86		4.02		6.09	
9		0.366	EMPC	0.486		0.854		0.485	EMPC	0.286		0.310	
10		0.213	U	0.187	U	0.345	U	0.195	U	0.131	U	0.207	U
11		135		145		188		153		204		177	
12	12 + 13	0.219	C U	0.865	C EMPC	1.14	C	1.14	C EMPC	0.899	C	0.868	C EMPC
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.214	U	0.185	U	0.346	U	0.192	U	0.130	U	0.205	U
15		1.03		1.48		2.11		1.32		1.20		1.46	
16		4.60		7.35		10.4		7.77		4.10		13.9	
17		11.3		14.6		16.6		13.9		8.35		23.8	
18	18 + 30	21.0	C	31.9	C	35.4	C	32.1	C	18.1	C	53.1	C
19		0.566		0.918		1.90		1.17		0.552		0.986	
20	20 + 28	138	C	132	C	137	C	135	C	120	C	122	C
21	21 + 33	17.3	C	20.2	C	23.1	C	16.2	C	15.6	C	21.2	C
22		18.4		21.4		25.6		19.5		16.6		31.9	
23		0.137	U	0.0960		0.179	U	0.161		0.0764	U	0.165	U
24		0.245		0.421		0.490	EMPC	0.476	EMPC	0.306		0.505	EMPC
25		2.80		2.82		3.63		2.52		2.79		3.72	
26	26 + 29	14.5	C	14.6	C	16.3	C	15.1	C	14.2	C	15.5	C
27		1.25		2.25		2.91		2.21		1.17	EMPC	4.40	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		65.6		60.9		65.1		53.2		56.5		57.6	
32		2.65		3.92		5.34		3.61		1.84		3.38	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.434		0.514	EMPC	0.480		0.494		0.527		0.367	
35		0.141	U	0.0840	U	0.184	U	0.173	EMPC	0.148	EMPC	0.194	EMPC
36		0.117	U	0.0880	EMPC	0.153	U	0.117	EMPC	0.0724	U	0.157	U
37		1.73		3.61		6.08		3.97		2.59		2.41	
38		0.127	U	0.0747	U	0.166	U	0.0917	U	0.129	EMPC	0.217	EMPC
39		0.651	EMPC	0.821		0.842		0.763	EMPC	0.589		1.32	
40	40 + 41 + 71	20.4	C	27.1	C	39.5	C	23.7	C	18.6	C	29.1	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		14.4		24.8		31.6		22.6		0.0810	U	54.5	
43		4.02		5.23		5.78		5.05		4.49		4.26	
44	44 + 47 + 65	140	C	167	C	195	C	184	C	149	C	218	C
45	45 + 51	2.69	C	4.45	C	8.79	C	4.06	C	2.35	C EMPC	3.76	C
46		0.425	EMPC	0.753	EMPC	2.14	EMPC	0.814		0.447	EMPC	0.788	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		18.0		23.4		25.8		21.0		16.4		29.1	
49	49 + 69	135	C	132	C	138	C	154	C	141	C	134	C
50	50 + 53	0.994	C	2.28	C	7.73	C	3.31	C	1.18	C EMPC	4.64	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		253		285		333		307		315		312	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.0740	EMPC	0.0687	U	0.131	EMPC	0.0833	U	0.0780	EMPC	0.102	EMPC
55		0.283	U	0.256	U	0.278	U	0.313	U	0.214	U	0.381	U
56		13.4		17.7		34.0		15.1		15.1		26.5	
57		1.37		1.22		1.15		1.46		1.43		1.07	EMPC
58		1.14	EMPC	0.941		1.04		0.976		1.03	EMPC	0.607	EMPC
59	59 + 62 + 75	13.1	C	14.7	C	16.7	C	16.4	C	13.9	C	15.5	C
60		84.7		80.6		84.0		113		100		96.9	
61	61 + 70 + 74 + 76	520	C	466	C	493	C	602	C	575	C	574	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		20.9		19.2		20.0		29.3		23.8		20.8	
64		64.5		77.5		89.5		0.0727	U	71.0		77.5	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		393		380		389		536		477		481	
67		3.37		3.13		3.69		3.16		3.69		4.39	
68		3.57		3.39		3.49		4.12		4.16		3.46	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		6.68		5.74		6.17		7.90		8.43		5.17	
73		0.0560	U	0.0595	U	0.0994	U	0.0732	U	0.0593	U	0.0525	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		13.9		13.2		17.8		13.8		17.7		21.3	
78		0.272	U	0.246	U	0.269	U	0.302	U	0.206	U	0.367	U
79		2.53	EMPC	3.07		5.75	EMPC	3.47		2.58	EMPC	7.86	
80		0.244	U	0.529		0.241	U	0.446	EMPC	0.423	EMPC	0.474	
81		1.19	EMPC	1.04	EMPC	1.39	EMPC	1.42	EMPC	0.998	EMPC	1.56	EMPC
82		3.60		5.26		17.9		4.65		4.09		11.8	EMPC
83	83 + 99	1,060	C	940	C	1,220	C	1,720	C	1,490	C	1,290	C
84		7.56		12.8		43.3		12.4		10.8		22.4	
85	85 + 116 + 117	280	C	269	C	335	C	456	C	403	C	368	C
86	86 + 87 + 97 + 108 + 119 + 125	235	C	256	C	366	C	322	C	289	C	411	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	14.9	C	23.7	C	51.1	C	21.8	C	20.0	C	33.8	C
89		0.486	EMPC	0.781	EMPC	1.92	EMPC	0.582		0.598	EMPC	1.29	U
90	90 + 101 + 113	688	C	746	C	925	C	926	C	953	C	1,050	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		176		181		227		262		254		207	
93	93 + 95 + 98 + 100 + 102	166	C	198	C	283	C	232	C	240	C	238	C
94		0.258	U	0.123	U	0.326	U	0.226	U	0.248	U	1.33	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.850		0.921		1.60		0.883	EMPC	0.927		1.08	
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		3.11		2.84	EMPC	4.21		3.12		3.45		3.55	
104		0.110	U	0.0526	U	0.137	U	0.0866	U	0.104	U	0.155	U
105		593		531		692		937		828		885	
106		1.45	U	1.47	U	1.86	U	1.65	U	1.60	U	2.45	U
107	107 + 124	31.2	C	28.3	C	33.3	C	36.5	C	46.5	C	41.7	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		139		133		138		220		206		178	
110	110 + 115	425	C	544	C	748	C	585	C	554	C	768	C
111		2.20		1.90		2.61		3.97		2.98		2.97	
112		0.166	U	0.0788	U	0.209	U	0.145	U	0.159	U	0.886	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		37.6		34.7		47.8		68.3		54.4		60.5	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		1,790		1,720		2,190		3,130		2,800		2,790	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		11.8		11.0		13.6		21.6		17.7		12.1	
121		0.184	U	1.13		0.232	U	2.16		1.84		1.28	
122		1.59	U	1.70	U	3.66	EMPC	1.92	U	2.40	EMPC	2.83	U
123		21.6		23.2		29.8		35.8		33.3		47.0	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		3.40		3.35	EMPC	3.80		5.19		5.93		4.83	
127		2.65	EMPC	3.13		4.57	EMPC	5.76		4.70		7.05	

Table H-11
Sculpin PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference SR-08 R-8 10/9/2008		Reference SR-09 R-9 7/24/2008		Reference SR-10 R-10 7/23/2008		Reference SR-11 R-11 3/3/2008		Reference SR-12 R-12 10/9/2008		Reference SR-13 R-13 7/23/2008	
128	128 + 166	367	C	353	C	465	C	682	C	550	C	614	C
129	129 + 138 + 160 + 163	2,660	C	2,550	C	3,310	C	4,910	C	4,120	C	5,200	C
130		71.4		72.1		93.2		95.1		88.0		101	
131		1.41		1.48		4.08		1.37		1.72		3.67	EMPC
132		26.3		42.4		120		37.8		39.5		68.6	
133		50.8		48.8		59.8		96.1		76.3		62.4	
134	134 + 143	9.89	C	13.3	C	25.8	C	12.3	C	14.5	C	24.7	C
135	135 + 151 + 154	308	C	359	C	456	C	556	C	484	C	386	C
136		27.3		36.2		58.8		44.2		41.4		44.5	
137		73.3		64.1		106		150		132		168	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	40.8	C	38.1	C	53.3	C	80.6	C	66.6	C	65.5	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		91.2		94.5		135		144		155		155	
142		0.270	U	0.472	U	0.486	U	0.415	U	0.399	U	1.45	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		15.6		17.3		26.1		21.4		21.5		23.7	
145		0.0546	U	0.0551	U	0.184	EMPC	0.0546	U	0.0788	U	0.112	
146		413		421		531		769		645		642	
147	147 + 149	95.5	C	156	C	322	C	164	C	139	C	243	C
148		2.63		2.67		3.11		3.92		3.39		2.59	
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.145	EMPC	0.269	EMPC	0.773		0.268	EMPC	0.226		0.302	EMPC
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.571		0.691		1.02		0.890		0.904		1.07	
153	153 + 168	2,960	C	3,130	C	4,000	C	6,740	C	5,350	C	7,400	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		3.39		3.10		4.40		6.36		4.76		3.29	
156	156 + 157	192	C	178	C	270	C	374	C	322	C	402	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		219		191		265		415		338		383	
159		1.39		1.46		2.68	EMPC	1.83		1.46	EMPC	1.26	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.187	U	0.327	U	0.336	U	0.288	U	0.276	U	1.00	U
162		10.2		8.85		11.6		18.8		15.2		14.1	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		36.5		49.7		57.7		58.0		56.3		55.8	
165		1.98		1.89		2.26		3.87		2.85		2.15	
166	128 + 166		C128		C128		C128		C128		C128		C128
167		73.9		81.1		101		142		136		170	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		2.94	U	3.84	U	4.56	U	5.86	U	3.84	U	5.05	U
170		196		181		281		425		340		297	
171	171 + 173	121	C	112	C	150	C	263	C	190	C	177	C
172		36.5		33.8		49.7		65.1		58.7		46.0	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		15.7		22.8		47.4		21.9		21.9		24.7	
175		7.83		7.42		9.47		12.8		10.1		12.6	
176		2.40		3.50		8.24		3.44		3.43		6.51	
177		65.8		80.4		115		93.7		79.6		127	
178		136		131		159		247		189		193	
179		52.6		68.1		93.6		78.8		74.4		99.4	
180	180 + 193	584	C	576	C	841	C	1,360	C	1,020	C	998	C
181		4.27		3.94		5.73		9.47		7.52		9.42	EMPC
182		2.14		2.23		3.24	EMPC	4.87		3.17		6.30	
183	183 + 185	242	C	233	C	319	C	508	C	379	C	362	C
184		3.47		3.25		4.93		7.63		5.13		3.80	
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0565	U	0.0690	U	0.112	U	0.0644	U	0.0647	U	0.384	U
187		509		627		661		844		673		818	
188		1.40	EMPC	1.31		1.67		2.45		1.95		2.45	
189		6.40		5.93		9.63		14.2		11.5		9.74	
190		98.2		98.7		135		227		172		146	
191		10.3		10.2		14.7		25.6		17.5		19.2	
192		0.0960		0.0960		0.121	U	0.199		0.104		0.427	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		53.1		55.1		84.5		130		104		71.4	
195		41.6		44.3		66.2		124		83.2		70.8	
196		32.4		34.7		54.3		90.8		62.5		50.3	
197	197 + 200	8.12	C	8.57	C	12.2	C	20.6	C	14.6	C	13.5	C
198	198 + 199	67.5	C	81.0	C	96.6	C	130	C	112	C	93.6	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		12.2		14.6		17.6		26.8		21.6		27.6	
202		70.4		71.3		84.0		161		120		118	
203		98.9		113		151		290		193		188	
204		0.194	EMPC	0.245		0.212	EMPC	0.401	EMPC	0.315		0.392	EMPC
205		4.93		5.08		7.20		13.0		8.62		8.12	
206		31.0		31.1		46.3		66.0		45.8		42.1	
207		6.60		6.47		10.3		16.2		11.1		9.85	
208		10.1		10.5		13.5		17.9		14.0		13.7	
209		16.8		16.9		23.6		34.6		24.0		20.9	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		18.2	J	18.5	J	24.0	J	32.4	J	27.6	J	31.5	J
Total PCBs as Congeners (KM-based)		18.1	J	18.4	J	24.0	J	32.4	J	27.5	J	31.5	J
Total PCBs as Congeners (KM-based, capped)		18.1	J	18.4	J	24.0	J	32.4	J	27.5	J	31.5	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-11
Sculpin PCB Congener Analysis Results
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IUPAC #	COELUTING CONGENERS[1]	Reference SR-14 R-14 10/10/2008		Reference SR-15 R-15 10/9/2008		Reference SR-16 R-16 10/10/2008		Reference SR-17 R-17 10/9/2008		Reference SR-18 R-18 7/24/2008		Forebay - Goose Island P110 090429110SC 4/29/2009	
Individual Congeners in pg/g (ng/kg), wet weight													
1		0.368	EMPC	0.175		0.163	EMPC	0.234	EMPC	0.228		0.437	EMPC
2		0.523		0.295	EMPC	0.396	EMPC	0.589		0.447	EMPC	0.294	
3		0.471	EMPC	0.231	EMPC	0.241		0.274	EMPC	0.238		0.388	EMPC
4		2.46	EMPC	1.29		1.88		1.80		1.94		3.87	EMPC
5		0.605	U	0.290	U	0.251	U	0.245	U	0.407	U	0.519	U
6		1.36	EMPC	0.637		1.10		1.08		1.23	EMPC	2.16	
7		0.572	U	0.268	U	0.233		0.298	EMPC	0.375	U	0.485	U
8		5.51		2.81		4.46		5.31		5.02		7.58	
9		0.560	EMPC	0.259	U	0.272		0.380		0.406	EMPC	0.540	EMPC
10		0.562	U	0.273	U	0.236	U	0.230	U	0.383	U	0.462	U
11		183		109		177		264		139		34.1	
12	12 + 13	0.580	C U	0.694	C	0.239	C U	0.233	C U	0.388	C U	0.534	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.565	U	0.270	U	0.233	U	0.227	U	0.378	U	0.507	U
15		1.10	EMPC	0.932		1.15	EMPC	1.88	EMPC	1.41		1.05	EMPC
16		7.31		2.89		6.85		5.43		6.97		8.56	
17		12.9		5.33		9.92		12.2		11.4		17.8	
18	18 + 30	28.1	C	13.2	C	23.7	C	27.9	C	26.3	C	37.6	C
19		1.03	EMPC	0.573		0.674		0.444		1.05	EMPC	1.26	
20	20 + 28	142	C	67.2	C	76.9	C	155	C	117	C	155	C
21	21 + 33	21.3	C	8.28	C	12.8	C	23.4	C	17.2	C	29.7	C
22		23.5		8.69		15.4		21.2		16.8		23.1	
23		0.210	U	0.171	U	0.233	U	0.152	EMPC	0.142	EMPC	0.143	EMPC
24		0.398		0.201		0.262	EMPC	0.357	EMPC	0.360		0.644	EMPC
25		3.39		1.33		2.14		3.37		2.69		2.42	
26	26 + 29	16.4	C	7.57	C	9.32	C	17.9	C	13.9	C	14.2	C
27		2.01		0.839		1.73		1.70		1.90		3.15	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		70.6		27.5		38.7		80.1		55.9		38.0	
32		3.64		1.12		1.70	EMPC	3.30		3.40		9.17	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.201	U	0.225	EMPC	0.349	EMPC	0.612		0.527		0.537	
35		0.215	U	0.183	U	0.248	U	0.199	EMPC	0.142	U	0.123	U
36		0.179	U	0.162	U	0.221	U	0.146	EMPC	0.126	U	0.107	U
37		2.13		2.50		2.79	EMPC	3.33		2.64		2.36	
38		0.194	U	0.162	U	1.25	U	0.268	EMPC	0.126	U	0.108	U
39		0.948		0.279	EMPC	0.496		0.948	EMPC	0.739		0.556	
40	40 + 41 + 71	33.4	C	8.80	C	12.8	C	22.3	C	22.5	C	35.1	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		31.5		6.15		14.3		11.7		18.2		15.6	
43		5.61		2.25		2.41		5.71		4.45		5.01	
44	44 + 47 + 65	196	C	70.2	C	87.6	C	156	C	142	C	104	C
45	45 + 51	5.36	C	1.39	C EMPC	2.41	C	2.93	C	4.54	C	4.24	C
46		1.09		0.248	EMPC	0.225		0.394	EMPC	0.963	EMPC	0.608	EMPC
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		26.3		7.80		11.5		18.9		18.6		15.2	
49	49 + 69	148	C	61.2	C	65.0	C	146	C	117	C	92.5	C
50	50 + 53	2.89	C	0.790	C	1.70	C	0.234	C EMPC	3.02	C EMPC	1.99	C EMPC
51	45 + 51		C45		C45		C45		C45		C45		C45
52		356		143		157		374		296		161	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.152	U	0.0919	U	0.0958	U	0.166	EMPC	0.132	EMPC	0.130	U
55		0.618	U	0.358	U	0.328	U	0.409	U	0.401	U	6.82	
56		25.7		7.88		11.5		17.8		23.0		17.1	
57		1.60	EMPC	0.745		0.639		1.70		1.23		0.714	
58		1.55	EMPC	0.517	EMPC	0.567	EMPC	1.23	EMPC	0.762	EMPC	0.752	U
59	59 + 62 + 75	17.7	C	6.41	C	4.90	C	14.7	C	12.8	C	10.4	C
60		91.3		68.7		48.3		123		95.7		62.1	
61	61 + 70 + 74 + 76	575	C	332	C	293	C	660	C	490	C	249	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		21.3		20.9		12.8		24.6		20.4		12.2	
64		94.3		31.3		36.4		80.3		65.3		51.4	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		432		342		244		524		381		236	
67		4.19		1.52		2.28		4.26		2.86		1.60	
68		5.28		3.06		2.30	EMPC	5.20		3.34		0.811	
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		7.11		4.59		3.79		8.47		6.59		3.30	
73		0.135	U	0.0820	U	0.0832	U	0.0585	U	0.0940	U	0.103	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		19.4		16.0		14.0		25.9		13.2		7.99	
78		0.596	U	0.344	U	0.316	U	0.394	U	0.386	U	0.772	U
79		4.54		2.03	EMPC	2.89		3.58		5.94		0.997	
80		0.785	EMPC	0.428	EMPC	0.287	U	0.662		0.567	EMPC	0.675	U
81		1.57	EMPC	1.49	EMPC	0.829	EMPC	2.21	EMPC	1.22	EMPC	0.882	EMPC
82		10.4		2.35		3.81		2.79	EMPC	10.2	EMPC	4.24	EMPC
83	83 + 99	1,040	C	1,160	C	664	C	1,670	C	1,080	C	398	C
84		27.0		5.05		8.10		8.84		18.7		4.60	
85	85 + 116 + 117	300	C	290	C	213	C	450	C	308	C	132	C
86	86 + 87 + 97 + 108 + 119 + 125	403	C	148	C	170	C	279	C	300	C	103	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	45.1	C	7.63	C	12.8	C	22.4	C	25.0	C	5.64	C
89		1.75	EMPC	0.306	U	0.497		1.23	EMPC	1.27	U	0.343	U
90	90 + 101 + 113	1,150	C	397	C	445	C	1,050	C	823	C	176	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		253		115		104		281		215		56.4	
93	93 + 95 + 98 + 100 + 102	268	C	90.3	C	124	C	261	C	230	C	73.0	C
94		0.607	U	0.318	U	0.198	U	0.265	U	1.30	U	0.345	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		1.50		0.350		0.390	U	1.22		1.16		0.509	EMPC
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		5.31		1.10	EMPC	1.46	EMPC	3.56		3.61	EMPC	0.749	EMPC
104		0.150	U	0.144	U	0.171	U	0.111	U	0.262	U	0.119	U
105		614		694		442		908		717		362	
106		2.16	U	2.76	U	1.67	U	2.37	U	2.21	U	0.851	U
107	107 + 124	41.1	C	18.9	C	26.1	C	58.2	C	30.9	C	12.9	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		151		201		125		210		160		53.1	
110	110 + 115	889	C	216	C	363	C	693	C	566	C	186	C
111		2.36		3.56		1.92		3.11		2.04	EMPC	1.00	
112		0.389	U	0.204	U	0.127	U	0.170	U	0.870	U	0.231	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		40.3		64.4		33.7		57.8		43.9		22.0	
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		1,920		3,110		1,610		2,850		1,930		872	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		12.6		18.3		10.0		17.9		11.8		3.45	
121		1.28	EMPC	1.24	EMPC	0.795		1.80		1.22		0.455	
122		2.38	U	3.21	U	1.94	U	2.75	U	10.3	EMPC	1.04	U
123		32.0	EMPC	42.3		21.9		40.2		31.3		16.3	
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		5.20		4.93		3.13		5.52		3.91		3.15	
127		2.20	U	7.99	EMPC	3.94		7.91		4.02	EMPC	1.51	EMPC

Table H-11
Sculpin PCB Congener Analysis Results
(Page 12 of 12)

IUPAC #	COELUTING CONGENERS[1]	Reference SR-14 R-14 10/10/2008		Reference SR-15 R-15 10/9/2008		Reference SR-16 R-16 10/10/2008		Reference SR-17 R-17 10/9/2008		Reference SR-18 R-18 7/24/2008		Forebay - Goose Island P110 090429110SC 4/29/2009	
128	128 + 166	391	C	570	C	344	C	653	C	519	C	194	C
129	129 + 138 + 160 + 163	2,960	C	4,940	C	2,800	C	5,620	C	4,110	C	1,130	C
130		127		48.8		56.5		102		102		18.2	
131		3.25		0.829	EMPC	1.82	EMPC	2.13		2.35	EMPC	0.798	U
132		101		18.0		32.1		47.5		66.9		10.7	
133		54.9		78.8		46.1		79.4		70.2		16.8	
134	134 + 143	1.62	C U	5.99	C	0.467	C U	17.9	C	19.5	C	2.28	C
135	135 + 151 + 154	479	C	219	C	235	C	460	C	438	C	94.7	C
136		62.9		15.6		20.2		47.6		44.5		9.96	
137		76.0		163		80.0		146		105		33.1	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	42.9	C	60.8	C	35.4	C	71.5	C	57.0	C	15.6	C
140	139 + 140		C139		C139		C139		C139		C139		C139
141		138		90.1		81.9		188		1.55	U	49.7	
142		1.61	U	0.524	U	0.465	U	0.557	U	1.75	U	0.812	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		35.6		7.52		11.6		21.3		21.1		4.25	
145		0.160	U	0.0861	U	0.0872	U	0.0896	U	0.132	U	0.113	U
146		517		627		410		661		617		114	
147	147 + 149	315	C	64.2	C	119	C	158	C	225	C	38.4	C
148		4.41		1.17		1.65		3.16		3.46		0.473	EMPC
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.524	EMPC	0.126		0.106		0.242		0.258		0.107	U
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		1.00		0.427	EMPC	0.225	EMPC	1.16	EMPC	0.828	EMPC	0.254	EMPC
153	153 + 168	3,230	C	6,360	C	4,080	C	5,380	C	4,970	C	1,050	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		3.71		4.95		2.35	EMPC	5.48		4.10		1.20	EMPC
156	156 + 157	203	C	402	C	193	C	350	C	257	C	106	C
157	156 + 157		C156		C156		C156		C156		C156		C156
158		215		356		194		395		314		86.7	
159		3.35		1.54	EMPC	1.07	EMPC	2.56		2.40		0.567	U
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		1.12	U	0.363	U	0.323	U	0.386	U	1.21	U	0.570	U
162		10.1		19.4		9.38		17.2		13.7		4.48	
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		71.6		21.2		34.3		68.2		66.0		23.4	
165		1.91		3.33	EMPC	1.75		3.18	EMPC	2.26		0.718	
166	128 + 166		C128		C128		C128		C128		C128		C128
167		96.8		146		91.0		139		99.2		34.8	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		3.66	U	9.29	U	4.88	U	7.12	U	4.67	U	1.31	U
170		205		398		186		342		252		113	
171	171 + 173	120	C	221	C	108	C	194	C	150	C	47.8	C
172		41.6		56.0		31.3	EMPC	60.0		48.7		17.4	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		49.3		15.4		14.2		31.4		30.5		8.12	
175		12.1		9.08		6.65		11.8		11.5		2.37	
176		8.71		1.82	EMPC	2.90	EMPC	4.44		4.85	EMPC	0.687	
177		155		50.7		63.3		94.0		88.8		19.3	
178		159		195		115		196		173		41.6	
179		123		31.6		48.6		96.2		79.0		11.5	
180	180 + 193	630	C	1,510	C	670	C	1,020	C	756	C	264	C
181		4.38	EMPC	10.8	EMPC	5.26	EMPC	6.52		7.05		1.52	
182		2.74		5.63		4.19	EMPC	3.01	EMPC	7.02	EMPC	1.28	EMPC
183	183 + 185	273	C	445	C	239	C	396	C	316	C	89.0	C
184		3.62		6.29		3.05	EMPC	6.34		4.22		0.886	
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.154	U	0.417	U	0.352	U	0.402	U	0.332	U	0.149	U
187		889		668		515		700		723		200	
188		2.32		2.02		1.51		1.92		2.28		0.414	EMPC
189		6.90		15.4		8.20		11.0	EMPC	9.20		3.83	
190		102		229		101		158		120		44.0	
191		11.0		32.9		14.5		19.3		16.5		5.34	
192		0.167	U	0.464	U	0.392	U	0.447	U	0.369	U	0.157	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		56.8		144		67.3		107		74.8		35.7	
195		43.5		127		56.8		77.0		59.6		23.6	
196		38.0		95.7		40.4		60.8		46.6		19.6	
197	197 + 200	10.8	C	18.6	C	9.27	C	15.7	C	11.2	C	3.63	C
198	198 + 199	99.5	C	107	C	70.8	C	109	C	99.0	C	45.2	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		20.1		21.6		16.9		20.7		18.8		3.32	
202		74.1		129		72.3		115		86.6		26.9	
203		111		274		141		184		137		60.7	
204		0.174		0.367	U	0.364	U	0.368	U	0.482	EMPC	0.132	
205		5.00		12.3		5.91		8.02		6.69		3.29	
206		30.8		63.1		35.6		49.3		37.6		21.3	
207		6.81		15.9		8.05		9.45		8.40		3.24	
208		12.4		13.5		9.81		13.4		11.9		6.62	
209		15.8		30.6		17.2		24.2		20.4		11.0	
Total PCBs as Congeners in ug/kg, wet weight													
Total PCBs as Congeners (full EMPC/full SDL)		22.3	J	27.2	J	17.4	J	30.6	J	24.3	J	8.17	J
Total PCBs as Congeners (KM-based)		22.3	J	27.2	J	17.3	J	30.5	J	24.2	J	8.14	J
Total PCBs as Congeners (KM-based, capped)		22.3	J	27.2	J	17.3	J	30.5	J	24.2	J	8.14	J

Notes:

C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
ng/kg = nanogram/kilogram
ug/kg = micrograms/kilogram
pg/g = picograms/gram

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
RDL = Reported detection limit
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-12
High-Volume Surface Water PCB Congener Analysis Results
(Page 1 of 6)

		Forebay - P52				Forebay - P53				Forebay - P54			
IUPAC #	COELUTING CONGENERS[1]	08021252XA D 2/12/2008 (Filter)		08021252XA D 2/12/2008 (Column)		08022453XA D 2/24/2008 (Filter)		08022453XA D 2/24/2008 (Column)		08021354XA D 2/13/2008 (Filter)		08021354XA D 2/13/2008 (Column)	
1		0.13		0.385		0.021	U	0.191		0.051	U	0.267	
2		0.265		0.371		0.042	U	0.27		0.125		0.293	
3		0.201		0.324		0.041	U	0.162	U	0.14		0.249	
4		0.02	U	0.369		0.063	U	0.409		0.082	U	0.42	
5		0.007	U	0.014	EMPC	0.004	U	0.022		0.0069	U	0.012	
6		0.009	U	0.101		0.0037	U	0.115		0.011	U	0.109	
7		0.011	U	0.036	U	0.009	U	0.031	U	0.0064	U	0.033	U
8		0.043	U	0.416		0.0034	U	0.518		0.051	U	0.487	
9		0.007	U	0.029	U	0.005	U	0.039		0.0061	U	0.039	
10		0.0058	U	0.015	EMPC	0.006		0.017		0.011	EMPC	0.021	
11		4.12		83.5		10.8		137		7.16		82.4	
12	12 + 13	0.054	C	0.0091	C U	0.004	C U	0.0051	C U	0.0069	C U	0.0049	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.0067	U	0.009		0.0038	U	0.01		0.0064	U	0.008	
15		0.054	U	0.654		0.07	U	0.741		0.073	U	0.531	
16		0.034	U	0.261		0.039	U	0.287		0.034	U	0.279	
17		0.032	U	0.24		0.104		0.267		0.11		0.253	
18	18 + 30	0.071	C U	0.588	C	0.104	C U	0.637	C	0.079	C U	0.64	C
19		0.01	U	0.097		0.208		0.1		0.306		0.101	
20	20 + 28	0.165	C U	0.67	C	0.259	C	0.741	C	0.216	C	0.656	C
21	21 + 33	0.053	C U	0.269	C	0.096	C U	0.3	C	0.081	C U	0.257	C
22		0.051	U	0.25		0.077	EMPC	0.271		0.068		0.235	
23		0.0017	U	0.006	U	0.004	U	0.003	U	0.018	U	0.0038	U
24		0.0014	U	0.015	EMPC	0.0008	U	0.014	EMPC	0.0014	U	0.012	EMPC
25		0.01	U	0.047	EMPC	0.028		0.052		0.028		0.044	
26	26 + 29	0.023	C U	0.112	C	0.046	C	0.126	C	0.041	C	0.116	C
27		0.007	U	0.045		0.062		0.051		0.074		0.05	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		0.121	U	0.532		0.178		0.632		0.148		0.555	
32		0.015	U	0.121		0.066		0.14		0.078		0.138	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.0016	U	0.005	U	0.006	U	0.003	U	0.016	U	0.0038	U
35		0.018		0.079		0.035		0.121		0.028		0.081	
36		0.006	EMPC	0.02	EMPC	0.009		0.031		0.003	EMPC	0.02	
37		0.057	U	0.12		0.082		0.147		0.078	EMPC	0.121	
38		0.0017	U	0.0049	U	0.004	EMPC	0.003	EMPC	0.02	EMPC	0.007	
39		0.0017	U	0.006	EMPC	0.002		0.0029	U	0.0028	U	0.0037	U
40	40 + 41 + 71	0.081	C	0.21	C	0.204	C	0.213	C	0.223	C	0.198	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		0.037		0.101		0.082		0.113		0.083		0.097	
43		0.004	EMPC	0.0033	U	0.025		0.027		0.03		0.021	
44	44 + 47 + 65	0.202	C U	0.53	C	1.61	C	0.707	C	1.95	C	0.506	C U
45	45 + 51	0.031	C U	0.096	C U	0.381	C	0.11	C U	0.483	C	0.088	C U
46		0.006	U	0.033		0.023	EMPC	0.035	EMPC	0.022	EMPC	0.032	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		0.03		0.0027	U	0.051		0.0013	U	0.047		0.085	
49	49 + 69	0.104	C	0.289	C	0.484	C	0.309	C	0.574	C	0.275	C
50	50 + 53	0.021	C	0.083	C EMPC	0.262	C	0.08	C	0.344	C	0.085	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		0.254		0.878		0.629		0.941		0.629		0.856	
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.002	U	0.004	U	0.121		0.002	U	0.175		0.004	U
55		0.005	EMPC	0.0096	U	0.0051	U	0.006	EMPC	0.009	EMPC	0.01	
56		0.101		0.121	EMPC	0.135		0.147		0.125		0.12	
57		0.0045	U	0.009	U	0.005		0.0055	U	0.01		0.0061	U
58		0.0047	U	0.0091	U	0.0052	U	0.0056	U	0.0048	U	0.0061	U
59	59 + 62 + 75	0.016	C	0.045	C	0.076	C	0.047	C	0.086	C	0.046	C EMPC
60		0.056	EMPC	0.076		0.073		0.086		0.065		0.074	
61	61 + 70 + 74 + 76	0.429	C	0.669	C	0.574	C	0.744	C	0.558	C	0.664	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		0.009		0.019	EMPC	0.012		0.017		0.015	EMPC	0.009	
64		0.083		0.201		0.118		0.225		0.106		0.198	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		0.23		0.276		0.314		0.277		0.319		0.283	
67		0.007	EMPC	0.01		0.006		0.012		0.009	EMPC	0.0055	U
68		0.007	U	0.014	U	0.022	U	0.021	U	0.025	U	0.0065	U
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		0.0044	U	0.0089	U	0.008	EMPC	0.0054	U	0.012		0.006	U
73		0.0015	U	0.015	EMPC	0.027		0.016		0.038		0.003	
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		0.031	U	0.033	U	0.056		0.077	EMPC	0.046		0.033	U
78		0.005	U	0.0096	U	0.0055	U	0.0059	U	0.0051	U	0.0064	U
79		0.008	EMPC	0.0085	U	0.013		0.009	EMPC	0.013		0.0057	U
80		0.004	U	0.0083	U	0.0044	U	0.0051	U	0.0045	U	0.0056	U
81		0.0045	U	0.0098	U	0.0052	U	0.0059	U	0.006	U	0.0064	U
82		0.06		0.047		0.082		0.063		0.073		0.049	EMPC
83	83 + 99	0.295	C	0.257	C	0.922	C	0.31	C	0.973	C	0.243	C
84		0.091		0.147		0.19		0.168		0.202		0.141	
85	85 + 116 + 117	0.101	C	0.065	C EMPC	0.178	C	0.104	C	0.173	C	0.076	C
86	86 + 87 + 97 + 108 + 119 + 125	0.358	C	0.339	C	0.717	C	0.463	C	0.685	C	0.332	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	0.057	C	0.069	C EMPC	0.202	C	0.071	C	0.249	C	0.065	C EMPC
89		0.005	EMPC	0.006	EMPC	0.007	EMPC	0.007	EMPC	0.009	EMPC	0.005	EMPC
90	90 + 101 + 113	0.542	C	0.54	C	1.54	C	0.633	C	1.78	C	0.505	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		0.108		0.104		0.337		0.117		0.421		0.1	
93	93 + 95 + 98 + 100 + 102	0.323	C	0.548	C	1.25	C	0.627	C	1.43	C	0.51	C
94		0.0025	U	0.004		0.054		0.003	U	0.079		0.0025	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.003		0.004		0.026		0.005	EMPC	0.028		0.002	EMPC
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		0.003		0.0029	U	0.062		0.0024	U	0.082		0.003	EMPC
104		0.001	U	0.002	U	0.022	U	0.001	U	0.035	EMPC	0.0012	U
105		0.221		0.119		0.339		0.163		0.332		0.114	
106		0.0039	U	0.0049	U	0.0049	U	0.007		0.0097	U	0.0038	U
107	107 + 124	0.023	C	0.01	C EMPC	0.037	C EMPC	0.021	C EMPC	0.035	C	0.017	C EMPC
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		0.046		0.034		0.075		0.041	EMPC	0.078		0.027	EMPC
110	110 + 115	0.644	C	0.575	C	1.08	C	0.721	C	1.04	C	0.551	C
111		0.0018	U	0.0025	U	0.003		0.0021	U	0.0012	U	0.0017	U

Table H-12
High-Volume Surface Water PCB Congener Analysis Results
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		Forebay - P52				Forebay - P53				Forebay - P54			
IUPAC #	COELUTING CONGENERS[1]	08021252XA D 2/12/2008 (Filter)		08021252XA D 2/12/2008 (Column)		08022453XA D 2/24/2008 (Filter)		08022453XA D 2/24/2008 (Column)		08021354XA D 2/13/2008 (Filter)		08021354XA D 2/13/2008 (Column)	
112		0.0018	U	0.0025	U	0.0017	U	0.0021	U	0.072		0.0017	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		0.017	U	0.012	U	0.02	U	0.009	U	0.025	U	0.008	U
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		0.518		0.36		1.07		0.499		0.947		0.325	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		0.0017	U	0.0023	U	0.007		0.002	U	0.009	EMPC	0.0016	U
121		0.0018	U	0.0024	U	0.007		0.0021	U	0.009		0.0017	U
122		0.008	EMPC	0.0053	U	0.01	EMPC	0.0034	U	0.0106	U	0.0041	U
123		0.013	U	0.007	U	0.017	U	0.009	EMPC	0.018	U	0.0037	U
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		0.004	U	0.0054	U	0.0057	U	0.006	U	0.0112	U	0.0042	U
127		0.0041	U	0.0047	U	0.0051	U	0.003	U	0.0097	U	0.0036	U
128	128 + 166	0.13	C	0.04	C	0.344	C	0.053	C	0.389	C	0.036	C
129	129 + 138 + 160 + 163	0.864	C	0.288	C	4.18	C	0.379	C	4.43	C	0.246	C
130		0.052		0.019		0.15		0.024		0.159		0.018	
131		0.008		0.004	U	0.024		0.006	EMPC	0.024	EMPC	0.003	U
132		0.209		0.094		0.74		0.115		0.799		0.081	
133		0.015	EMPC	0.0038	U	0.061		0.007	U	0.076		0.006	U
134	134 + 143	0.038	C	0.019	C EMPC	0.134	C	0.021	C	0.175	C	0.017	C
135	135 + 151 + 154	0.209	C	0.124	C	1.19	C	0.116	C	1.6	C	0.105	C
136		0.063	EMPC	0.038		0.32		0.039		0.393		0.031	
137		0.04		0.012	EMPC	0.08		0.015		0.07	EMPC	0.009	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	0.012	C	0.0036	C U	0.027	C EMPC	0.008	C	0.031	C	0.003	C EMPC
140	139 + 140		C139		C139		C139		C139		C139		C139
141		0.129		0.044		0.8		0.05		1		0.039	
142		0.0023	U	0.004	U	0.009	U	0.0014	U	0.012	U	0.003	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		0.027		0.016		0.143		0.014	EMPC	0.188		0.012	
145		0.0008	U	0.0015	U	0.001	EMPC	0.0011	U	0.002	EMPC	0.0013	U
146		0.115		0.047		0.563		0.055		0.686		0.044	
147	147 + 149	0.54	C	0.257	C	2.75	C	0.275	C	2.94	C	0.228	C
148		0.002		0.0018	U	0.012		0.0013	U	0.016		0.0016	U
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.001	EMPC	0.0014	U	0.011		0.001	U	0.016		0.0012	U
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.001	EMPC	0.0013	U	0.011		0.001	U	0.017		0.0012	U
153	153 + 168	0.686	C	0.261	C	4.13	C	0.301	C	4.99	C	0.214	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.002	U	0.002	U	0.006	U	0.001	U	0.011	U	0.002	U
156	156 + 157	0.085	C	0.026	C U	0.319	C	0.036	C	0.359	C	0.023	C U
157	156 + 157		C156		C156		C156		C156		C156		C156
158		0.07		0.029		0.284		0.031		0.351		0.021	EMPC
159		0.008	EMPC	0.0027	U	0.036	EMPC	0.003	EMPC	0.056		0.002	U
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.0016	U	0.0027	U	0.0062	U	0.001	U	0.0085	U	0.0021	U
162		0.0017	U	0.0029	U	0.0068	U	0.001	U	0.0088	U	0.0022	U
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		0.056		0.018		0.169		0.025		0.209		0.014	
165		0.0019	U	0.0031	U	0.0072	U	0.0011	U	0.0096	U	0.0023	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		0.033		0.014		0.139		0.013		0.148		0.01	
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.0017	U	0.0029	U	0.0066	U	0.0014	U	0.0088	U	0.0021	U
170		0.161		0.033		1.51		0.032		2.08		0.019	U
171	171 + 173	0.056	C EMPC	0.011	C	0.398	C	0.011	C EMPC	0.539	C	0.006	C EMPC
172		0.028		0.009	EMPC	0.247		0.006		0.343		0.006	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		0.168		0.051	U	0.878		0.046	U	1.18		0.03	U
175		0.008	EMPC	0.0016	U	0.047		0.001	EMPC	0.069		0.002	EMPC
176		0.019		0.008	EMPC	0.131		0.006	EMPC	0.178		0.005	EMPC
177		0.121	EMPC	0.033		0.835		0.03		1.19		0.023	
178		0.043		0.016		0.245		0.015	EMPC	0.337		0.011	EMPC
179		0.068		0.023	EMPC	0.391		0.02		0.499		0.015	
180	180 + 193	0.359	C	0.115	C U	3.51	C	0.107	C U	4.82	C	0.061	C U
181		0.001	U	0.0016	U	0.006		0.0012	U	0.012		0.0014	U
182		0.002	U	0.002	U	0.008	U	0.002	U	0.012	U	0.0013	U
183	183 + 185	0.129	C	0.04	C EMPC	0.907	C	0.039	C U	1.27	C	0.023	C U
184		0.002	EMPC	0.0011	U	0.003	EMPC	0.0009	U	0.002	EMPC	0.001	U
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.0008	U	0.0012	U	0.0009	U	0.0009	U	0.0009	U	0.0011	U
187		0.265		0.112	U	1.7		0.09	U	2.47		0.07	U
188		0.002	U	0.001	U	0.004	U	0.0008	U	0.008	U	0.0009	U
189		0.007	U	0.004	U	0.064		0.0022	U	0.09	EMPC	0.0025	U
190		0.038		0.008		0.287		0.009		0.409		0.006	EMPC
191		0.01	EMPC	0.002	EMPC	0.055		0.0009	U	0.076		0.001	U
192		0.0009	U	0.0014	U	0.001	U	0.001	U	0.001	U	0.0012	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		0.075		0.032	U	0.656		0.029	U	0.88		0.01	U
195		0.028		0.008		0.241		0.01	EMPC	0.302		0.005	EMPC
196		0.038		0.031		0.257		0.027		0.374		0.013	U
197	197 + 200	0.014	C EMPC	0.016	C EMPC	0.064	C	0.013	C EMPC	0.09	C	0.006	C
198	198 + 199	0.099	C EMPC	0.101	C U	0.489	C	0.102	C	0.711	C	0.041	C U
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		0.012	EMPC	0.012	EMPC	0.049		0.013		0.078		0.006	EMPC
202		0.028	EMPC	0.024	EMPC	0.077		0.023		0.109		0.01	U
203		0.063		0.075		0.331		0.081		0.466		0.03	EMPC
204		0.0008	U	0.001	U	0.0008	U	0.001	U	0.001		0.0009	U
205		0.003	U	0.003	U	0.033		0.003	U	0.048		0.002	U
206		0.054		0.034		0.118		0.036		0.15		0.018	EMPC
207		0.008		0.014	EMPC	0.016		0.016	EMPC	0.021	EMPC	0.0048	U
208		0.021	U	0.034		0.028		0.028	U	0.035		0.011	U
209		0.067		0.017	U	0.071		0.012	U	0.073		0.012	U
Total PCBs as Congeners (full EMPC/full SDL)		16.3	J	99.0	J	56.4	J	154	J	62.1	J	96.9	J
Total PCBs as Congeners (KM-based)		14.7	J	97.7	J	55.7	J	153	J	61.2	J	95.7	J
Total PCBs as Congeners (KM-based, capped)		14.7	J	97.7	J	55.7	J	153	J	61.2	J	95.7	J

Notes:

All results are in units of pg/L (picograms/Liter)
C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
RDL = Reported detection limit

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-12
High-Volume Surface Water PCB Congener Analysis Results
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		Forebay - P55				Forebay - P56				Reference - P57				Reference - P58			
IUPAC #	COELUTING CONGENERS[1]	08022555XA D 2/25/2008 (Filter)		08022555XA D 2/25/2008 (Column)		08022156XA D 2/26/2008 (Filter)		08022156XA D 2/26/2008 (Column)		08022757XA D 2/27/2008 (Filter)		08022757XA D 2/27/2008 (Column)		08030758XA D 3/7/2008 (Filter)		08030758XA D 3/7/2008 (Column)	
1		0.019	U	0.197		0.026	U	0.211		0.01	U	0.164		0.016	U	0.185	
2		0.055		0.256		0.069		0.282		0.033	U	0.291		0.034	U	0.236	
3		0.033	U	0.133		0.057	U	0.192	U	0.016	U	0.132		0.028	U	0.135	
4		0.03	U	0.43		0.033	U	0.496		0.024	U	0.364		0.024	U	0.392	
5		0.0065	U	0.02		0.0053	U	0.02		0.0071	U	0.023		0.005	U	0.013	
6		0.011	U	0.108		0.017	U	0.127		0.009	U	0.114		0.012	U	0.106	
7		0.013	U	0.034	U	0.015	U	0.038	U	0.008	U	0.029	U	0.005	U	0.037	U
8		0.055	U	0.487		0.09	U	0.487		0.045	U	0.497		0.056	U	0.501	
9		0.007	U	0.037		0.006	U	0.045		0.0063	U	0.038		0.0045	U	0.037	
10		0.0054	U	0.016		0.0045	U	0.021	EMPC	0.006	U	0.018		0.0042	U	0.017	
11		9.26		139		9.18		125		13.3		140		7.85		91.6	
12	12 + 13	0.0065	C U	0.0054	C U	0.0053	C U	0.0052	C U	0.0071	C U	0.0081	C U	0.005	C U	0.385	C
13	12 + 13		C12		C12		C12		C12		C12		C12		C12		C12
14		0.0061	U	0.011		0.005	U	0.009	EMPC	0.0067	U	0.0077	U	0.0047	U	0.01	
15		0.065	U	0.586	EMPC	0.141		0.275	U	0.044	U	0.261		0.056	U	0.761	
16		0.032	U	0.295		0.074		0.287		0.031	U	0.288		0.038	U	0.289	
17		0.035	U	0.261		0.073		0.292		0.039	U	0.244		0.039	U	0.25	
18	18 + 30	0.081	C U	0.647	C	0.146	C U	0.666	C	0.072	C U	0.6	C	0.088	C U	0.646	C
19		0.014	U	0.097		0.018	U	0.106		0.013	U	0.093		0.014	U	0.091	
20	20 + 28	0.202	C	0.745	C	0.452	C	0.717	C	0.198	C	0.655	C	0.205	C	1.02	C
21	21 + 33	0.073	C U	0.284	C	0.198	C	0.283	C	0.082	C U	0.306	C	0.08	C U	0.0022	C U
22		0.069	EMPC	0.29		0.158		0.268		0.07		0.283		0.076		0.267	
23		0.0018	U	0.004	U	0.0022	U	0.004	U	0.002	U	0.0057	U	0.0029	U	0.0025	U
24		0.001	EMPC	0.012		0.003	EMPC	0.013	EMPC	0.0018	U	0.011		0.002		0.012	
25		0.013	U	0.047	EMPC	0.029		0.044		0.013	U	0.05		0.012	U	0.049	
26	26 + 29	0.029	C U	0.125	C	0.064	C	0.127	C	0.027	C U	0.123	C	0.028	C U	0.124	C
27		0.007	U	0.051		0.014		0.05		0.007	U	0.047		0.007	U	0.054	
28	20 + 28		C20		C20		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18		C18		C18
31		0.156		0.61		0.356		0.609		0.151		0.559		0.156		0.612	
32		0.018	U	0.142		0.032	U	0.141		0.016	U	0.145	EMPC	0.026	U	0.149	
33	21 + 33		C21		C21		C21		C21		C21		C21		C21		C21
34		0.0018	U	0.006	U	0.0022	U	0.006	U	0.003	U	0.0057	U	0.0029	U	0.003	U
35		0.029	EMPC	0.122		0.038		0.101		0.043		0.11		0.03	EMPC	0.091	
36		0.009	EMPC	0.029		0.009		0.032		0.01		0.025		0.007		0.021	
37		0.061	U	0.124		0.12		0.131		0.065		0.127		0.071		0.146	
38		0.0019	U	0.0039	U	0.006	EMPC	0.006	EMPC	0.002	EMPC	0.0056	U	0.0031	U	0.013	EMPC
39		0.002		0.006	EMPC	0.003	EMPC	0.0035	U	0.002	EMPC	0.0056	U	0.003	U	0.005	
40	40 + 41 + 71	0.091	C	0.215	C	0.153	C	0.196	C	0.097	C	0.185	C	0.098	C	0.219	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40		C40		C40
42		0.057		0.113		0.084		0.101		0.055		0.102		0.065		0.123	
43		0.008	EMPC	0.022	EMPC	0.014	EMPC	0.0024	U	0.007	EMPC	0.017	EMPC	0.008		0.021	
44	44 + 47 + 65	0.268	C U	0.617	C	0.46	C	0.525	C U	0.27	C U	0.543	C	0.341	C	0.801	C
45	45 + 51	0.033	C U	0.093	C	0.048	C U	0.09	C U	0.033	C U	0.085	C	0.038	C U	0.11	C
46		0.009	EMPC	0.033		0.014	EMPC	0.031	EMPC	0.009		0.03		0.01	EMPC	0.033	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44		C44		C44
48		0.037		0.0024	U	0.057		0.0019	U	0.04		0.08	EMPC	0.04		0.002	U
49	49 + 69	0.14	C	0.304	C	0.214	C	0.274	C	0.126	C	0.243	C	0.135	C	0.3	C
50	50 + 53	0.021	C	0.091	C	0.031	C	0.079	C	0.02	C U	0.071	C	0.026	C	0.092	C
51	45 + 51		C45		C45		C45		C45		C45		C45		C45		C45
52		0.359		0.935		0.556		0.846		0.333		0.754		0.37		0.99	
53	50 + 53		C50		C50		C50		C50		C50		C50		C50		C50
54		0.001	U	0.002	U	0.001	U	0.004	U	0.003	U	0.004	U	0.002	U	0.0014	U
55		0.0073	U	0.01		0.0081	U	0.0077	U	0.0056	U	0.0072	U	0.004	U	0.008	
56		0.116		0.149		0.181		0.134		0.114		0.126		0.131		0.14	
57		0.007	U	0.0057	U	0.0078	U	0.0073	U	0.0054	U	0.0068	U	0.0039	U	0.0068	U
58		0.0071	U	0.0057	U	0.0079	U	0.0073	U	0.0055	U	0.0069	U	0.0039	U	0.0069	U
59	59 + 62 + 75	0.021	C	0.045	C	0.027	C	0.043	C	0.021	C	0.042	C EMPC	0.022	C EMPC	0.052	C
60		0.071		0.076		0.104		0.073		0.062		0.068	EMPC	0.069		0.075	
61	61 + 70 + 74 + 76	0.563	C	0.687	C	1	C	0.678	C	0.515	C	0.624	C	0.583	C	0.791	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59		C59		C59
63		0.011	EMPC	0.011	EMPC	0.014		0.011	EMPC	0.01		0.01		0.011		0.016	
64		0.11		0.21		0.17		0.205		0.097		0.184		0.102		0.217	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44		C44		C44
66		0.282		0.302		0.43		0.281		0.251		0.26		0.276		0.313	
67		0.008		0.01		0.009		0.012	EMPC	0.006		0.012	EMPC	0.008		0.013	EMPC
68		0.0069	U	0.011	U	0.015	U	0.0079	U	0.0053	U	0.014	U	0.009	U	0.017	U
69	49 + 69		C49		C49		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40		C40		C40
72		0.0071	U	0.0056	U	0.0079	U	0.0072	U	0.0055	U	0.0067	U	0.0039	U	0.0068	U
73		0.001	U	0.013	EMPC	0.0009	U	0.01	EMPC	0.001	U	0.003		0.0008	U	0.0015	U
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61		C61		C61
77		0.039	U	0.048	EMPC	0.051		0.029	U	0.032	U	0.047		0.047		0.092	
78		0.0076	U	0.0061	U	0.0084	U	0.0077	U	0.0058	U	0.0072	U	0.0042	U	0.0067	U
79		0.0065	U	0.009		0.01	EMPC	0.0069	U	0.007	EMPC	0.007	EMPC	0.012		0.021	
80		0.0066	U	0.0052	U	0.0074	U	0.0067	U	0.0051	U	0.0063	U	0.0037	U	0.0061	U
81		0.0073	U	0.006	U	0.0084	U	0.0076	U	0.0055	U	0.0073	U	0.0043	U	0.007	U
82		0.079	EMPC	0.05		0.107		0.045	EMPC	0.057		0.042		0.074		0.061	
83	83 + 99	0.422	C	0.281	C	0.494	C	0.244	C	0.351	C	0.229	C	0.397	C	0.342	C
84		0.12		0.161		0.165		0.141		0.112		0.137		0.115		0.175	
85	85 + 116 + 117	0.14	C	0.092	C	0.18	C	0.078	C	0.112	C	0.075	C	0.13	C	0.101	C
86	86 + 87 + 97 + 108 + 119 + 125	0.476	C	0.387	C	0.609	C	0.335	C	0.409	C	0.333	C	0.483	C	0.482	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
88	88 + 91	0.075	C	0.071	C	0.089	C	0.064	C	0.057	C	0.05	C EMPC	0.074	C	0.08	C
89		0.0019	U	0.005		0.006	EMPC	0.0023	U	0.006	EMPC	0.0034	U	0.004	EMPC	0.004	EMPC
90	90 + 101 + 113	0.73	C	0.589	C	0.856	C	0.532	C	0.609	C	0.485	C	0.72	C	0.675	C
91	88 + 91		C88		C88		C88		C88		C88		C88		C88		C88
92		0.126		0.111		0.142		0.109		0.114	EMPC	0.092		0.127		0.125	
93	93 + 95 + 98 + 100 + 102	0.453	C	0.584	C	0.515	C	0.514	C	0.405	C	0.497	C	0.472	C	0.691	C
94		0.0019	U	0.002		0.002	EMPC	0.0024	U	0.0027	U	0.0035	U	0.002	EMPC	0.0027	U
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93		C93
96		0.003		0.004		0.003		0.003		0.002	EMPC	0.003	EMPC	0.002	EMPC	0.004	EMPC
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93		C93		C93
103		0.005	EMPC	0.005	EMPC	0.004	EMPC	0.003		0.003		0.003		0.004		0.004	
104		0.001	U	0.001	U	0.002	U	0.0011	U	0.003	U	0.0018	U	0.002	U	0.0009	U
105		0.339		0.147		0.421		0.119		0.262		0.125		0.282		0.178	
106		0.004	U	0.005		0.005	U	0.0053	U	0.0049	U	0.0067	U	0.0037	U	0.003	U
107	107 + 124	0.038	C EMPC	0.02	C	0.049	C	0.017	C EMPC	0.03	C	0.016	C EMPC	0.032	C	0.019	C
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
109		0.064		0.039		0.075		0.041		0.054		0.032	EMPC	0.062		0.033	
110	110 + 115	0.836	C	0.66	C	1.09	C	0.57	C	0.721	C	0.549	C	0.793	C	0.74	C
111		0.0014	U	0.0013	U	0.002	EMPC	0.0017	U	0.002	U	0.0025	U	0.0012	U	0.0018	U

Table H-12
High-Volume Surface Water PCB Congener Analysis Results
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		Forebay - P55				Forebay - P56				Reference - P57				Reference - P58			
IUPAC #	COELUTING CONGENERS[1]	08022555XA D 2/25/2008 (Filter)		08022555XA D 2/25/2008 (Column)		08022156XA D 2/26/2008 (Filter)		08022156XA D 2/26/2008 (Column)		08022757XA D 2/27/2008 (Filter)		08022757XA D 2/27/2008 (Column)		08030758XA D 3/7/2008 (Filter)		08030758XA D 3/7/2008 (Column)	
112		0.002	EMPC	0.0013	U	0.0014	U	0.0017	U	0.0019	U	0.0025	U	0.0012	U	0.0018	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90		C90		C90
114		0.021	U	0.015	U	0.02	U	0.01	U	0.014	U	0.011	U	0.02	U	0.011	U
115	110 + 115		C110		C110		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85		C85		C85
118		0.825		0.448		1.07		0.361		0.743		0.378		0.932		0.593	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
120		0.005	EMPC	0.0012	U	0.004	EMPC	0.0016	U	0.004	EMPC	0.0023	U	0.005		0.002	
121		0.0014	U	0.0013	U	0.0014	U	0.0017	U	0.0019	U	0.0025	U	0.0012	U	0.0019	U
122		0.0044	U	0.006	EMPC	0.007	EMPC	0.0057	U	0.006	EMPC	0.0072	U	0.007		0.004	EMPC
123		0.015	U	0.006	U	0.023	U	0.01	EMPC	0.017	U	0.007	U	0.019	U	0.014	U
124	107 + 124		C107		C107		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86		C86		C86
126		0.0046	U	0.006	U	0.0059	U	0.0057	U	0.0055	U	0.0068	U	0.007	U	0.006	U
127		0.004	U	0.0023	U	0.005	U	0.005	U	0.0049	U	0.0063	U	0.0037	U	0.0029	U
128	128 + 166	0.167	C	0.043	C	0.154	C	0.033	C	0.121	C	0.038	C EMPC	0.127	C	0.044	C
129	129 + 138 + 160 + 163	1.07	C	0.319	C	1	C	0.255	C	0.809	C	0.29	C	1.04	C	0.375	C
130		0.067		0.022		0.06		0.018	EMPC	0.043	EMPC	0.017	EMPC	0.049		0.02	
131		0.008	EMPC	0.004	EMPC	0.012		0.004	EMPC	0.007	EMPC	0.0044	U	0.007		0.0034	U
132		0.238		0.102		0.255		0.088	EMPC	0.176		0.078		0.2		0.111	
133		0.015		0.006	U	0.015	EMPC	0.004	U	0.012	EMPC	0.004	U	0.011	EMPC	0.005	U
134	134 + 143	0.04	C	0.016	C EMPC	0.041	C EMPC	0.018	C EMPC	0.026	C	0.019	C	0.025	C EMPC	0.021	C EMPC
135	135 + 151 + 154	0.276	C	0.127	C	0.25	C	0.116	C	0.194	C	0.101	C	0.237	C	0.133	C
136		0.075		0.04	EMPC	0.074		0.033		0.053		0.0021	U	0.061		0.043	
137		0.043	EMPC	0.014		0.041		0.013	EMPC	0.033		0.013		0.037		0.012	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129		C129		C129
139	139 + 140	0.016	C	0.003	C U	0.019	C	0.004	C EMPC	0.013	C EMPC	0.004	C U	0.012	C	0.0031	C U
140	139 + 140		C139		C139		C139		C139		C139		C139		C139		C139
141		0.126		0.041		0.123		0.034	EMPC	0.093		0.033		0.1		0.044	
142		0.0055	U	0.0033	U	0.0033	U	0.0026	U	0.0023	U	0.0044	U	0.0043	U	0.0034	U
143	134 + 143		C134		C134		C134		C134		C134		C134		C134		C134
144		0.03		0.013	EMPC	0.035		0.014	EMPC	0.023		0.012	EMPC	0.025		0.015	
145		0.0008	U	0.0012	U	0.0008	U	0.0012	U	0.0008	U	0.0022	U	0.0009	U	0.0013	U
146		0.159		0.053		0.142		0.044		0.125		0.049		0.161		0.061	
147	147 + 149	0.672	C	0.282	C	0.65	C	0.23	C	0.506	C	0.225	C	0.634	C	0.322	C
148		0.003	EMPC	0.0015	U	0.002	EMPC	0.0015	U	0.002	EMPC	0.0027	U	0.001	EMPC	0.0016	U
149	147 + 149		C147		C147		C147		C147		C147		C147		C147		C147
150		0.001	EMPC	0.0011	U	0.001	EMPC	0.0011	U	0.002	EMPC	0.0021	U	0.001	EMPC	0.0012	U
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135		C135		C135
152		0.0008	U	0.0011	U	0.0008	U	0.0011	U	0.001	EMPC	0.002	U	0.0008	U	0.001	EMPC
153	153 + 168	1.04	C	0.304	C	0.881	C	0.239	C	0.834	C	0.28	C	1.18	C	0.406	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135		C135		C135
155		0.002	U	0.002	U	0.004	U	0.001	U	0.002	U	0.0018	U	0.003	U	0.001	U
156	156 + 157	0.11	C	0.028	C U	0.101	C	0.023	C U	0.085	C	0.026	C U	0.094	C	0.036	C U
157	156 + 157		C156		C156		C156		C156		C156		C156		C156		C156
158		0.082		0.029		0.084		0.022		0.062		0.022		0.074		0.031	
159		0.007		0.0022	U	0.008		0.0018	U	0.005	EMPC	0.003	U	0.005	EMPC	0.002	EMPC
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129		C129		C129
161		0.0039	U	0.0023	U	0.0023	U	0.0018	U	0.0016	U	0.003	U	0.0031	U	0.0024	U
162		0.004	U	0.0024	U	0.004	EMPC	0.0019	U	0.004		0.0032	U	0.0032	U	0.0023	U
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129		C129		C129
164		0.057		0.021		0.06		0.018		0.041	EMPC	0.014		0.048	EMPC	0.022	
165		0.0043	U	0.0026	U	0.0026	U	0.0021	U	0.0018	U	0.0034	U	0.0034	U	0.0027	U
166	128 + 166		C128		C128		C128		C128		C128		C128		C128		C128
167		0.049		0.014	U	0.044		0.011	EMPC	0.041		0.013	U	0.057		0.018	U
168	153 + 168		C153		C153		C153		C153		C153		C153		C153		C153
169		0.004	U	0.0023	U	0.0024	U	0.0018	U	0.0017	U	0.003	U	0.0034	U	0.0024	U
170		0.152		0.026	U	0.142		0.02	U	0.099		0.027	U	0.106		0.025	U
171	171 + 173	0.049	C	0.012	C	0.051	C	0.008	C	0.037	C	0.008	C	0.04	C EMPC	0.009	C
172		0.031		0.007	EMPC	0.032		0.007	EMPC	0.02		0.007	EMPC	0.024		0.006	
173	171 + 173		C171		C171		C171		C171		C171		C171		C171		C171
174		0.152		0.05	EMPC	0.141		0.033	U	0.111		0.043		0.108		0.036	
175		0.009	EMPC	0.002	EMPC	0.009		0.0016	U	0.007	EMPC	0.0023	U	0.009		0.002	EMPC
176		0.022		0.006	EMPC	0.021		0.007	EMPC	0.015		0.006	EMPC	0.017	EMPC	0.005	
177		0.13		0.031		0.124		0.026		0.079		0.025		0.09		0.023	
178		0.045		0.015		0.043		0.013	EMPC	0.036		0.011	EMPC	0.033	EMPC	0.012	EMPC
179		0.074		0.021		0.072		0.016		0.057		0.018		0.068		0.019	
180	180 + 193	0.365	C	0.125	C	0.341	C	0.067	C U	0.265	C	0.109	C	0.321	C	0.105	C
181		0.003	EMPC	0.0012	U	0.002	EMPC	0.0016	U	0.002	EMPC	0.0023	U	0.002		0.0015	U
182		0.003	U	0.0012	U	0.003	U	0.0016	U	0.002	U	0.0023	U	0.0008	U	0.0015	U
183	183 + 185	0.129	C	0.044	C	0.117	C	0.025	C U	0.09	C	0.026	C	0.119	C	0.032	C
184		0.002		0.0009	U	0.004	EMPC	0.0012	U	0.002		0.0017	U	0.002	EMPC	0.0012	U
185	183 + 185		C183		C183		C183		C183		C183		C183		C183		C183
186		0.0008	U	0.001	U	0.0008	U	0.0013	U	0.001	U	0.0018	U	0.0008	U	0.0012	U
187		0.295		0.113		0.284		0.078	U	0.224		0.101		0.276		0.09	
188		0.0008	U	0.0008	U	0.0008	U	0.0011	U	0.0008	U	0.0016	U	0.002	U	0.0011	U
189		0.006	U	0.0022	U	0.008	U	0.0018	U	0.005	U	0.0036	U	0.004	U	0.0021	U
190		0.038		0.01		0.039		0.004	EMPC	0.035		0.007		0.043	EMPC	0.008	
191		0.008		0.001		0.007		0.0013	U	0.005		0.0018	U	0.005	EMPC	0.0012	U
192		0.0008	U	0.001	U	0.0008	U	0.0014	U	0.0011	U	0.002	U	0.0008	U	0.0013	U
193	180 + 193		C180		C180		C180		C180		C180		C180		C180		C180
194		0.063		0.034		0.067		0.014	U	0.043		0.037		0.048		0.029	
195		0.026		0.015	EMPC	0.027		0.008	EMPC	0.019	EMPC	0.013	EMPC	0.018		0.009	
196		0.035		0.045		0.04	EMPC	0.013	U	0.027		0.033	EMPC	0.031		0.03	
197	197 + 200	0.016	C	0.021	C	0.017	C EMPC	0.007	C EMPC	0.01	C EMPC	0.013	C	0.01	C	0.009	C
198	198 + 199	0.096	C	0.135	C	0.096	C	0.054	C U	0.079	C EMPC	0.111	C	0.075	C	0.086	C
199	198 + 199		C198		C198		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197		C197		C197
201		0.013		0.016	EMPC	0.01	EMPC	0.005		0.01		0.012		0.008		0.008	
202		0.029		0.029		0.027		0.012	U	0.024	EMPC	0.02	EMPC	0.021		0.015	U
203		0.071		0.099		0.066		0.035		0.052		0.083		0.064		0.076	
204		0.0008	U	0.0008	U	0.0008	U	0.0012	U	0.0008	U	0.0016	U	0.001	EMPC	0.0013	U
205		0.005	U	0.003	U	0.006	U	0.0016	U	0.002	U	0.0025	U	0.004	U	0.002	U
206		0.049		0.049		0.061		0.019	EMPC	0.04		0.053	EMPC	0.039		0.04	
207		0.01	EMPC	0.02	EMPC	0.012		0.008		0.006	EMPC	0.015		0.007	EMPC	0.013	
208		0.02	U	0.041		0.024		0.012	U	0.016	U	0.041		0.02	U	0.027	
209		0.056		0.015	U	0.105		0.009	U	0.106		0.016	U	0.048		0.016	U
Total PCBs as Congeners (full EMPC/full SDL)		23.9	J	155	J	27.2	J	140	J	25.5	J	154	J	22.1	J	110	J
Total PCBs as Congeners (KM-based)		22.6	J	154	J	26.4	J	138	J	24.3	J	154	J	21.2	J	109	J
Total PCBs as Congeners (KM-based, capped)		22.6	J	154	J	26.4	J	138	J	24.3	J	154	J	21.2	J	109	J

Notes:

All results are in units of pg/L (picograms/Liter)
C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
RDL = Reported detection limit

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-12
High-Volume Surface Water PCB Congener Analysis Results
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		Reference - P59				Reference - P60				Reference - P61			
IUPAC #	COELUTING CONGENERS[1]	08022959XA D 2/29/2008 (Filter)		08022959XA D 2/29/2008 (Column)		08030460XA D 3/4/2008 (Filter)		08030460XA D 3/4/2008 (Column)		08030661XA D 3/6/2008 (Filter)		08030661XA D 3/6/2008 (Column)	
1		0.015	U	0.209		0.019	U	0.213		0.015	U	0.18	
2		0.042	U	0.256		0.056		0.292		0.047	U	0.237	
3		0.032	U	0.147		0.036	U	0.17		0.034	U	0.155	
4		0.026	U	0.634		0.038	U	0.554		0.026	U	0.391	
5		0.008	U	0.0051	U	0.0047	U	0.0046	U	0.0056	U	0.009	EMPC
6		0.011	U	0.144		0.019	U	0.129		0.012	U	0.103	
7		0.011	U	0.032	U	0.014	U	0.027	U	0.0052	U	0.033	U
8		0.046	U	0.512		0.004	U	0.5		0.064	U	0.462	
9		0.0071	U	0.041	EMPC	0.007	U	0.039		0.005	U	0.038	
10		0.0067	U	0.026		0.004	U	0.017		0.0047	U	0.016	
11		9.81		133		11.3		130		8.97		107	
12	12 + 13	0.008	C U	0.0052	C U	0.0047	C U	0.0046	C U	0.0056	C U	0.0055	C U
13	12 + 13		C12		C12		C12		C12		C12		C12
14		0.0075	U	0.0049	U	0.0044	U	0.0044	U	0.0052	U	0.0052	U
15		0.059	U	0.839		0.081	U	0.543	EMPC	0.072	U	0.737	
16		0.042	U	0.348		0.052	U	0.322		0.04	U	0.302	
17		0.048	U	0.303		0.052	U	0.28		0.042	U	0.243	
18	18 + 30	0.093	C U	0.763	C	0.116	C U	0.729	C	0.09	C U	0.657	C
19		0.015	U	0.139		0.017	U	0.115		0.015	U	0.09	
20	20 + 28	0.195	C	0.749	C	0.237	C	0.736	C	0.293	C	0.728	C
21	21 + 33	0.063	C U	0.284	C	0.094	C U	0.289	C EMPC	0.129	C	0.286	C
22		0.072	EMPC	0.271		0.089		0.288		0.115		0.282	
23		0.0043	U	0.017	U	0.006	U	0.0032	U	0.0019	U	0.002	U
24		0.003	EMPC	0.014	EMPC	0.003		0.013		0.002	EMPC	0.013	
25		0.013	U	0.051		0.015		0.05		0.018		0.043	EMPC
26	26 + 29	0.028	C U	0.136	C	0.035	C U	0.131	C	0.042	C	0.121	C
27		0.009	U	0.062		0.01	U	0.056		0.01	U	0.052	
28	20 + 28		C20		C20		C20		C20		C20		C20
29	26 + 29		C26		C26		C26		C26		C26		C26
30	18 + 30		C18		C18		C18		C18		C18		C18
31		0.144	U	0.622		0.179		0.612		0.22		0.588	
32		0.023	U	0.16		0.029	U	0.149		0.025	U	0.136	
33	21 + 33		C21		C21		C21		C21		C21		C21
34		0.0043	U	0.026	U	0.005	U	0.005	U	0.002	U	0.006	U
35		0.03		0.118		0.039		0.125		0.041		0.103	
36		0.005	EMPC	0.027	EMPC	0.007	EMPC	0.027		0.006	EMPC	0.022	
37		0.067		0.147		0.08		0.145		0.105		0.146	
38		0.0045	U	0.003	EMPC	0.003	EMPC	0.01		0.004		0.004	
39		0.0044	U	0.006	EMPC	0.002	EMPC	0.01		0.002	EMPC	0.005	EMPC
40	40 + 41 + 71	0.089	C	0.221	C	0.101	C	0.224	C	0.121	C	0.229	C
41	40 + 41 + 71		C40		C40		C40		C40		C40		C40
42		0.067		0.129	EMPC	0.075		0.127		0.075		0.125	
43		0.007	EMPC	0.02		0.013		0.023		0.009	EMPC	0.02	
44	44 + 47 + 65	0.302	C	0.644	C	0.368	C	0.654	C	0.432	C	0.736	C
45	45 + 51	0.038	C U	0.103	C	0.045	C U	0.091	C	0.044	C U	0.105	C
46		0.01	EMPC	0.034	EMPC	0.01	EMPC	0.033		0.009	EMPC	0.031	
47	44 + 47 + 65		C44		C44		C44		C44		C44		C44
48		0.039		0.0017	U	0.046		0.0014	U	0.045		0.0015	U
49	49 + 69	0.134	C	0.318	C	0.146	C	0.281	C	0.164	C	0.294	C
50	50 + 53	0.027	C	0.091	C	0.03	C	0.09	C	0.028	C	0.094	C
51	45 + 51		C45		C45		C45		C45		C45		C45
52		0.335		0.973		0.393		0.898		0.45		0.0014	U
53	50 + 53		C50		C50		C50		C50		C50		C50
54		0.001	U	0.018	U	0.005	U	0.002	U	0.003	U	0.001	U
55		0.0046	U	0.01	EMPC	0.0046	U	0.0061	U	0.0058	U	0.008	
56		0.104		0.153		0.118		0.162		0.163		0.165	
57		0.0044	U	0.0064	U	0.0044	U	0.0059	U	0.0056	U	0.0062	U
58		0.0045	U	0.0067	U	0.0045	U	0.0062	U	0.0056	U	0.0065	U
59	59 + 62 + 75	0.021	C	0.051	C	0.023	C	0.053	C	0.027	C	0.048	C
60		0.064	EMPC	0.088		0.067		0.087		0.088		0.089	
61	61 + 70 + 74 + 76	0.495	C	0.739	C	0.571	C	0.746	C	0.816	C	0.783	C
62	59 + 62 + 75		C59		C59		C59		C59		C59		C59
63		0.01	EMPC	0.016	EMPC	0.011	EMPC	0.015		0.012		0.018	
64		0.097		0.0013	U	0.114		0.209		0.136		0.213	
65	44 + 47 + 65		C44		C44		C44		C44		C44		C44
66		0.261		0.299		0.279		0.324		0.363		0.318	
67		0.008	EMPC	0.015	EMPC	0.008	EMPC	0.012	EMPC	0.008	EMPC	0.014	
68		0.0043	U	0.0068	U	0.011	U	0.014	U	0.012	U	0.0066	U
69	49 + 69		C49		C49		C49		C49		C49		C49
70	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
71	40 + 41 + 71		C40		C40		C40		C40		C40		C40
72		0.0045	U	0.0063	U	0.0045	U	0.0058	U	0.0057	U	0.0061	U
73		0.0014	U	0.0013	U	0.0008	U	0.013		0.0008	U	0.012	
74	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
75	59 + 62 + 75		C59		C59		C59		C59		C59		C59
76	61 + 70 + 74 + 76		C61		C61		C61		C61		C61		C61
77		0.039	U	0.043	U	0.057		0.041	U	0.071		0.08	
78		0.0048	U	0.0071	U	0.0048	U	0.0066	U	0.006	U	0.0068	U
79		0.01	EMPC	0.009	EMPC	0.015		0.01	EMPC	0.015	EMPC	0.011	
80		0.0042	U	0.0057	U	0.0042	U	0.0053	U	0.0053	U	0.0055	U
81		0.0047	U	0.007	U	0.0047	U	0.0062	U	0.0057	U	0.0066	U
82		0.058		0.05		0.068		0.055		0.084		0.057	
83	83 + 99	0.388	C	0.296	C	0.448	C	0.302	C	0.479	C	0.324	C
84		0.109		0.153		0.124		0.142		0.144		0.165	
85	85 + 116 + 117	0.12	C	0.088	C	0.136	C EMPC	0.089	C	0.164	C	0.104	C
86	86 + 87 + 97 + 108 + 119 + 125	0.442	C	0.387	C	0.512	C	0.411	C	0.616	C	0.468	C
87	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
88	88 + 91	0.07	C	0.067	C	0.074	C	0.067	C	0.078	C	0.076	C
89		0.004	EMPC	0.005		0.006	EMPC	0.005		0.006		0.005	EMPC
90	90 + 101 + 113	0.684	C	0.607	C	0.779	C	0.606	C	0.857	C	0.649	C
91	88 + 91		C88		C88		C88		C88		C88		C88
92		0.123		0.115		0.128		0.112		0.14		0.125	
93	93 + 95 + 98 + 100 + 102	0.46	C	0.632	C	0.512	C	0.613	C	0.537	C	0.637	C
94		0.0032	U	0.0034	U	0.0019	U	0.003	EMPC	0.004	EMPC	0.003	
95	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
96		0.003		0.004	EMPC	0.003		0.004	EMPC	0.003	EMPC	0.004	EMPC
97	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
98	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
99	83 + 99		C83		C83		C83		C83		C83		C83
100	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
101	90 + 101 + 113		C90		C90		C90		C90		C90		C90
102	93 + 95 + 98 + 100 + 102		C93		C93		C93		C93		C93		C93
103		0.004		0.0028	U	0.003	EMPC	0.002	EMPC	0.004		0.005	EMPC
104		0.002	U	0.017	U	0.004	U	0.001	U	0.001	U	0.0009	U
105		0.297		0.149		0.327		0.144		0.403		0.16	
106		0.0057	U	0.005		0.0051	U	0.0039	U	0.0041	U	0.0061	U
107	107 + 124	0.036	C EMPC	0.022	C	0.037	C	0.023	C	0.044	C	0.024	C EMPC
108	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
109		0.058		0.033	EMPC	0.065		0.036	EMPC	0.075		0.034	
110	110 + 115	0.765	C	0.692	C	0.869	C	0.705	C	1.08	C	0.781	C
111		0.0024	U	0.0025	U	0.0014	U	0.0016	U	0.0011	U	0.0018	U

Table H-12
High-Volume Surface Water PCB Congener Analysis Results
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		Reference - P59				Reference - P60				Reference - P61			
IUPAC #	COELUTING CONGENERS[1]	08022959XA D 2/29/2008 (Filter)		08022959XA D 2/29/2008 (Column)		08030460XA D 3/4/2008 (Filter)		08030460XA D 3/4/2008 (Column)		08030661XA D 3/6/2008 (Filter)		08030661XA D 3/6/2008 (Column)	
112		0.0023	U	0.0025	U	0.0014	U	0.0016	U	0.0011	U	0.0018	U
113	90 + 101 + 113		C90		C90		C90		C90		C90		C90
114		0.017	U	0.017	U	0.02	U	0.01	U	0.022	U	0.009	U
115	110 + 115		C110		C110		C110		C110		C110		C110
116	85 + 116 + 117		C85		C85		C85		C85		C85		C85
117	85 + 116 + 117		C85		C85		C85		C85		C85		C85
118		0.884		0.489		1.08		0.553		1.22		0.552	
119	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
120		0.004		0.0023	U	0.004		0.002	EMPC	0.002		0.002	EMPC
121		0.0023	U	0.0025	U	0.0014	U	0.0016	U	0.0011	U	0.0018	U
122		0.0062	U	0.004	U	0.009		0.005	EMPC	0.008		0.0066	U
123		0.02	U	0.009	U	0.026	U	0.014	U	0.026	U	0.011	U
124	107 + 124		C107		C107		C107		C107		C107		C107
125	86 + 87 + 97 + 108 + 119 + 125		C86		C86		C86		C86		C86		C86
126		0.0063	U	0.0039	U	0.008	U	0.0041	U	0.008	U	0.007	U
127		0.0057	U	0.0039	U	0.0051	U	0.0041	U	0.0041	U	0.0064	U
128	128 + 166	0.137	C	0.044	C	0.146	C	0.045	C	0.156	C	0.049	C
129	129 + 138 + 160 + 163	1.04	C	0.351	C	1.28	C	0.381	C	1.11	C	0.388	C
130		0.053		0.02		0.057		0.02		0.058		0.021	
131		0.01	EMPC	0.004	EMPC	0.012	EMPC	0.003	EMPC	0.01	EMPC	0.005	
132		0.213		0.091		0.226		0.091		0.247		0.106	
133		0.014		0.006	U	0.013		0.004	U	0.017		0.007	U
134	134 + 143	0.033	C	0.018	C EMPC	0.032	C	0.016	C	0.035	C	0.019	C
135	135 + 151 + 154	0.247	C	0.111	C	0.278	C	0.127	C	0.285	C	0.128	C
136		0.063		0.032		0.071		0.035		0.07		0.036	
137		0.035	EMPC	0.016		0.047		0.01		0.048		0.017	
138	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
139	139 + 140	0.014	C EMPC	0.006	C EMPC	0.016	C	0.005	C EMPC	0.016	C	0.007	C EMPC
140	139 + 140		C139		C139		C139		C139		C139		C139
141		0.089		0.037		0.116		0.037		0.122		0.042	EMPC
142		0.0027	U	0.0013	U	0.0042	U	0.0023	U	0.0034	U	0.0019	U
143	134 + 143		C134		C134		C134		C134		C134		C134
144		0.027		0.01	EMPC	0.027		0.015		0.033		0.015	
145		0.0011	U	0.0011	U	0.0008	U	0.0006	U	0.0008	U	0.0009	U
146		0.156		0.059		0.183		0.063		0.167		0.063	
147	147 + 149	0.644	C	0.288	C	0.778	C	0.298	C	0.725	C	0.307	C
148		0.0013	U	0.0014	U	0.0008	U	0.0008	U	0.002		0.0011	U
149	147 + 149		C147		C147		C147		C147		C147		C147
150		0.002	EMPC	0.0011	U	0.0008	U	0.002	EMPC	0.001	EMPC	0.0008	U
151	135 + 151 + 154		C135		C135		C135		C135		C135		C135
152		0.001	U	0.001	U	0.0008	U	0.001	EMPC	0.0008	U	0.0008	U
153	153 + 168	1.19	C	0.327	C	1.52	C	0.356	C	1.26	C	0.402	C
154	135 + 151 + 154		C135		C135		C135		C135		C135		C135
155		0.003	U	0.012	U	0.004	U	0.001	U	0.003	U	0.002	U
156	156 + 157	0.099	C	0.032	C U	0.115	C	0.03	C U	0.104	C	0.034	C U
157	156 + 157		C156		C156		C156		C156		C156		C156
158		0.073		0.027		0.083		0.025		0.084		0.031	
159		0.008		0.002		0.005		0.0017	U	0.007	EMPC	0.002	
160	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
161		0.0019	U	0.0009	U	0.003	U	0.0016	U	0.0024	U	0.0013	U
162		0.003	EMPC	0.002	EMPC	0.0031	U	0.0018	U	0.003	EMPC	0.0014	U
163	129 + 138 + 160 + 163		C129		C129		C129		C129		C129		C129
164		0.044		0.022		0.053		0.02		0.055		0.021	
165		0.0022	U	0.0011	U	0.0033	U	0.0019	U	0.0027	U	0.0015	U
166	128 + 166		C128		C128		C128		C128		C128		C128
167		0.056		0.015	U	0.07		0.016	U	0.06		0.018	U
168	153 + 168		C153		C153		C153		C153		C153		C153
169		0.002	U	0.001	U	0.0032	U	0.0016	U	0.0024	U	0.0014	U
170		0.132		0.022	U	0.123		0.019	U	0.14		0.02	U
171	171 + 173	0.05	C	0.01	C	0.054	C	0.009	C	0.054	C	0.005	C EMPC
172		0.025		0.005	EMPC	0.027		0.006	EMPC	0.031		0.005	
173	171 + 173		C171		C171		C171		C171		C171		C171
174		0.128		0.034		0.131		0.031		0.145		0.033	
175		0.009	EMPC	0.0011	U	0.008	EMPC	0.001	EMPC	0.008		0.002	
176		0.02		0.006	EMPC	0.021		0.0005	U	0.02		0.004	EMPC
177		0.104		0.024		0.112		0.021		0.11		0.024	
178		0.044	EMPC	0.012		0.042		0.011		0.037		0.009	
179		0.068		0.022	EMPC	0.077		0.018		0.07		0.018	
180	180 + 193	0.369	C	0.087	C	0.392	C	0.07	C EMPC	0.389	C	0.078	C
181		0.002	EMPC	0.0011	U	0.002	EMPC	0.0008	U	0.002	EMPC	0.001	U
182		0.001	U	0.003	U	0.003	U	0.001	U	0.0008	U	0.001	U
183	183 + 185	0.131	C	0.03	C	0.142	C	0.026	C	0.122	C	0.031	C
184		0.001		0.001		0.002	EMPC	0.001	EMPC	0.002	EMPC	0.0007	U
185	183 + 185		C183		C183		C183		C183		C183		C183
186		0.001	U	0.0009	U	0.0008	U	0.0006	U	0.0008	U	0.0008	U
187		0.319		0.105		0.349		0.09		0.323		0.098	
188		0.001	U	0.006	U	0.003	U	0.001	U	0.001	U	0.0007	U
189		0.006	U	0.002	U	0.004	U	0.002	U	0.005	U	0.0014	U
190		0.045		0.007	EMPC	0.048		0.008		0.05	EMPC	0.01	
191		0.001	U	0.0009	U	0.007		0.001	EMPC	0.006		0.002	EMPC
192		0.0011	U	0.001	U	0.0008	U	0.0006	U	0.0008	U	0.0009	U
193	180 + 193		C180		C180		C180		C180		C180		C180
194		0.054		0.019	EMPC	0.052		0.01		0.069		0.016	EMPC
195		0.029		0.005		0.024		0.004	EMPC	0.033		0.005	EMPC
196		0.036		0.016		0.036		0.009	EMPC	0.041		0.011	
197	197 + 200	0.014	C EMPC	0.006	C	0.013	C EMPC	0.004	C	0.013	C	0.007	C
198	198 + 199	0.093	C	0.054	C	0.087	C	0.029	C	0.096	C	0.046	C
199	198 + 199		C198		C198		C198		C198		C198		C198
200	197 + 200		C197		C197		C197		C197		C197		C197
201		0.012		0.005		0.01	EMPC	0.004		0.013	EMPC	0.006	EMPC
202		0.024	EMPC	0.016	U	0.028	EMPC	0.008	U	0.029		0.01	U
203		0.084		0.037		0.078		0.021		0.073		0.032	
204		0.0008	U	0.0009	U	0.0008	U	0.0006	U	0.0008	U	0.0008	U
205		0.004	U	0.002	U	0.005	U	0.001	U	0.006	U	0.002	U
206		0.047		0.027	EMPC	0.056		0.01		0.048		0.014	EMPC
207		0.007		0.005	U	0.006		0.0037	U	0.007	EMPC	0.005	EMPC
208		0.022	U	0.015	U	0.021	U	0.007	U	0.02	U	0.011	U
209		0.062		0.012	U	0.064		0.01	U	0.062		0.009	U
Total PCBs as Congeners (full EMPC/full SDL)		23.9	J	150	J	27.6	J	147	J	26.3	J	123	J
Total PCBs as Congeners (KM-based)		22.8	J	149	J	26.7	J	146	J	25.6	J	123	J
Total PCBs as Congeners (KM-based, capped)		22.8	J	149	J	26.7	J	146	J	25.6	J	123	J

Notes:

All results are in units of pg/L (picograms/Liter)
C = Concentration represents coeluting congeners.
U = The analyte was not detected above the RDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The RDL is an estimate.
RDL = Reported detection limit

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
1= When two or more congeners can not be resolved in the chromatogram they are considered to be 'coeluting' and are reported as a single concentration. This concentration is reported once for all the coeluting congeners.
KM-based = Kaplan–Meier-based with Efron's bias correction
KM-based, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-13
Forebay - Random Sediment and Tissue PCB Aroclor Analysis Results
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Media	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment	
Site ID	P04		P05		P06		P07		P08		P09		P10		P11		P13		P14	
Sample ID	08022604SD		08031905SD		08031806SD		08021507SD		08021508SD		08021409SD		08021410SD		08021411SD		08031713SD		08031814SD	
Sample Date	2/26/2008		3/19/2008		3/18/2008		2/15/2008		2/15/2008		2/14/2008		2/14/2008		2/14/2008		3/17/2008		3/18/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	1.70 U	10.0 U	1.70 U	7.00 U	1.70 U	7.20 U	1.70 U	10.0 U	1.70 U	9.80 U	1.70 U	9.90 U	10.0 U	10.0 U	1.70 U	10.0 U	1.70 U	8.50 U	1.70 U	6.90 U
Aroclor 1221	1.70 U	20.0 U	1.70 U	14.0 U	1.70 U	15.0 U	2.20 U	20.0 U	12.0 U	20.0 U	1.70 U	20.0 U	21.0 U	21.0 U	20.0 U	20.0 U	1.70 U	17.0 U	1.70 U	14.0 U
Aroclor 1232	1.70 U	10.0 U	1.70 U	7.00 U	1.70 U	7.20 U	7.90 U	10.0 U	7.40 U	9.80 U	1.70 U	9.90 U	8.20 U	10.0 U	6.30 U	10.0 U	1.70 U	8.50 U	1.70 U	6.90 U
Aroclor 1242	1.70 U	10.0 U	1.70 U	7.00 U	1.70 U	7.20 U	4.30 U	10.0 U	5.70 U	9.80 U	1.70 U	9.90 U	2.20 U	10.0 U	1.70 U	10.0 U	1.70 U	8.50 U	1.70 U	6.90 U
Aroclor 1248	1.70 U	10.0 U	1.70 U	7.00 U	1.70 U	7.20 U	3.50 U	10.0 U	1.70 U	9.80 U	1.70 U	9.90 U	1.90 U	10.0 U	4.00 U	10.0 U	1.70 U	8.50 U	1.70 U	6.90 U
Aroclor 1254	**27.0**	**27.0**	1.70 U	7.00 U	**4.60 J**	**4.60 J**	2.50 U	10.0 U	1.90 U	9.80 U	2.60 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	8.50 U	1.70 U	6.90 U
Aroclor 1260	1.70 U	10.0 U	1.70 U	7.00 U	1.70 U	7.20 U	1.70 U	10.0 U	1.70 U	9.80 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	8.50 U	1.70 U	6.90 U
Aroclor 1262	1.70 U	10.0 U	1.70 U	7.00 U	1.70 U	7.20 U	1.70 U	10.0 U	1.70 U	9.80 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	8.50 U	1.70 U	6.90 U
Aroclor 1268	1.70 U	10.0 U	1.70 U	7.00 U	1.70 U	7.20 U	1.70 U	10.0 U	1.70 U	9.80 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	8.50 U	1.70 U	6.90 U
Total PCBs as Aroclors [1]	**28.7 J**	**37.0 J**	3.40 U	14.0 U	**6.30 J**	**11.8 J**	6.80 U	20.0 U	7.60 U	19.6 U	4.30 U	19.8 U	3.90 U	20.0 U	3.40 U	20.0 U	3.40 U	17.0 U	3.40 U	13.8 U

Notes:
[1] Only Aroclors 1248 and 1254 were included in summing sediment Total PCBs as Aroclors because all other aroclors were undected in Forebay sediment samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
- = Not Analyzed
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
Sediment is in micrograms per kilogram (µg/kg), dry weight

Table H-13
Forebay - Random Sediment and Tissue PCB Aroclor Analysis Results
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Media	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment	
Site ID	P15		P16		P17		P18		P21		P65		P67		P88		P89	
Sample ID	08022115SD		08022116SD		08022117SD		08021118SD		08021221SD		08022965SD		08030367SD		08031788SD		08031789SD	
Sample Date	2/21/2008		2/21/2008		2/21/2008		2/11/2008		2/12/2008		2/29/2008		3/3/2008		3/17/2008		3/17/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	1.70 U	9.90 U	1.70 U	10.0 U	9.90 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	7.30 U	1.70 U	6.70 U	1.70 U	6.40 U	1.70 U	7.00 U
Aroclor 1221	1.70 U	20.0 U	1.70 U	20.0 U	29.0 U	29.0 U	13.0 U	20.0 U	16.0 U	20.0 U	1.70 U	15.0 U	1.70 U	14.0 U	1.70 U	13.0 U	1.70 U	14.0 U
Aroclor 1232	1.70 U	9.90 U	1.70 U	10.0 U	18.0 U	18.0 U	7.50 U	10.0 U	14.0 U	14.0 U	1.70 U	7.30 U	1.70 U	6.70 U	1.70 U	6.40 U	1.70 U	7.00 U
Aroclor 1242	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	9.90 U	2.90 U	10.0 U	5.70 U	10.0 U	1.70 U	7.30 U	1.70 U	6.70 U	1.70 U	6.40 U	1.70 U	7.00 U
Aroclor 1248	1.70 U	9.90 U	1.70 U	10.0 U	1.90 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	7.30 U	1.70 U	6.70 U	1.70 U	6.40 U	1.70 U	7.00 U
Aroclor 1254	1.70 U	9.90 U	1.70 U	10.0 U	2.20 U	9.90 U	1.70 U	10.0 U	2.40 U	10.0 U	1.70 U	7.30 U	1.70 U	6.70 U	1.70 U	6.40 U	1.70 U	7.00 U
Aroclor 1260	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	9.90 U	1.70 U	10.0 U	4.70 U	10.0 U	1.70 U	7.30 U	1.70 U	6.70 U	1.70 U	6.40 U	1.70 U	7.00 U
Aroclor 1262	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	7.30 U	1.70 U	6.70 U	1.70 U	6.40 U	1.70 U	7.00 U
Aroclor 1268	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	7.30 U	1.70 U	6.70 U	1.70 U	6.40 U	1.70 U	7.00 U
Total PCBs as Aroclors [1]	3.40 U	19.8 U	3.40 U	20.0 U	3.90 U	19.80 U	4.60 U	20.0 U	8.10 U	20.0 U	3.40 U	14.6 U	3.40 U	13.40 U	3.40 U	12.80 U	3.40 U	14.00 U

Notes:
[1] Only Aroclors 1248 and 1254 were included in summing sediment Total PCBs as Aroclors because all other aroclors were undected in Forebay sediment samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
- = Not Analyzed
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
Sediment is in micrograms per kilogram (µg/kg), dry weight

Table H-13
Forebay - Random Sediment and Tissue PCB Aroclor Analysis Results
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Media	Clam		Clam		Clam		Clam		Clam		Clam		Clam		Clam		Clam		Clam	
Site ID	P04		P05		P06		P07		P08		P09		P10		P11		P13		P14	
Sample ID	08022604TC		08031905TC		08031806TC		08021507TC		08021508TC		08021409TC		08021410TC		08021411TC		08031713TC		08031814TC	
Sample Date	2/26/2008		3/19/2008		3/18/2008		2/15/2008		2/15/2008		2/14/2008		2/14/2008		2/14/2008		3/17/2008		3/18/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	18.0 U	18.0 U	2.40 U	9.90 U	2.40 U	10.0 U	19.0 U	19.0 U	23.0 U	23.0 U	23.0 U	23.0 U	23.0 U	23.0 U	21.0 U	21.0 U	2.40 U	9.90 U	2.40 U	9.90 U
Aroclor 1221	20.0 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U
Aroclor 1232	40.0 U	40.0 U	2.30 U	9.90 U	2.30 U	10.0 U	27.0 U	27.0 U	25.0 U	25.0 U	30.0 U	30.0 U	34.0 U	34.0 U	36.0 U	36.0 U	2.30 U	9.90 U	2.30 U	9.90 U
Aroclor 1242	48.0 U	48.0 U	2.20 U	9.90 U	2.20 U	10.0 U	35.0 U	35.0 U	29.0 U	29.0 U	30.0 U	30.0 U	19.0 U	19.0 U	19.0 U	19.0 U	2.20 U	9.90 U	2.20 U	9.90 U
Aroclor 1248	0.510 U	9.80 U	0.510 U	9.90 U	0.510 U	10.0 U	26.0 U	26.0 U	13.0 U	13.0 U	6.00 U	9.60 U	12.0 U	12.0 U	9.90 U	10.0 U	0.510 U	9.90 U	0.510 U	9.90 U
Aroclor 1254	**120 J**	**120 J**	**23.0 J**	**23.0 J**	**32.0 J**	**32.0 J**	74.0 U	74.0 U	55.0 U	55.0 U	49.0 U	49.0 U	36.0 U	36.0 U	32.0 U	32.0 U	**22.0**	**22.0**	**22.0**	**22.0**
Aroclor 1260	1.90 U	9.80 U	1.90 U	9.90 U	1.90 U	10.0 U	11.0 U	11.0 U	9.40 U	9.80 U	8.50 U	9.60 U	6.90 U	9.90 U	6.40 U	10.0 U	1.90 U	9.90 U	1.90 U	9.90 U
Aroclor 1262	2.50 U	9.80 U	2.50 U	9.90 U	2.50 U	10.0 U	2.50 U	9.90 U	2.50 U	9.80 U	2.50 U	9.60 U	2.50 U	9.90 U	2.50 U	10.0 U	2.50 U	9.90 U	2.50 U	9.90 U
Aroclor 1268	2.00 U	9.80 U	2.00 U	9.90 U	2.00 U	10.0 U	2.00 U	9.90 U	2.00 U	9.80 U	2.00 U	9.60 U	2.00 U	9.90 U	2.00 U	10.0 U	2.00 U	9.90 U	2.00 U	9.90 U
Total PCBs as Aroclors [1]	**120 J**	**120 J**	**23.0 J**	**23.0 J**	**32.0 J**	**32.0 J**	74.0 U	74.0 U	55.0 U	55.0 U	49.0 U	49.0 U	36.0 U	36.0 U	32.0 U	32.0 U	**22.0**	**22.0**	**22.0**	**22.0**

Notes:
[1] Only Aroclor 1254 was included in summing Total PCBs as Aroclors because all other aroclors were undected in Forebay clam samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
- = Not Analyzed
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
Tissues are in micrograms per kilogram (µg/kg), wet weight

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Forebay - Random Sediment and Tissue PCB Aroclor Analysis Results
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Media	Clam		Clam		Clam		Clam		Clam		Clam		Clam		Clam		Clam	
Site ID	P15		P16		P17		P18		P21		P65		P67		P88		P89	
Sample ID	08022115TC		08022116TC		08022117TC		08021118TC		08021221TC		08022965TC		08030367TC		08031788TC		08031789TC	
Sample Date	2/21/2008		2/21/2008		2/21/2008		2/12/2008		2/12/2008		2/29/2008		3/3/2008		3/17/2008		3/17/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	19.0 U	19.0 U	17.0 U	17.0 U	17.0 U	17.0 U	17.0 U	17.0 U	15.0 U	15.0 U	2.40 U	9.80 U	2.40 U	10.0 U	2.40 U	10.0 U	2.40 U	9.90 U
Aroclor 1221	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U
Aroclor 1232	35.0 U	35.0 U	30.0 U	30.0 U	31.0 U	31.0 U	23.0 U	23.0 U	19.0 U	19.0 U	2.30 U	9.80 U	2.30 U	10.0 U	2.30 U	10.0 U	2.30 U	9.90 U
Aroclor 1242	17.0 U	17.0 U	15.0 U	15.0 U	15.0 U	15.0 U	22.0 U	22.0 U	10.0 U	10.0 U	2.20 U	9.80 U	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	9.90 U
Aroclor 1248	4.60 U	9.90 U	4.50 U	9.80 U	9.20 U	10.0 U	9.90 U	9.90 U	4.60 U	9.80 U	0.510 U	9.80 U	0.510 U	10.0 U	0.510 U	10.0 U	0.510 U	9.90 U
Aroclor 1254	32.0 U	32.0 U	30.0 U	30.0 U	28.0 U	28.0 U	28.0 U	28.0 U	30.0 U	30.0 U	**21.0**	**21.0**	**21.0**	**21.0**	**23.0**	**23.0**	**21.0**	**21.0**
Aroclor 1260	6.70 U	9.90 U	6.80 U	9.80 U	5.90 U	10.0 U	5.90 U	9.90 U	6.20 U	9.80 U	1.90 U	9.80 U	1.90 U	10.0 U	1.90 U	10.0 U	1.90 U	9.90 U
Aroclor 1262	2.50 U	9.90 U	2.50 U	9.80 U	2.50 U	10.0 U	2.50 U	9.90 U	2.50 U	9.80 U	2.50 U	9.80 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	9.90 U
Aroclor 1268	2.00 U	9.90 U	2.00 U	9.80 U	2.00 U	10.0 U	2.00 U	9.90 U	2.00 U	9.80 U	2.00 U	9.80 U	2.00 U	10.0 U	2.00 U	10.0 U	2.00 U	9.90 U
Total PCBs as Aroclors [1]	32.0 U	32.0 U	30.0 U	30.0 U	28.0 U	28.0 U	28.0 U	28.0 U	30.0 U	30.0 U	**21.0**	**21.0**	**21.0**	**21.0**	**23.0**	**23.0**	**21.0**	**21.0**

Notes:
[1] Only Aroclor 1254 was included in summing Total PCBs as Aroclors because all other aroclors were undected in Forebay clam samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
- = Not Analyzed
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-13
Forebay - Random Sediment and Tissue PCB Aroclor Analysis Results
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Media	Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish	
Site ID	P01-CF		P02-CF		P03-CF		P04-CF		P05-CF		P06-CF		P07-CF		P08-CF		P13-CF		P14-CF	
Sample ID	08021901CF		08021902CF		08022003CF		08021904CF		08021505CF		08021406CF		08021407CF		08021408CF		08021413CF		08022014CF	
Sample Date	2/19/2008		2/19/2008		2/20/2008		2/19/2008		2/15/2008		2/14/2008		2/14/2008		2/14/2008		2/14/2008		2/20/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	2.40 U	9.90 U	2.40 U	10.0 U	2.40 U	9.90 U	2.40 U	9.90 U	2.40 U	9.80 U	2.40 U	10.0 U	2.40 U	9.90 U	2.40 U	9.90 U	2.40 U	9.80 U	2.40 U	9.60 U
Aroclor 1221	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U
Aroclor 1232	2.30 U	9.90 U	2.30 U	10.0 U	2.30 U	9.90 U	2.30 U	9.90 U	2.30 U	9.80 U	2.30 U	10.0 U	2.30 U	9.90 U	2.30 U	9.90 U	2.30 U	9.80 U	2.30 U	9.60 U
Aroclor 1242	2.20 U	9.90 U	2.20 U	10.0 U	2.20 U	9.90 U	2.20 U	9.90 U	2.20 U	9.80 U	2.20 U	10.0 U	2.20 U	9.90 U	2.20 U	9.90 U	2.20 U	9.80 U	2.20 U	9.60 U
Aroclor 1248	0.510 U	9.90 U	0.510 U	10.0 U	0.510 U	9.90 U	0.510 U	9.90 U	0.510 U	9.80 U	0.510 U	10.0 U	0.510 U	9.90 U	0.510 U	9.90 U	0.510 U	9.80 U	0.510 U	9.60 U
Aroclor 1254	1.80 U	9.90 U	1.80 U	10.0 U	1.80 U	9.90 U	1.80 U	9.90 U	1.80 U	9.80 U	19.0 U	19.0 U	1.90 U	9.90 U	1.80 U	9.90 U	1.80 U	9.80 U	1.80 U	9.60 U
Aroclor 1260	1.90 U	9.90 U	1.90 U	10.0 U	1.90 U	9.90 U	8.60 U	9.90 U	7.10 U	9.80 U	17.0 U	17.0 U	4.00 U	9.90 U	1.90 U	9.90 U	1.90 U	9.80 U	1.90 U	9.60 U
Aroclor 1262	2.50 U	9.90 U	2.50 U	10.0 U	2.50 U	9.90 U	2.50 U	9.90 U	9.80 U	9.80 U	10.0 U	10.0 U	2.60 U	9.90 U	2.50 U	9.90 U	2.50 U	9.80 U	2.50 U	9.60 U
Aroclor 1268	2.00 U	9.90 U	2.00 U	10.0 U	2.00 U	9.90 U	2.00 U	9.90 U	2.00 U	9.80 U	2.00 U	10.0 U	2.00 U	9.90 U	2.00 U	9.90 U	2.00 U	9.80 U	2.00 U	9.60 U
Total PCBs as Aroclors [1]	2.60 U	20.00 U	2.60 U	20.0 U	2.60 U	20.0 U	8.60 U	20.0 U	9.80 U	20.0 U	19.0 U	20.0 U	4.00 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U

Notes:
[1] The crayfish Total PCBs as Aroclors is shown as the maximum MDL/MRL because all aroclors were undected in Forebay crayfish samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
- = Not Analyzed
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-13
Forebay - Random Sediment and Tissue PCB Aroclor Analysis Results
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Media	Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Sculpin		Sculpin		Sculpin	
Site ID	**P15-CF**		**P16-CF**		**P17-CF**		**P18-CF**		**P19-CF**		**P20-CF**		**P21-CF**		**SF-01**		**SF-02**		**SF-03**	
Sample ID	**08021915CF**		**08022216CF**		**08021917CF**		**08021918CF**		**08021919CF**		**08021920CF**		**08021921CF**		**F-1**		**F-2**		**F-3**	
Sample Date	**2/19/2008**		**2/22/2008**		**2/19/2008**		**2/19/2008**		**2/19/2008**		**2/19/2008**		**2/19/2008**		**9/17/2008**		**9/17/2008**		**9/17/2008**	
Censoring Level for Undetected Results	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**	**MDL**	**MRL**
Aroclor 1016	2.40 U	9.60 U	2.40 U	9.90 U	2.40 U	10.0 U	2.40 U	9.60 U	2.40 U	9.80 U	2.40 U	9.80 U	2.40 U	9.80 U	2.40 U	9.20 U	2.40 U	9.20 U	12.0 U	50.0 U
Aroclor 1221	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	19.0 U	2.60 U	19.0 U	13.0 U	99.0 U
Aroclor 1232	2.30 U	9.60 U	2.30 U	9.90 U	2.30 U	10.0 U	2.30 U	9.60 U	2.30 U	9.80 U	2.30 U	9.80 U	2.30 U	9.80 U	2.30 U	9.20 U	2.30 U	9.20 U	12.0 U	50.0 U
Aroclor 1242	2.20 U	9.60 U	2.20 U	9.90 U	2.20 U	10.0 U	2.20 U	9.60 U	2.20 U	9.80 U	2.20 U	9.80 U	2.20 U	9.80 U	2.20 U	9.20 U	2.20 U	9.20 U	11.0 U	50.0 U
Aroclor 1248	0.510 U	9.60 U	0.510 U	9.90 U	0.510 U	10.0 U	0.510 U	9.60 U	0.510 U	9.80 U	0.510 U	9.80 U	0.510 U	9.80 U	0.510 U	9.20 U	0.510 U	9.20 U	2.60 U	50.0 U
Aroclor 1254	1.80 U	9.60 U	1.80 U	9.90 U	1.80 U	10.0 U	1.80 U	9.60 U	1.80 U	9.80 U	1.80 U	9.80 U	1.80 U	9.80 U	13.0 U	13.0 U	43.0 U	43.0 U	**1700**	**1700**
Aroclor 1260	1.90 U	9.60 U	1.90 U	9.90 U	1.90 U	10.0 U	1.90 U	9.60 U	1.90 U	9.80 U	1.90 U	9.80 U	1.90 U	9.80 U	1.90 U	9.20 U	36.0 U	36.0 U	9.50 U	50.0 U
Aroclor 1262	2.50 U	9.60 U	2.50 U	9.90 U	2.50 U	10.0 U	2.50 U	9.60 U	2.50 U	9.80 U	2.50 U	9.80 U	2.50 U	9.80 U	2.50 U	9.20 U	2.50 U	9.20 U	13.0 U	50.0 U
Aroclor 1268	2.00 U	9.60 U	2.00 U	9.90 U	2.00 U	10.0 U	2.00 U	9.60 U	2.00 U	9.80 U	2.00 U	9.80 U	2.00 U	9.80 U	2.00 U	9.20 U	2.00 U	9.20 U	10.0 U	50.0 U
Total PCBs as Aroclors [1]	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	13.0 U	13.0 U	43.0 U	43.0 U	**1700**	**1700**

Notes:
[1] The crayfish Total PCBs as Aroclors is shown as the maximum MDL/MRL because all aroclors were undected in Forebay crayfish samples.
Only Aroclor 1254 was included in summing sculpin Total PCBs as Aroclors because all other aroclors were undected in Forebay sculpin samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
- = Not Analyzed
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-13
Forebay - Random Sediment and Tissue PCB Aroclor Analysis Results
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Media	Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Sculpin	
Site ID	SF-04		SF-05		SF-06		SF-07		SF-08		SF-09		SF-10		SF-11		SF-12		SF-13	
Sample ID	F-4		F-5		F-6		F-7		F-8		F-9		F-10		F-11		F-12		F-13	
Sample Date	9/17/2008		10/22/2008		9/19/2008		10/21/2008		9/17/2008		9/19/2008		10/21/2008		9/17/2008		2/22/2008		2/22/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	2.40 U	9.90 U	2.40 U	9.20 U	2.40 U	9.50 U	2.40 U	9.40 U	2.40 U	9.20 U	2.40 U	9.40 U	2.40 U	9.80 U	2.40 U	9.60 U	14.0 UJ	38.0 UJ	8.20 UJ	35.0 UJ
Aroclor 1221	2.60 U	20.0 U	2.60 U	19.0 U	2.60 U	19.0 U	2.60 U	19.0 U	2.60 U	19.0 U	2.60 U	19.0 U	2.60 U	20.0 U	2.60 U	20.0 U	27.0 UJ	75.0 UJ	69.0 UJ	69.0 UJ
Aroclor 1232	2.30 U	9.90 U	2.30 U	9.20 U	2.30 U	9.50 U	2.30 U	9.40 U	2.30 U	9.20 U	2.30 U	9.40 U	2.30 U	9.80 U	2.30 U	9.60 U	38.0 UJ	38.0 UJ	62.0 UJ	62.0 UJ
Aroclor 1242	2.20 U	9.90 U	2.20 U	9.20 U	2.20 U	9.50 U	2.20 U	9.40 U	2.20 U	9.20 U	2.20 U	9.40 U	2.20 U	9.80 U	2.20 U	9.60 U	23.0 UJ	38.0 UJ	35.0 UJ	35.0 UJ
Aroclor 1248	0.510 U	9.90 U	0.510 U	9.20 U	0.510 U	9.50 U	0.510 U	9.40 U	0.510 U	9.20 U	0.510 U	9.40 U	0.510 U	9.80 U	0.510 U	9.60 U	13.0 UJ	38.0 UJ	6.70 UJ	35.0 UJ
Aroclor 1254	**470**	**470**	**130**	**130**	130 U	130 U	28.0 U	28.0 U	20.0 U	20.0 U	27.0 U	27.0 U	19.0 U	19.0 U	28.0 U	28.0 U	23.0 UJ	38.0 UJ	35.0 UJ	35.0 UJ
Aroclor 1260	1.90 U	9.90 U	1.90 U	9.20 U	82.0 U	82.0 U	1.90 U	9.40 U	1.90 U	9.20 U	13.0 U	13.0 U	1.90 U	9.80 U	1.90 U	9.60 U	38.0 UJ	38.0 UJ	6.50 UJ	35.0 UJ
Aroclor 1262	2.50 U	9.90 U	2.50 U	9.20 U	2.50 U	9.50 U	2.50 U	9.40 U	2.50 U	9.20 U	2.50 U	9.40 U	2.50 U	9.80 U	2.50 U	9.60 U	9.30 UJ	38.0 UJ	8.60 UJ	35.0 UJ
Aroclor 1268	2.00 U	9.90 U	2.00 U	9.20 U	2.00 U	9.50 U	2.00 U	9.40 U	2.00 U	9.20 U	2.00 U	9.40 U	2.00 U	9.80 U	2.00 U	9.60 U	7.50 UJ	38.0 UJ	6.90 UJ	35.0 UJ
Total PCBs as Aroclors [1]	**470**	**470**	**130**	**130**	130 U	130 U	28.0 U	28.0 U	20.0 U	20.0 U	27.0 U	27.0 U	19.0 U	19.0 U	28.0 U	28.0 U	23.0 UJ	38.0 UJ	35.0 UJ	35.0 UJ

Notes:
[1] Only Aroclor 1254 was included in summing sculpin Total PCBs as Aroclors because all other aroclors were undected in Forebay sculpin samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
- = Not Analyzed
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-13
Forebay - Random Sediment and Tissue PCB Aroclor Analysis Results
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Media	Sculpin		Sculpin		Sculpin		Sculpin		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass	
Site ID	SF-14		SF-15		SF-16		SF-17		01		02		03		04		05	
Sample ID	F-14		F-15		F-16		F-17		060605100SB		060605101SB		060605200SB		060605201SB		060605202SB	
Sample Date	10/22/2008		10/21/2008		10/21/2008		10/21/2008		6/5/2006		6/5/2006		6/5/2006		6/5/2006		6/5/2006	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	2.40 U	10.0 U	2.40 U	9.90 U	2.40 U	9.80 U	2.40 U	9.30 U	2.40 UJ	10.0 UJ	24.0 UJ	100 UJ	2.40 UJ	10.0 UJ	2.40 UJ	10.0 UJ	2.40 UJ	10.0 UJ
Aroclor 1221	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	19.0 U	2.60 UJ	20.0 UJ	26.0 UJ	200 UJ	2.60 UJ	20.0 UJ	2.60 UJ	20.0 UJ	2.60 UJ	20.0 UJ
Aroclor 1232	2.30 U	10.0 U	2.30 U	9.90 U	2.30 U	9.80 U	2.30 U	9.30 U	2.30 UJ	10.0 UJ	23.0 UJ	100 UJ	2.30 UJ	10.0 UJ	2.30 UJ	10.0 UJ	2.30 UJ	10.0 UJ
Aroclor 1242	2.20 U	10.0 U	2.20 U	9.90 U	2.20 U	9.80 U	2.20 U	9.30 U	2.20 UJ	10.0 UJ	22.0 UJ	100 UJ	2.20 UJ	10.0 UJ	2.20 UJ	10.0 UJ	2.20 UJ	10.0 UJ
Aroclor 1248	0.510 U	10.0 U	0.510 U	9.90 U	0.510 U	9.80 U	0.510 U	9.30 U	0.510 UJ	10.0 UJ	5.10 UJ	100 UJ	68.0 UJ	68.0 UJ	0.510 UJ	10.0 UJ	5.00 UJ	10.0 UJ
Aroclor 1254	29.0 U	29.0 U	27.0 U	27.0 U	37.0 U	37.0 U	32.0 U	32.0 U	28.0 UJ	28.0 UJ	**1300 J**	**1300 J**	240 UJ	240 UJ	67.0 UJ	67.0 UJ	**51.0 J**	**51.0 J**
Aroclor 1260	1.90 U	10.0 U	1.90 U	9.90 U	1.90 U	9.80 U	1.90 U	9.30 U	24.0 UJ	24.0 UJ	19.0 UJ	100 UJ	150 UJ	150 UJ	48.0 UJ	48.0 UJ	25.0 UJ	25.0 UJ
Aroclor 1262	2.50 U	10.0 U	2.50 U	9.90 U	2.50 U	9.80 U	2.50 U	9.30 U	2.50 UJ	10.0 UJ	25.0 UJ	100 UJ	98.0 UJ	98.0 UJ	21.0 UJ	21.0 UJ	8.40 UJ	10.0 UJ
Aroclor 1268	2.00 U	10.0 U	2.00 U	9.90 U	2.00 U	9.80 U	2.00 U	9.30 U	2.00 UJ	10.0 UJ	20.0 UJ	100 UJ	2.00 UJ	10.0 UJ	2.00 UJ	10.0 UJ	2.00 UJ	10.0 UJ
Total PCBs as Aroclors [1]	29.0 U	29.0 U	27.0 U	27.0 U	37.0 U	37.0 U	32.0 U	32.0 U	30.2 UJ	38.0 UJ	**1322 J**	**1400 J**	242 UJ	250 UJ	69.2 UJ	77.0 UJ	**53.2 J**	**61.0 J**

Notes:
[1] Only Aroclor 1254 was included in summing sculpin Total PCBs as Aroclors because all other aroclors were undected in Forebay sculpin samples.
Only Aroclors 1242 and 1254 were included in summing smallmouth bass Total PCBs as Aroclors because all other aroclors were undected in Forebay smallmouth bass samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
- = Not Analyzed
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-13
Forebay - Random Sediment and Tissue PCB Aroclor Analysis Results
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Media	Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass	
Site ID	06		07		08		09		10		11		12		13		14	
Sample ID	060605203SB		060605204SB		060605205SB		060605207SB		060605208SB		060605209SB		060606102SB		060606103SB		060606104SB	
Sample Date	6/5/2006		6/5/2006		6/5/2006		6/5/2006		6/5/2006		6/5/2006		6/6/2006		6/6/2006		6/6/2006	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	2.50 UJ	11.0 UJ	2.40 UJ	10.0 UJ	24.0 UJ	100 UJ	4.70 UJ	9.90 UJ	2.40 UJ	10.0 UJ	240 UJ	1000 UJ	2.40 UJ	10.0 UJ	120 UJ	120 UJ	6.00 UJ	10.0 UJ
Aroclor 1221	2.70 UJ	21.0 UJ	2.60 UJ	20.0 UJ	26.0 UJ	200 UJ	25.0 UJ	25.0 UJ	2.60 UJ	20.0 UJ	260 UJ	2000 UJ	2.60 UJ	20.0 UJ	20.0 UJ	20.0 UJ	32.0 UJ	32.0 UJ
Aroclor 1232	2.40 UJ	11.0 UJ	2.30 UJ	10.0 UJ	23.0 UJ	100 UJ	14.0 UJ	14.0 UJ	2.30 UJ	10.0 UJ	230 UJ	1000 UJ	2.30 UJ	10.0 UJ	8.90 UJ	9.90 UJ	12.0 UJ	12.0 UJ
Aroclor 1242	2.30 UJ	11.0 UJ	2.20 UJ	10.0 UJ	22.0 UJ	100 UJ	4.40 UJ	9.90 UJ	2.20 UJ	10.0 UJ	220 UJ	1000 UJ	2.20 UJ	10.0 UJ	3.80 UJ	9.90 UJ	10.0 UJ	10.0 UJ
Aroclor 1248	12.0 UJ	12.0 UJ	11.0 UJ	11.0 UJ	5.10 UJ	100 UJ	9.10 UJ	9.90 UJ	12.0 UJ	12.0 UJ	51.0 UJ	1000 UJ	33.0 UJ	33.0 UJ	61.0 UJ	61.0 UJ	4.20 UJ	10.0 UJ
Aroclor 1254	95.0 UJ	95.0 UJ	38.0 UJ	38.0 UJ	**1300 J**	**1300 J**	25.0 UJ	25.0 UJ	96.0 UJ	96.0 UJ	**14000 J**	**14000 J**	85.0 UJ	85.0 UJ	420 UJ	420 UJ	11.0 UJ	11.0 UJ
Aroclor 1260	73.0 UJ	73.0 UJ	37.0 UJ	37.0 UJ	19.0 UJ	100 UJ	67.0 UJ	67.0 UJ	78.0 UJ	78.0 UJ	190 UJ	1000 UJ	300 UJ	300 UJ	200 UJ	200 UJ	26.0 UJ	26.0 UJ
Aroclor 1262	21.0 UJ	21.0 UJ	12.0 UJ	12.0 UJ	25.0 UJ	100 UJ	24.0 UJ	24.0 UJ	50.0 UJ	50.0 UJ	250 UJ	1000 UJ	110 UJ	110 UJ	160 UJ	160 UJ	16.0 UJ	16.0 UJ
Aroclor 1268	2.10 UJ	11.0 UJ	2.00 UJ	10.0 UJ	20.0 UJ	100 UJ	6.40 UJ	9.90 UJ	16.0 UJ	16.0 UJ	200 UJ	1000 UJ	5.90 UJ	10.0 UJ	9.90 UJ	9.90 UJ	5.00 UJ	10.0 UJ
Total PCBs as Aroclors [1]	97.3 UJ	106 UJ	40.2 UJ	48.0 UJ	**1322 J**	**1400 J**	29.4 UJ	34.9 UJ	98.2 UJ	106 UJ	**14220 J**	**15000 J**	87.2 UJ	95.0 UJ	424 UJ	429.9 UJ	21.0 UJ	21.0 UJ

Notes:
[1] Only Aroclors 1242 and 1254 were included in summing smallmouth bass Total PCBs as Aroclors because all other aroclors were undected in Forebay smallmouth bass samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
- = Not Analyzed
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-13
Forebay - Random Sediment and Tissue PCB Aroclor Analysis Results
(Page 6 of 10)

Media	Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Large Scale Sucker	
Site ID	15		16		17		18		19		SUCKER	
Sample ID	060606210SB		060815402SB		060815403SB		060815405SB		060815406SB		070505LS	
Sample Date	6/6/2006		8/15/2006		8/15/2006		8/15/2006		8/15/2006		5/5/2007	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	10.0 UJ	10.0 UJ	2.40 UJ	10.0 UJ	120 UJ	500 UJ	24.0 UJ	99.0 UJ	9.90 UJ	9.90 UJ	2.40 U	10.0 U
Aroclor 1221	20.0 UJ	20.0 UJ	2.60 UJ	20.0 UJ	130 UJ	990 UJ	26.0 UJ	200 UJ	2.60 UJ	20.0 UJ	2.60 U	20.0 U
Aroclor 1232	10.0 UJ	10.0 UJ	2.30 UJ	10.0 UJ	120 UJ	500 UJ	23.0 UJ	99.0 UJ	9.90 UJ	9.90 UJ	2.30 U	10.0 U
Aroclor 1242	8.50 UJ	10.0 UJ	**260 J**	**260 J**	110 UJ	500 UJ	22.0 UJ	99.0 UJ	4.70 UJ	9.90 UJ	2.20 U	10.0 U
Aroclor 1248	10.0 UJ	10.0 UJ	0.510 UJ	10.0 UJ	26.0 UJ	500 UJ	5.10 UJ	99.0 UJ	5.70 UJ	9.90 UJ	0.510 U	10.0 U
Aroclor 1254	16.0 UJ	16.0 UJ	**330 J**	**330 J**	**18000 J**	**18000 J**	**1400 J**	**1400 J**	13.0 UJ	13.0 UJ	**160**	**160**
Aroclor 1260	31.0 UJ	31.0 UJ	1.90 UJ	10.0 UJ	95.0 UJ	500 UJ	19.0 UJ	99.0 UJ	37.0 UJ	37.0 UJ	1.90 U	10.0 U
Aroclor 1262	10.0 UJ	10.0 UJ	2.50 UJ	10.0 UJ	130 UJ	500 UJ	25.0 UJ	99.0 UJ	12.0 UJ	12.0 UJ	-	-
Aroclor 1268	2.50 UJ	10.0 UJ	2.00 UJ	10.0 UJ	100 UJ	500 UJ	20.0 UJ	99.0 UJ	3.50 UJ	9.90 UJ	2.00 U	10.0 U
Total PCBs as Aroclors [1]	24.5 UJ	26.0 UJ	**590 J**	**590 J**	**18110 J**	**18500 J**	**1422 J**	**1499 J**	17.7 UJ	22.9 UJ	**160**	**160**

Notes:
[1] Only Aroclors 1242 and 1254 were included in summing bass Total PCBs as Aroclors because all other aroclors were undected in Forebay smallmouth bass samples.
Only Aroclor 1254 was included in summing sucker Total PCBs as Aroclors because all other aroclors were undected in Forebay large scale sucker samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
- = Not Analyzed
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-14
Forebay - Targeted Sediment and Tissue PCB Aroclor Analysis Results
(Page 1 of 1)

Area	Forebay - Eagle Creek		Forebay - Eagle Creek		Forebay - Goose Island		Forebay - Goose Island		Forebay - Goose Island		Forebay - Goose Island	
Media	Sediment		Sediment		Sediment		Sediment		Clam		Crayfish	
Site ID	P43		P44		P110		P111		P110		P110	
Sample ID	08032043SD		08032044SD		090427110SD		090429111SD		090429110TC		090429110CF	
Sample Date	3/20/2008		3/20/2008		4/27/2009		4/29/2009		4/29/2009		4/29/2009	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	1.70 U	7.40 U	1.70 U	7.30 U	2.50 U	12.0 U	2.70 U	13.0 U	6.10 UJ	9.70 UJ	2.40 U	9.50 U
Aroclor 1221	1.70 U	15.0 U	1.70 U	15.0 U	2.50 U	24.0 U	2.70 U	26.0 U	5.90 UJ	9.70 UJ	2.60 U	9.50 U
Aroclor 1232	1.70 U	7.40 U	1.70 U	7.30 U	2.50 U	12.0 U	2.70 U	13.0 U	9.70 UJ	9.70 UJ	2.30 U	9.50 U
Aroclor 1242	1.70 U	7.40 U	1.70 U	7.30 U	2.50 U	12.0 U	2.70 U	13.0 U	6.60 UJ	9.70 UJ	2.20 U	9.50 U
Aroclor 1248	**76.0**	**76.0**	1.70 U	7.30 U	2.50 U	12.0 U	2.70 U	13.0 U	5.20 UJ	9.70 UJ	0.510 U	9.50 U
Aroclor 1254	1.70 U	7.40 U	1.70 U	7.30 U	2.50 U	12.0 U	**9.90 J**	**9.90 J**	14.0 UJ	14.0 UJ	1.80 U	9.50 U
Aroclor 1260	1.70 U	7.40 U	1.70 U	7.30 U	2.50 UJ	12.0 UJ	2.70 UJ	13.0 UJ	6.30 UJ	9.70 UJ	1.90 U	9.50 U
Aroclor 1262	1.70 U	7.40 U	1.70 U	7.30 U	-	-	-	-	3.20 UJ	9.70 UJ	2.50 U	9.50 U
Aroclor 1268	1.70 U	7.40 U	1.70 U	7.30 U	-	-	-	-	2.00 UJ	9.70 UJ	2.00 U	9.50 U
Total PCBs as Aroclors [1]	**77.7 J**	**83.4 J**	3.40 U	14.6 U	5.00 U	24.0 U	**12.6 J**	**22.9 J**	14.0 UJ	14.0 UJ	2.60 U	9.50 U

Notes:

[1] Only Aroclors 1248 and 1254 were included in summing sediment Total PCBs as Aroclors because all other aroclors were undected in Forebay sediment samples.
Only Aroclor 1254 was included in summing clam Total PCBs as Aroclors because all other aroclors were undected in Forebay clam samples.
The crayfish Total PCBs as Aroclors is shown as the maximum MDL/MRL because all aroclors were undected in Forebay crayfish samples.

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
- = Not Analyzed
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
Sediment is in micrograms per kilogram (µg/kg), dry weight
Tissue is in micrograms per kilogram (µg/kg), wet weight

Table H-15
Reference Area Sediment and Tissue PCB Aroclor Analysis Results
(Page 1 of 10)

Media	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment	
Site ID	P22		P24		P26		P27		P28		P29		P34		P35		P36	
Sample ID	08030522SD		08030524SD		08030426SD		08030427SD		08030428SD		08022229SD		08022534SD		08022535SD		08022536SD	
Sample Date	3/5/2008		3/5/2008		3/4/2008		3/4/2008		3/4/2008		2/22/2008		2/25/2008		2/25/2008		2/25/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.60 U	1.80 U	11.0 U	1.70 U	10.0 U	1.70 U	10.0 U	10.0 U	10.0 U	1.70 U	10.0 U
Aroclor 1221	1.70 U	20.0 U	1.70 U	20.0 U	1.70 U	20.0 U	1.70 U	20.0 U	1.80 U	21.0 U	1.70 U	20.0 U	1.70 U	20.0 U	6.00 U	20.0 U	1.70 U	20.0 U
Aroclor 1232	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.60 U	1.80 U	11.0 U	1.70 U	10.0 U	1.70 U	10.0 U	10.0 U	10.0 U	1.70 U	10.0 U
Aroclor 1242	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.60 U	1.80 U	11.0 U	1.70 U	10.0 U	1.70 U	10.0 U	16.0 U	16.0 U	1.70 U	10.0 U
Aroclor 1248	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.60 U	1.80 U	11.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Aroclor 1254	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.60 U	1.80 U	11.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Aroclor 1260	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.60 U	1.80 U	11.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Aroclor 1262	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.60 U	1.80 U	11.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Aroclor 1268	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.60 U	1.80 U	11.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Total PCBs as Aroclors [1]	1.70 U	20.0 U	1.70 U	20.0 U	1.70 U	20.0 U	1.70 U	20.0 U	1.80 U	21.0 U	1.70 U	20.0 U	1.70 U	20.0 U	16.0 U	20.0 U	1.70 U	20.0 U

Notes:
[1] The sediment Total PCBs as Aroclors is shown as the maximum MDL/MRL because all aroclors were undected in Reference Area sediment samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
U = The analyte was not detected at or above the MDL.
Sediment is in micrograms per kilogram (µg/kg), dry weight

Table H-15
Reference Area Sediment and Tissue PCB Aroclor Analysis Results
(Page 2 of 10)

Media	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment	
Site ID	P37		P38		P39		P40		P41		P42		P85		P86		P87	
Sample ID	08022637SD		08022738SD		08022739SD		08022740SD		08022741SD		08022742SD		08030685SD		08030686SD		08030687SD	
Sample Date	2/26/2008		2/27/2008		2/27/2008		2/27/2008		2/27/2008		2/27/2008		3/6/2008		3/6/2008		3/6/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	1.70 U	10.0 U	13.0 U	13.0 U	1.70 U	9.90 U	3.40 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Aroclor 1221	9.80 U	20.0 U	11.0 U	20.0 U	1.70 U	20.0 U	6.20 U	20.0 U	1.70 U	20.0 U	1.70 U	20.0 U	1.70 U	20.0 U	1.70 U	20.0 U	1.70 U	20.0 U
Aroclor 1232	11.0 U	11.0 U	12.0 U	12.0 U	1.70 U	9.90 U	10.0 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Aroclor 1242	14.0 U	14.0 U	1.70 U	10.0 U	1.70 U	9.90 U	13.0 U	13.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Aroclor 1248	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Aroclor 1254	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Aroclor 1260	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Aroclor 1262	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Aroclor 1268	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U
Total PCBs as Aroclors [1]	14.0 U	20.0 U	13.0 U	20.0 U	1.70 U	20.0 U	13.0 U	20.0 U	1.70 U	20.0 U	1.70 U	20.0 U	1.70 U	20.0 U	1.70 U	20.0 U	1.70 U	20.0 U

Notes:
[1] The sediment Total PCBs as Aroclors is shown as the maximum MDL/MRL because all aroclors were undected in Reference Area sediment samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
U = The analyte was not detected at or above the MDL.
Sediment is in micrograms per kilogram (µg/kg), dry weight

Table H-15
Reference Area Sediment and Tissue PCB Aroclor Analysis Results
(Page 3 of 10)

Media	Clam		Clam		Clam		Clam		Clam		Clam		Clam		Clam		Clam	
Site ID	P22		P24		P26		P27		P28		P29		P34		P35		P36	
Sample ID	08030522TC		08030524TC		08030426TC		08030427TC		08030428TC		08022229TC		08022534TC		08022535TC		08022536TC	
Sample Date	3/5/2008		3/5/2008		3/4/2008		3/4/2008		3/4/2008		2/22/2008		2/25/2008		2/25/2008		2/25/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	13.0 U	13.0 U	11.0 U	11.0 U	11.0 U	11.0 U	12.0 U	12.0 U	8.90 U	9.80 U	13.0 U	13.0 U	12.0 U	12.0 U	9.50 U	9.90 U	8.40 U	9.90 U
Aroclor 1221	14.0 U	20.0 U	14.0 U	20.0 U	14.0 U	20.0 U	8.20 U	20.0 U	9.60 U	20.0 U	16.0 U	20.0 U	15.0 U	20.0 U	8.80 U	20.0 U	12.0 U	20.0 U
Aroclor 1232	19.0 U	19.0 U	18.0 U	18.0 U	22.0 U	22.0 U	27.0 U	27.0 U	18.0 U	18.0 U	26.0 U	26.0 U	23.0 U	23.0 U	28.0 U	28.0 U	19.0 U	19.0 U
Aroclor 1242	13.0 U	13.0 U	7.90 U	9.70 U	11.0 U	11.0 U	12.0 U	12.0 U	12.0 U	12.0 U	13.0 U	13.0 U	13.0 U	13.0 U	14.0 U	14.0 U	13.0 U	13.0 U
Aroclor 1248	5.70 U	10.0 U	5.70 U	9.70 U	7.60 U	9.90 U	8.30 U	9.90 U	5.70 U	9.80 U	7.70 U	9.80 U	6.40 U	9.90 U	9.10 U	9.90 U	9.90 U	9.90 U
Aroclor 1254	**36.0**	**36.0**	**30.0**	**30.0**	**35.0**	**35.0**	**37.0**	**37.0**	**33.0**	**33.0**	**32.0**	**32.0**	**32.0**	**32.0**	**37.0**	**37.0**	**38.0**	**38.0**
Aroclor 1260	6.40 U	10.0 U	6.20 U	9.70 U	6.50 U	9.90 U	6.80 U	9.90 U	6.60 U	9.80 U	5.70 U	9.80 U	5.90 U	9.90 U	7.70 U	9.90 U	7.60 U	9.90 U
Aroclor 1262	9.30 U	10.0 U	7.20 U	9.70 U	7.70 U	9.90 U	7.80 U	9.90 U	7.50 U	9.80 U	8.00 U	9.80 U	8.10 U	9.90 U	8.10 U	9.90 U	7.70 U	9.90 U
Aroclor 1268	2.00 U	10.0 U	2.00 U	9.70 U	2.00 U	9.90 U	2.00 U	9.90 U	2.00 U	9.80 U	2.00 U	9.80 U	2.00 U	9.90 U	2.00 U	9.90 U	2.00 U	9.90 U
Total PCBs as Aroclors [1]	**36.0**	**36.0**	**30.0**	**30.0**	**35.0**	**35.0**	**37.0**	**37.0**	**33.0**	**33.0**	**32.0**	**32.0**	**32.0**	**32.0**	**37.0**	**37.0**	**38.0**	**38.0**

Notes:
[1] Only Aroclors 1254 was included in summing clam Total PCBs as Aroclors because all other aroclors were undected in Reference Area clam samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
U = The analyte was not detected at or above the MDL.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-15
Reference Area Sediment and Tissue PCB Aroclor Analysis Results
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Media	Clam		Clam		Clam		Clam		Clam		Clam		Clam		Clam		Clam	
Site ID	P37		P38		P39		P40		P41		P42		P85		P86		P87	
Sample ID	08022637TC		08022738TC		08022739TC		08022740TC		08022741TC		08022742TC		08030685TC		08030686TC		08030687TC	
Sample Date	2/26/2008		2/27/2008		2/27/2008		2/27/2008		2/27/2008		2/27/2008		3/6/2008		3/6/2008		3/6/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	9.70 U	9.90 U	15.0 U	15.0 U	15.0 U	15.0 U	12.0 U	12.0 U	14.0 U	14.0 U	12.0 U	12.0 U	14.0 U	14.0 U	12.0 U	12.0 U	9.50 U	10.0 U
Aroclor 1221	16.0 U	20.0 U	6.30 U	20.0 U	7.40 U	20.0 U	12.0 U	20.0 U	7.50 U	20.0 U	16.0 U	20.0 U	12.0 U	20.0 U	9.10 U	20.0 U	9.20 U	20.0 U
Aroclor 1232	29.0 U	29.0 U	35.0 U	35.0 U	33.0 U	33.0 U	22.0 U	22.0 U	31.0 U	31.0 U	20.0 U	20.0 U	28.0 U	28.0 U	24.0 U	24.0 U	26.0 U	26.0 U
Aroclor 1242	9.30 U	9.90 U	12.0 U	12.0 U	11.0 U	11.0 U	9.70 U	10.0 U	14.0 U	14.0 U	9.40 U	10.0 U	9.90 U	9.90 U	9.20 U	9.90 U	9.50 U	10.0 U
Aroclor 1248	9.90 U	9.90 U	9.40 U	9.90 U	9.60 U	9.60 U	8.70 U	10.0 U	8.90 U	9.80 U	8.20 U	10.0 U	9.90 U	9.90 U	7.10 U	9.90 U	5.50 U	10.0 U
Aroclor 1254	**35.0**	**35.0**	**37.0**	**37.0**	**38.0**	**38.0**	**37.0**	**37.0**	**39.0**	**39.0**	**35.0**	**35.0**	**34.0**	**34.0**	**31.0**	**31.0**	**33.0**	**33.0**
Aroclor 1260	7.30 U	9.90 U	8.10 U	9.90 U	7.50 U	9.60 U	6.90 U	10.0 U	7.70 U	9.80 U	7.50 U	10.0 U	6.70 U	9.90 U	6.20 U	9.90 U	6.60 U	10.0 U
Aroclor 1262	3.70 U	9.90 U	7.60 U	9.90 U	9.10 U	9.60 U	9.90 U	10.0 U	7.80 U	9.80 U	9.10 U	10.0 U	8.20 U	9.90 U	7.90 U	9.90 U	8.40 U	10.0 U
Aroclor 1268	2.00 U	9.90 U	2.00 U	9.90 U	2.00 U	9.60 U	2.00 U	10.0 U	2.00 U	9.80 U	2.00 U	10.0 U	2.00 U	9.90 U	2.00 U	9.90 U	2.00 U	10.0 U
Total PCBs as Aroclors [1]	**35.0**	**35.0**	**37.0**	**37.0**	**38.0**	**38.0**	**37.0**	**37.0**	**39.0**	**39.0**	**35.0**	**35.0**	**34.0**	**34.0**	**31.0**	**31.0**	**33.0**	**33.0**

Notes:
[1] Only Aroclors 1254 was included in summing clam Total PCBs as Aroclors because all other aroclors were undected in Reference Area clam samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
U = The analyte was not detected at or above the MDL.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-15
Reference Area Sediment and Tissue PCB Aroclor Analysis Results
(Page 1 of 10)

Media	Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish	
Site ID	P100-CF		P105-CF		P22-CF		P33-CF		P38-CF		P42-CF		P72-CF		P73-CF		P74-CF		P75-CF	
Sample ID	080312100CF		080314105CF		08022622CF		08022233CF		08021838CF		08022842CF		08030372CF		08030373CF		08030374CF		08030375CF	
Sample Date	3/12/2008		3/14/2008		2/26/2008		2/26/2008		2/18/2008		2/28/2008		3/3/2008		3/3/2008		3/3/2008		3/3/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	2.40 U	9.90 U	3.00 U	13.0 U	2.40 U	9.40 U	2.40 U	9.90 U	4.60 U	20.0 U	2.40 U	10.0 U	2.40 U	10.0 U	2.40 U	9.50 U	2.40 U	9.90 U	2.40 U	9.80 U
Aroclor 1221	2.60 U	20.0 U	3.30 U	25.0 U	2.60 U	19.0 U	2.60 U	20.0 U	5.00 U	39.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	19.0 U	2.60 U	20.0 U	2.60 U	20.0 U
Aroclor 1232	2.30 U	9.90 U	2.90 U	13.0 U	2.30 U	9.40 U	2.30 U	9.90 U	4.40 U	20.0 U	2.30 U	10.0 U	2.30 U	10.0 U	2.30 U	9.50 U	2.30 U	9.90 U	2.30 U	9.80 U
Aroclor 1242	2.20 U	9.90 U	2.80 U	13.0 U	2.20 U	9.40 U	2.20 U	9.90 U	4.30 U	20.0 U	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	9.50 U	2.20 U	9.90 U	2.20 U	9.80 U
Aroclor 1248	0.510 U	9.90 U	0.64 U	13.0 U	0.510 U	9.40 U	0.510 U	9.90 U	0.98 U	20.0 U	0.510 U	10.0 U	0.510 U	10.0 U	0.510 U	9.50 U	0.510 U	9.90 U	0.510 U	9.80 U
Aroclor 1254	1.80 U	9.90 U	2.30 U	13.0 U	1.80 U	9.40 U	1.80 U	9.90 U	3.50 U	20.0 U	1.80 U	10.0 U	1.80 U	10.0 U	1.80 U	9.50 U	1.80 U	9.90 U	1.80 U	9.80 U
Aroclor 1260	1.90 U	9.90 U	2.40 U	13.0 U	1.90 U	9.40 U	1.90 U	9.90 U	3.70 U	20.0 U	1.90 U	10.0 U	1.90 U	10.0 U	1.90 U	9.50 U	1.90 U	9.90 U	1.90 U	9.80 U
Aroclor 1262	2.50 U	9.90 U	3.20 U	13.0 U	2.50 U	9.40 U	2.50 U	9.90 U	4.80 U	20.0 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	9.50 U	2.50 U	9.90 U	2.50 U	9.80 U
Aroclor 1268	2.00 U	9.90 U	2.50 U	13.0 U	2.00 U	9.40 U	2.00 U	9.90 U	3.90 U	20.0 U	2.00 U	10.0 U	2.00 U	10.0 U	2.00 U	9.50 U	2.00 U	9.90 U	2.00 U	9.80 U
Total PCBs as Aroclors [1]	2.60 U	20.00 U	3.30 U	25.0 U	2.60 U	19.00 U	2.60 U	20.00 U	5.00 U	39.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	19.00 U	2.60 U	20.00 U	2.60 U	20.00 U

Notes:
[1] The crayfish Total PCBs as Aroclors is shown as the maximum MDL/MRL because all aroclors were undected in Reference Area crayfish samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-15
Reference Area Sediment and Tissue PCB Aroclor Analysis Results
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Media	Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Crayfish		Sculpin	
Site ID	P76-CF		P78-CF		P79-CF		P82-CF		P90-CF		P91-CF		P92-CF		P94-CF		P98-CF		SR-01	
Sample ID	08030376CF		08030378CF		08030379CF		08030382CF		08031290CF		08031291CF		08031292CF		08031294CF		08031298CF		R-1	
Sample Date	3/3/2008		3/3/2008		3/3/2008		3/3/2008		3/12/2008		3/12/2008		3/12/2008		3/12/2008		3/12/2008		7/23/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	2.40 U	10.0 U	2.40 U	10.0 U	2.40 U	9.80 U	2.40 U	10.0 U	2.40 U	9.40 U	4.80 U	20.0 U	2.40 U	9.90 U	2.40 U	9.90 U	2.40 U	10.0 U	2.40 U	9.70 U
Aroclor 1221	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	19.0 U	5.20 U	40.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U
Aroclor 1232	2.30 U	10.0 U	2.30 U	10.0 U	2.30 U	9.80 U	2.30 U	10.0 U	2.30 U	9.40 U	4.60 U	20.0 U	2.30 U	9.90 U	2.30 U	9.90 U	2.30 U	10.0 U	2.30 U	9.70 U
Aroclor 1242	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	9.80 U	2.20 U	10.0 U	2.20 U	9.40 U	4.40 U	20.0 U	2.20 U	9.90 U	2.20 U	9.90 U	2.20 U	10.0 U	2.20 U	9.70 U
Aroclor 1248	0.510 U	10.0 U	0.510 U	10.0 U	0.510 U	9.80 U	0.510 U	10.0 U	0.510 U	9.40 U	1.10 U	20.0 U	0.510 U	9.90 U	0.510 U	9.90 U	0.510 U	10.0 U	45.0 U	45.0 U
Aroclor 1254	1.80 U	10.0 U	1.80 U	10.0 U	1.80 U	9.80 U	1.80 U	10.0 U	1.80 U	9.40 U	3.60 U	20.0 U	1.80 U	9.90 U	1.80 U	9.90 U	1.80 U	10.0 U	1.80 U	9.70 U
Aroclor 1260	1.90 U	10.0 U	1.90 U	10.0 U	1.90 U	9.80 U	1.90 U	10.0 U	1.90 U	9.40 U	3.80 U	20.0 U	1.90 U	9.90 U	1.90 U	9.90 U	1.90 U	10.0 U	1.90 U	9.70 U
Aroclor 1262	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	9.80 U	2.50 U	10.0 U	2.50 U	9.40 U	5.00 U	20.0 U	2.50 U	9.90 U	2.50 U	9.90 U	2.50 U	10.0 U	2.50 U	9.70 U
Aroclor 1268	2.00 U	10.0 U	2.00 U	10.0 U	2.00 U	9.80 U	2.00 U	10.0 U	2.00 U	9.40 U	4.00 U	20.0 U	2.00 U	9.90 U	2.00 U	9.90 U	2.00 U	10.0 U	2.00 U	9.70 U
Total PCBs as Aroclors [1]	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.00 U	2.60 U	20.0 U	2.60 U	19.00 U	5.20 U	40.0 U	2.60 U	20.00 U	2.60 U	20.00 U	2.60 U	20.0 U	45.0 U	45.00 U

Notes:
[1] The crayfish and sculpin Total PCBs as Aroclors are shown as the maximum MDL/MRL because all aroclors were undected in Reference Area crayfish and sculpin samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-15
Reference Area Sediment and Tissue PCB Aroclor Analysis Results
(Page 3 of 10)

Media	Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Sculpin	
Site ID	SR-02		SR-03		SR-04		SR-05		SR-06		SR-07		SR-08		SR-09		SR-10		SR-11	
Sample ID	R-2		R-3		R-4		R-5		R-6		R-7		R-8		R-9		R-10		R-11	
Sample Date	7/24/2008		3/14/2008		10/9/2008		7/24/2008		2/26/2008		3/10/2008		10/9/2008		7/24/2008		7/23/2008		3/3/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	2.40 U	9.80 U	2.40 U	10.0 U	2.40 U	10.0 U	2.40 U	9.50 U	2.40 U	9.40 U	2.40 U	9.60 U	2.40 U	9.90 U	2.40 U	9.60 U	2.40 U	9.80 U	2.40 U	9.50 U
Aroclor 1221	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	19.0 U	2.60 U	19.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	19.0 U
Aroclor 1232	2.30 U	9.80 U	2.30 U	10.0 U	2.30 U	10.0 U	2.30 U	9.50 U	2.30 U	9.40 U	2.30 U	9.60 U	2.30 U	9.90 U	2.30 U	9.60 U	2.30 U	9.80 U	2.30 U	9.50 U
Aroclor 1242	2.20 U	9.80 U	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	9.50 U	2.20 U	9.40 U	2.20 U	9.60 U	2.20 U	9.90 U	2.20 U	9.60 U	2.20 U	9.80 U	2.20 U	9.50 U
Aroclor 1248	0.510 U	9.80 U	0.510 U	10.0 U	0.510 U	10.0 U	0.510 U	9.50 U	0.510 U	9.40 U	0.510 U	9.60 U	0.510 U	9.90 U	0.510 U	9.60 U	0.510 U	9.80 U	0.510 U	9.50 U
Aroclor 1254	17.0 U	17.0 U	19.0 U	19.0 U	21.0 U	21.0 U	23.0 U	23.0 U	22.0 U	22.0 U	17.0 U	17.0 U	39.0 U	39.0 U	19.0 U	19.0 U	28.0 U	28.0 U	24.0 U	24.0 U
Aroclor 1260	1.90 U	9.80 U	1.90 U	10.0 U	1.90 U	10.0 U	1.90 U	9.50 U	1.90 U	9.40 U	1.90 U	9.60 U	1.90 U	9.90 U	1.90 U	9.60 U	1.90 U	9.80 U	1.90 U	9.50 U
Aroclor 1262	2.50 U	9.80 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	9.50 U	2.50 U	9.40 U	2.50 U	9.60 U	2.50 U	9.90 U	2.50 U	9.60 U	2.50 U	9.80 U	2.50 U	9.50 U
Aroclor 1268	2.00 U	9.80 U	2.00 U	10.0 U	2.00 U	10.0 U	2.00 U	9.50 U	2.00 U	9.40 U	2.00 U	9.60 U	2.00 U	9.90 U	2.00 U	9.60 U	2.00 U	9.80 U	2.00 U	9.50 U
Total PCBs as Aroclors [1]	17.0 U	20.0 U	19.0 U	20.0 U	21.0 U	21.0 U	23.0 U	23.0 U	22.0 U	22.0 U	17.0 U	20.0 U	39.0 U	39.0 U	19.0 U	20.0 U	28.0 U	28.0 U	24.0 U	24.0 U

Notes:
[1] The sculpin Total PCBs as Aroclors is shown as the maximum MDL/MRL because all aroclors were undected in Reference Area sculpin samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-15
Reference Area Sediment and Tissue PCB Aroclor Analysis Results
(Page 4 of 10)

Media	Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Sculpin		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass	
Site ID	SR-12		SR-13		SR-14		SR-15		SR-16		SR-17		SR-18		20		21		22	
Sample ID	R-12		R-13		R-14		R-15		R-16		R-17		R-18		071027R01SB		071027R02SB		071027R03SB	
Sample Date	10/9/2008		7/23/2008		10/10/2008		10/9/2008		10/10/2008		10/9/2008		7/24/2008		10/27/2007		10/27/2007		10/27/2007	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	2.40 U	9.20 U	2.40 U	9.20 U	2.40 U	9.40 U	2.40 U	9.60 U	2.40 U	9.50 U	2.40 U	9.70 U	2.40 U	9.80 U	3.50 U	10.0 U	4.70 U	10.0 U	3.40 U	9.90 U
Aroclor 1221	2.60 U	19.0 U	2.60 U	19.0 U	2.60 U	19.0 U	2.60 U	20.0 U	2.60 U	19.0 U	2.60 U	20.0 U	2.60 U	20.0 U	4.70 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U
Aroclor 1232	2.30 U	9.20 U	2.30 U	9.20 U	2.30 U	9.40 U	2.30 U	9.60 U	2.30 U	9.50 U	2.30 U	9.70 U	2.30 U	9.80 U	6.10 U	10.0 U	5.90 U	10.0 U	3.90 U	9.90 U
Aroclor 1242	2.20 U	9.20 U	2.20 U	9.20 U	2.20 U	9.40 U	2.20 U	9.60 U	2.20 U	9.50 U	2.20 U	9.70 U	2.20 U	9.80 U	4.50 UJ	10.0 UJ	6.30 UJ	10.0 UJ	2.20 UJ	9.90 UJ
Aroclor 1248	0.510 U	9.20 U	0.510 U	9.20 U	0.510 U	9.40 U	0.510 U	9.60 U	0.510 U	9.50 U	0.510 U	9.70 U	0.510 U	9.80 U	0.510 U	10.0 U	0.510 U	10.0 U	0.510 U	9.90 U
Aroclor 1254	13.0 U	13.0 U	36.0 U	36.0 U	20.0 U	20.0 U	35.0 U	35.0 U	38.0 U	38.0 U	30.0 U	30.0 U	44.0 U	44.0 U	**59.0 J**	**59.0 J**	**32.0 J**	**32.0 J**	**51.0 J**	**51.0 J**
Aroclor 1260	1.90 U	9.20 U	1.90 U	9.20 U	1.90 U	9.40 U	1.90 U	9.60 U	1.90 U	9.50 U	1.90 U	9.70 U	1.90 U	9.80 U	1.90 U	10.0 U	1.90 U	10.0 U	1.90 U	9.90 U
Aroclor 1262	2.50 U	9.20 U	2.50 U	9.20 U	2.50 U	9.40 U	2.50 U	9.60 U	2.50 U	9.50 U	2.50 U	9.70 U	2.50 U	9.80 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	9.90 U
Aroclor 1268	2.00 U	9.20 U	2.00 U	9.20 U	2.00 U	9.40 U	2.00 U	9.60 U	2.00 U	9.50 U	2.00 U	9.70 U	2.00 U	9.80 U	2.00 U	10.0 U	2.00 U	10.0 U	2.00 U	9.90 U
Total PCBs as Aroclors [1]	13.0 U	19.0 U	36.0 U	36.0 U	20.0 U	20.0 U	35.0 U	35.0 U	38.0 U	38.0 U	30.0 U	30.0 U	44.0 U	44.0 U	**63.5 J**	**69.0 J**	**38.3 J**	**42.0 J**	**53.2 J**	**60.9 J**

Notes:
[1] The sculpin Total PCBs as Aroclors is shown as the maximum MDL/MRL because all aroclors were undected in Reference Area sculpin samples.
Only Aroclor 1242 and 1254 were included in summing bass Total PCBs as Aroclors because all other aroclors were undected in Reference Area smallmouth bass samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-15
Reference Area Sediment and Tissue PCB Aroclor Analysis Results
(Page 5 of 10)

Media	Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass	
Site ID	23		24		25		26		27		28		29		30		31	
Sample ID	071027R04SB		071027R05SB		071027R06SB		071115R07SB		080517R10SB		080517R11SB		080517R12SB		080517R13SB		080517R14SB	
Sample Date	10/27/2007		10/27/2007		10/27/2007		11/15/2007		5/17/2008		5/17/2008		5/17/2008		5/17/2008		5/17/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	2.40 U	10.0 U	9.90 U	9.90 U	2.40 U	10.0 U	3.80 U	10.0 U	2.40 U	10.0 U	7.90 U	10.0 U	4.80 U	10.0 U	2.40 U	10.0 U	6.00 U	9.90 U
Aroclor 1221	2.60 U	20.0 U	20.0 U	20.0 U	2.60 U	20.0 U	3.80 U	20.0 U	2.60 U	20.0 U	18.0 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	20.0 U	20.0 U
Aroclor 1232	2.30 U	10.0 U	9.90 U	9.90 U	2.30 U	10.0 U	3.10 U	10.0 U	2.30 U	10.0 U	10.0 U	10.0 U	5.10 U	10.0 U	2.30 U	10.0 U	9.90 U	9.90 U
Aroclor 1242	2.20 UJ	10.0 UJ	**14.0 J**	**14.0 J**	**9.50 J**	**9.50 J**	2.20 UJ	10.0 UJ	**5.60 J**	**5.60 J**	10.0 UJ	10.0 UJ	2.20 UJ	10.0 UJ	**2.40 J**	**2.40 J**	2.20 UJ	9.90 UJ
Aroclor 1248	0.510 U	10.0 U	0.510 U	9.90 U	0.510 U	10.0 U	0.510 U	10.0 U	0.510 U	10.0 U	0.510 U	10.0 U	0.510 U	10.0 U	0.510 U	10.0 U	6.90 U	9.90 U
Aroclor 1254	9.60 UJ	10.0 UJ	**110 J**	**110 J**	**58.0 J**	**58.0 J**	**27.0 J**	**27.0 J**	**34.0 J**	**34.0 J**	**37.0 J**	**37.0 J**	**29.0 J**	**29.0 J**	**80.0 J**	**80.0 J**	17.0 UJ	17.0 UJ
Aroclor 1260	14.0 U	14.0 U	1.90 U	9.90 U	1.90 U	10.0 U	1.90 U	10.0 U	1.90 U	10.0 U	1.90 U	10.0 U	1.90 U	10.0 U	1.90 U	10.0 U	46.0 U	46.0 U
Aroclor 1262	2.50 U	10.0 U	2.50 U	9.90 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	10.0 U	21.0 U	21.0 U
Aroclor 1268	2.00 U	10.0 U	2.00 U	9.90 U	2.00 U	10.0 U	2.00 U	10.0 U	2.00 U	10.0 U	2.00 U	10.0 U	2.00 U	10.0 U	2.00 U	10.0 U	3.40 U	9.90 U
Total PCBs as Aroclors [1]	11.8 UJ	20.0 UJ	**124 J**	**124 J**	**67.5 J**	**67.5 J**	**29.2 J**	**37.0 J**	**39.6 J**	**39.6 J**	**47.0 J**	**47.0 J**	**31.2 J**	**39.0 J**	**82.4 J**	**82.4 J**	19.2 UJ	26.9 UJ

Notes:
[1] Only Aroclor 1242 and 1254 were included in summing bass Total PCBs as Aroclors because all other aroclors were undected in Reference Area smallmouth bass samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-15
Reference Area Sediment and Tissue PCB Aroclor Analysis Results
(Page 6 of 10)

Media	Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass		Smallmouth Bass	
Site ID	32		33		34		35		36		37		38	
Sample ID	080521R15SB		080521R16SB		080521R17SB		080521R18SB		080521R19SB		080521R20SB		080521R21SB	
Sample Date	5/21/2008		5/21/2008		5/21/2008		5/21/2008		5/21/2008		5/21/2008		5/21/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	3.10 U	10.0 U	5.90 U	10.0 U	5.20 U	10.0 U	4.50 U	10.0 U	5.40 U	10.0 U	7.30 U	10.0 U	4.50 U	9.90 U
Aroclor 1221	2.60 U	20.0 U	6.90 U	20.0 U	5.90 U	20.0 U	7.40 U	20.0 U	20.0 U	20.0 U	12.0 U	20.0 U	3.70 U	20.0 U
Aroclor 1232	10.0 U	10.0 U	5.70 U	10.0 U	3.90 U	10.0 U	4.40 U	10.0 U	5.40 U	10.0 U	10.0 U	10.0 U	11.0 U	11.0 U
Aroclor 1242	2.20 UJ	10.0 UJ	2.20 UJ	10.0 UJ	2.90 UJ	10.0 UJ	10.0 UJ	10.0 UJ	2.20 UJ	10.0 UJ	10.0 UJ	10.0 UJ	3.80 UJ	9.90 UJ
Aroclor 1248	0.510 U	10.0 U	33.0 U	33.0 U	0.510 U	10.0 U	0.510 U	10.0 U	0.510 U	10.0 U	0.510 U	10.0 U	0.510 U	9.90 U
Aroclor 1254	**47.0 J**	**47.0 J**	130 UJ	130 UJ	**47.0 J**	**47.0 J**	**46.0 J**	**46.0 J**	**85.0 J**	**85.0 J**	**37.0 J**	**37.0 J**	**58.0 J**	**58.0 J**
Aroclor 1260	1.90 U	10.0 U	140 U	140 U	1.90 U	10.0 U	1.90 U	10.0 U	1.90 U	10.0 U	1.90 U	10.0 U	1.90 U	9.90 U
Aroclor 1262	2.50 U	10.0 U	110 U	110 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	9.90 U
Aroclor 1268	2.00 U	10.0 U	10.0 U	10.0 U	2.00 U	10.0 U	2.00 U	10.0 U	2.00 U	10.0 U	2.00 U	10.0 U	2.00 U	9.90 U
Total PCBs as Aroclors [1]	**49.2 J**	**57.0 J**	132 UJ	140 UJ	**49.9 J**	**57.0 J**	**56.0 J**	**56.0 J**	**87.2 J**	**95.0 J**	**47.0 J**	**47.0 J**	**58.0 J**	**58.0 J**

Notes:
[1] Only Aroclor 1242 and 1254 were included in summing bass Total PCBs as Aroclors because all other aroclors were undected in Reference Area smallmouth bass samples.
Only Aroclor 1254 was included in summing sucker Total PCBs as Aroclors because all other aroclors were undected in Reference Area large scale sucker samples.
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
Tissues are in micrograms per kilogram (µg/kg), wet weight

Table H-16
Forebay - Pre-Removal Sediment and Tissue PCB Aroclor Analysis Results
(Page 1 of 1)

Media	Sediment		Sediment		Sediment		Sediment		Sediment		Clam		Clam		Clam		Clam	
Site ID	A1		A2*		A3		A4		A5		A1*		A2		A3		A5	
Sample ID	070926A1 SD		070926A2 SD		070927A3 SD		070925A4 SD		070925A5 SD		070926A1TC		070926A2TC		070927A3TC		070925A5TC	
Sample Date	9/26/2007		9/26/2007		9/27/2007		9/25/2007		9/25/2007		9/26/2007		9/26/2007		9/27/2007		9/25/2007	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	2.60 U	7.60 U	2.80 U	8.00 U	5.80 U	17.0 U	3.00 U	8.50 U	2.80 U	8.10 U	2.40 U	10.0 U	2.40 U	9.90 U	2.40 U	9.80 U	4.70 U	20.0 U
Aroclor 1221	2.60 U	16.0 U	2.80 U	16.0 U	5.80 U	34.0 U	3.00 U	17.0 U	2.80 U	17.0 U	2.60 U	20.0 U	2.60 U	20.0 U	2.60 U	20.0 U	5.10 U	40.0 U
Aroclor 1232	2.60 U	7.60 U	2.80 U	8.00 U	5.80 U	17.0 U	3.00 U	8.50 U	2.80 U	8.10 U	2.30 U	10.0 U	2.30 U	9.90 U	2.30 U	9.80 U	4.50 U	20.0 U
Aroclor 1242	2.60 U	7.60 U	2.80 U	8.00 U	5.80 U	17.0 U	3.00 U	8.50 U	2.80 U	8.10 U	2.20 U	10.0 U	2.20 U	9.90 U	2.20 U	9.80 U	4.40 U	20.0 U
Aroclor 1248	2.60 U	7.60 U	2.80 U	8.00 U	5.80 U	17.0 U	3.00 U	8.50 U	2.80 U	8.10 U	0.510 U	10.0 U	0.510 U	9.90 U	0.510 U	9.80 U	1.00 U	20.0 U
Aroclor 1254	**130**	**130**	**44.0**	**44.0**	5.80 U	17.0 U	**100**	**100**	**13.0**	**13.0**	**355**	**355**	**250**	**250**	**180**	**180**	**120**	**120**
Aroclor 1260	2.60 U	7.60 U	2.80 U	8.00 U	5.80 U	17.0 U	3.00 U	8.50 U	2.80 U	8.10 U	1.90 U	10.0 U	1.90 U	9.90 U	1.90 U	9.80 U	3.80 U	20.0 U
Aroclor 1262	2.60 U	7.60 U	2.80 U	8.00 U	5.80 U	17.0 U	3.00 U	8.50 U	2.80 U	8.10 U	-	-	-	-	-	-	-	-
Aroclor 1268	2.60 U	7.60 U	2.80 U	8.00 U	5.80 U	17.0 U	3.00 U	8.50 U	2.80 U	8.10 U	2.00 U	10.0 U	2.00 U	9.90 U	2.00 U	9.80 U	4.00 U	20.0 U
Total PCBs as Aroclors [1]	**133 J**	**138 J**	**46.8 J**	**52.0 J**	11.6 U	34.0 U	**103 J**	**109 J**	**15.8 J**	**21.1 J**	**355**	**355**	**250**	**250**	**180**	**180**	**120**	**120**

Notes:

[1] Only Aroclor 1248 and 1254 were included in summing sediment Total PCBs as Aroclors because all other aroclors were undected in Forebay sediment samples.
Only Aroclor 1254 was included in summing clam Total PCBs as Aroclors because all other aroclors were undected in Forebay clam samples.

MDL = method detection limit

MRL = method reporting limit

bold = analyte detected above MDL.

- = Not Analyzed

U = The analyte was not detected at or above the MDL.

* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1

Sediment is in micrograms per kilogram (µg/kg), dry weight

Tissue is in micrograms per kilogram (µg/kg), wet weight

Table H-17
Downstream Sediment PCB Aroclor Analysis Results
(Page 1 of 1)

Site ID	P46		P47		P48		P49		P50		P51	
Sample ID	08031046SD		08031047SD		08031048SD		08031049SD		08031150SD		08031151SD	
Sample Date	3/10/2008		3/10/2008		3/10/2008		3/10/2008		3/11/2008		3/11/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
Aroclor 1016	1.70 U	7.00 U	1.70 U	7.00 U	1.70 U	7.10 U	1.70 U	7.30 U	1.70 U	8.80 U	1.70 U	7.30 U
Aroclor 1221	1.70 U	14.0 U	1.70 U	14.0 U	1.70 U	15.0 U	1.70 U	15.0 U	1.70 U	18.0 U	1.70 U	15.0 U
Aroclor 1232	1.70 U	7.00 U	1.70 U	7.00 U	1.70 U	7.10 U	1.70 U	7.30 U	1.70 U	8.80 U	1.70 U	7.30 U
Aroclor 1242	1.70 U	7.00 U	1.70 U	7.00 U	1.70 U	7.10 U	1.70 U	7.30 U	1.70 U	8.80 U	1.70 U	7.30 U
Aroclor 1248	1.70 U	7.00 U	1.70 U	7.00 U	1.70 U	7.10 U	1.70 U	7.30 U	1.70 U	8.80 U	1.70 U	7.30 U
Aroclor 1254	1.70 U	7.00 U	1.70 U	7.00 U	1.70 U	7.10 U	1.70 U	7.30 U	1.70 U	8.80 U	1.70 U	7.30 U
Aroclor 1260	1.70 U	7.00 U	1.70 U	7.00 U	1.70 U	7.10 U	1.70 U	7.30 U	1.70 U	8.80 U	1.70 U	7.30 U
Aroclor 1262	1.70 U	7.00 U	1.70 U	7.00 U	1.70 U	7.10 U	1.70 U	7.30 U	1.70 U	8.80 U	1.70 U	7.30 U
Aroclor 1268	1.70 U	7.00 U	1.70 U	7.00 U	1.70 U	7.10 U	1.70 U	7.30 U	1.70 U	8.80 U	1.70 U	7.30 U
Total PCBs as Aroclors [1]	1.70 U	14.0 U	1.70 U	14.0 U	1.70 U	15.0 U	1.70 U	15.0 U	1.70 U	18.0 U	1.70 U	15.0 U

Notes:

[1] Total PCBs as Aroclors is shown as the maximum MDL/MRL because all aroclors were undected in Downstream sediment samples.

MDL = method detection limit

MRL = method reporting limit

bold = analyte detected above MDL.

- = Not Analyzed

J = The reported value is an estimate.

U = The analyte was not detected at or above the MDL.

* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1

All units are in micrograms per kilogram (µg/kg), dry weight

Table H-18
Forebay - Random Sediment PAH Analysis Results
(Page 1 of 2)

Site ID	P04		P05		P06		P07		P08		P09		P10		P11		P13		P14	
Sample ID	08022604SD		08031905SD		08031806SD		08021507SD		08021508SD		08021409SD		08021410SD		08021411SD		08031713SD		08031814SD	
Sample Date	2/26/2008		3/19/2008		3/18/2008		2/15/2008		2/15/2008		2/14/2008		2/14/2008		2/14/2008		3/17/2008		3/18/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs																				
Acenaphthene	1.00 U	10.0 U	1.00 U	10.0 U	1.00 U	9.80 U	1.00 U	9.90 U	1.00 U	9.80 U	1.00 U	9.90 U	1.00 U	9.90 U	1.00 U	10.0 U	1.00 U	9.80 U	1.00 U	9.90 U
Anthracene	1.40 U	10.0 U	1.40 U	10.0 U	1.40 U	9.80 U	1.40 U	9.90 U	1.40 U	9.80 U	1.40 U	9.90 U	1.40 U	9.90 U	**2.00 J**	**2.00 J**	**2.70 J**	**2.70 J**	1.40 U	9.90 U
Fluorene	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.80 U	1.70 U	9.90 U	1.70 U	9.80 U	1.70 U	9.90 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	9.80 U	1.70 U	9.90 U
Phenanthrene	**3.30 J**	**3.30 J**	**1.40 J**	**1.40 J**	1.30 U	9.80 U	**3.40 J**	**3.40 J**	1.30 U	9.80 U	**1.80 J**	**1.80 J**	**1.90 J**	**1.90 J**	**7.10 J**	**7.10 J**	**5.40 J**	**5.40 J**	**2.10 J**	**2.10 J**
Total LPAHs (full MDL/MRL)	**7.40 J**	**33.3 J**	**5.50 J**	**31.4 J**	5.40 U	39.2 U	**7.50 J**	**33.1 J**	5.40 U	39.2 U	**5.90 J**	**31.5 J**	**6.00 J**	**31.6 J**	**11.8 J**	**29.1 J**	**10.8 J**	**27.7 J**	**6.20 J**	**31.8 J**
Total LPAHs (KM)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Total LPAHs (KM, capped)	**7.40 J**	**33.3 J**	**5.50 J**	**31.4 J**	5.40 U	39.2 U	**7.50 J**	**33.1 J**	5.40 U	39.2 U	**5.90 J**	**31.5 J**	**6.00 J**	**31.6 J**	**11.8 J**	**29.1 J**	**10.8 J**	**27.7 J**	**6.20 J**	**31.8 J**
HPAHs																				
Benzo(a)anthracene	**3.90 J**	**3.90 J**	**1.60 J**	**1.60 J**	1.40 U	9.80 U	1.40 U	9.90 U	1.40 U	9.80 U	**2.70 J**	**2.70 J**	**2.30 J**	**2.30 J**	**7.40 J**	**7.40 J**	**12.0**	**12.0**	**2.20 J**	**2.20 J**
Benzo(a)pyrene	**4.40 J**	**4.40 J**	**1.70 J**	**1.70 J**	1.60 U	9.80 U	1.60 U	9.90 U	1.60 U	9.80 U	**4.50 J**	**4.50 J**	**3.00 J**	**3.00 J**	**7.50 J**	**7.50 J**	**6.10 J**	**6.10 J**	**2.00 J**	**2.00 J**
Benzo(b)fluoranthene	**6.10 J**	**6.10 J**	2.50 U	10.0 U	2.50 U	9.80 U	2.50 U	9.90 U	2.50 U	9.80 U	**5.80 J**	**5.80 J**	**4.10 J**	**4.10 J**	**9.10 J**	**9.10 J**	**6.00 J**	**6.00 J**	2.50 U	9.90 U
Benzo(g,h,i)perylene	**3.90 J**	**3.90 J**	2.30 U	10.0 U	2.30 U	9.80 U	2.30 U	9.90 U	2.30 U	9.80 U	**3.30 J**	**3.30 J**	**2.90 J**	**2.90 J**	**4.40 J**	**4.40 J**	**3.50 J**	**3.50 J**	2.30 U	9.90 U
Benzo(k)fluoranthene	**2.50 J**	**2.50 J**	2.50 U	10.0 U	2.50 U	9.80 U	2.50 U	9.90 U	2.50 U	9.80 U	2.50 U	9.90 U	2.50 U	9.90 U	**3.30 J**	**3.30 J**	**4.90 J**	**4.90 J**	2.50 U	9.90 U
Chrysene	**7.80 J**	**7.80 J**	**1.80 J**	**1.80 J**	**1.50 J**	**1.50 J**	**1.40 J**	**1.40 J**	1.40 U	9.80 U	**4.20 J**	**4.20 J**	**4.10 J**	**4.10 J**	**9.30 J**	**9.30 J**	**20.0**	**20.0**	**2.40 J**	**2.40 J**
Dibenz(a,h)anthracene	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	9.80 U	2.20 U	9.90 U	2.20 U	9.80 U	2.20 U	9.90 U	2.20 U	9.90 U	2.20 U	10.0 U	2.20 U	9.80 U	2.20 U	9.90 U
Fluoranthene	**5.50 J**	**5.50 J**	**3.00 J**	**3.00 J**	2.20 U	9.80 U	**2.50 J**	**2.50 J**	2.20 U	9.80 U	**3.70 J**	**3.70 J**	**3.80 J**	**3.80 J**	**10.0**	**10.0**	**5.30 J**	**5.30 J**	**3.20 J**	**3.20 J**
Indeno(1,2,3-cd)pyrene	**3.30 J**	**3.30 J**	1.90 U	10.0 U	1.90 U	9.80 U	1.90 U	9.90 U	1.90 U	9.80 U	**3.20 J**	**3.20 J**	**2.20 J**	**2.20 J**	**4.70 J**	**4.70 J**	**3.60 J**	**3.60 J**	1.90 U	9.90 U
Pyrene	**5.60 J**	**5.60 J**	**2.40 J**	**2.40 J**	**1.80 J**	**1.80 J**	**2.00 J**	**2.00 J**	1.30 U	9.80 U	**3.50 J**	**3.50 J**	**3.70 J**	**3.70 J**	**12.0**	**12.0**	**8.90 J**	**8.90 J**	**3.20 J**	**3.20 J**
Total HPAHs (full MDL/MRL)	**45.2 J**	**53.0 J**	**21.9 J**	**60.5 J**	**19.9 J**	**81.7 J**	**20.3 J**	**75.2 J**	19.3 U	98.0 U	**35.6 J**	**50.7 J**	**30.8 J**	**45.9 J**	**69.9 J**	**77.7 J**	**72.5 J**	**80.1 J**	**24.4 J**	**62.5 J**
Total HPAHs (KM)	**45.2 J**	**47.8 J**	**19.2 J**	**21.0 J**	**15.4 J**	**16.5 J**	**16.2 J**	**19.7 J**	NC	NC	**35.3 J**	**38.6 J**	**30.5 J**	**32.6 J**	**69.9 J**	**74.2 J**	**72.5 J**	**75.8 J**	**23.0 J**	**26.0 J**
Total HPAHs (KM, capped)	**45.2 J**	**47.8 J**	**19.2 J**	**21.0 J**	**15.4 J**	**16.5 J**	**16.2 J**	**19.7 J**	19.3 U	98.0 U	**35.3 J**	**38.6 J**	**30.5 J**	**32.6 J**	**69.9 J**	**74.2 J**	**72.5 J**	**75.8 J**	**23.0 J**	**26.0 J**
Total PAHs (full MDL/MRL)	**52.6 J**	**86.3 J**	**27.4 J**	**91.9 J**	**25.3 J**	**121 J**	**27.8 J**	**108 J**	24.7 U	137 U	**41.5 J**	**82.2 J**	**36.8 J**	**77.5 J**	**81.7 J**	**107 J**	**83.3 J**	**108 J**	**30.6 J**	**94.3 J**
Total PAHs (KM)	**50.3 J**	**64.8 J**	**22.3 J**	**27.8 J**	**16.6 J**	**23.1 J**	**20.5 J**	**32.6 J**	NC	NC	**38.1 J**	**50.9 J**	**33.7 J**	**43.6 J**	**80.1 J**	**95.1 J**	**81.4 J**	**93.9 J**	**25.0 J**	**35.2 J**
Total PAHs (KM, capped)	**50.3 J**	**64.8 J**	**22.3 J**	**27.8 J**	**16.6 J**	**23.1 J**	**20.5 J**	**32.6 J**	24.7 U	137 U	**38.1 J**	**50.9 J**	**33.7 J**	**43.6 J**	**80.1 J**	**95.1 J**	**81.4 J**	**93.9 J**	**25.0 J**	**35.2 J**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH

J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
All units are in micrograms per kilogram (µg/kg), dry weight
NC = Not calculated
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-18
Forebay - Random Sediment PAH Analysis Results
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Site ID	P15		P16		P17		P18		P21		P65		P67		P88		P89	
Sample ID	08022115SD		08022116SD		08022117SD		08021118SD		08021221SD		08022965SD		08030367SD		08031788SD		08031789SD	
Sample Date	2/21/2008		2/21/2008		2/21/2008		2/11/2008		2/12/2008		2/29/2008		3/3/2008		3/17/2008		3/17/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs																		
Acenaphthene	1.00 U	10.0 U	1.00 U	9.90 U	1.00 U	10.0 U	1.00 U	10.00 U	1.00 U	10.0 U	1.00 U	9.90 U	1.00 U	9.90 U	1.00 U	9.80 U	1.00 U	9.80 U
Anthracene	1.40 U	10.0 U	**1.90 J**	**1.90 J**	**1.90 J**	**1.90 J**	1.40 U	10.0 U	1.40 U	10.0 U	**1.50 J**	**1.50 J**	1.40 U	9.90 U	1.40 U	9.80 U	1.40 U	9.80 U
Fluorene	1.70 U	10.0 U	1.70 U	9.90 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	10.0 U	1.70 U	9.90 U	1.70 U	9.90 U	1.70 U	9.80 U	1.70 U	9.80 U
Phenanthrene	**4.60 J**	**4.60 J**	**5.00 J**	**5.00 J**	**7.40 J**	**7.40 J**	**2.90 J**	**2.90 J**	1.30 U	10.0 U	**2.20 J**	**2.20 J**	1.30 U	9.90 U	**1.70 J**	**1.70 J**	1.30 U	9.80 U
Total LPAHs (full MDL/MRL)	**8.70 J**	**34.6 J**	**9.60 J**	**26.7 J**	**12.0 J**	**29.3 J**	**7.00 J**	**32.9 J**	5.40 U	40.0 U	**6.40 J**	**23.5 J**	5.40 U	39.6 U	**5.80 J**	**31.1 J**	5.40 U	39.2 U
Total LPAHs (KM)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Total LPAHs (KM, capped)	**8.70 J**	**34.6 J**	**9.60 J**	**26.7 J**	**12.0 J**	**29.3 J**	**7.00 J**	**32.9 J**	5.40 U	40.0 U	**6.40 J**	**23.5 J**	5.40 U	39.6 U	**5.80 J**	**31.1 J**	5.40 U	39.2 U
HPAHs																		
Benzo(a)anthracene	**2.10 J**	**2.10 J**	**5.90 J**	**5.90 J**	**6.00 J**	**6.00 J**	**2.00 J**	**2.00 J**	1.40 U	10.0 U	**7.00 J**	**7.00 J**	1.40 U	9.90 U	1.40 U	9.80 U	1.40 U	9.80 U
Benzo(a)pyrene	1.60 U	10.0 U	**6.50 J**	**6.50 J**	**7.20 J**	**7.20 J**	**2.60 J**	**2.60 J**	1.60 U	10.0 U	**6.10 J**	**6.10 J**	1.60 U	9.90 U	1.60 U	9.80 U	1.60 U	9.80 U
Benzo(b)fluoranthene	2.50 U	10.0 U	**8.00 J**	**8.00 J**	**7.50 J**	**7.50 J**	**4.00 J**	**4.00 J**	2.50 U	10.0 U	**5.60 J**	**5.60 J**	2.50 U	9.90 U	2.50 U	9.80 U	2.50 U	9.80 U
Benzo(g,h,i)perylene	2.30 U	10.0 U	**5.00 J**	**5.00 J**	**6.20 J**	**6.20 J**	**2.60 J**	**2.60 J**	2.30 U	10.0 U	**4.20 J**	**4.20 J**	2.30 U	9.90 U	2.30 U	9.80 U	2.30 U	9.80 U
Benzo(k)fluoranthene	2.50 U	10.0 U	**3.10 J**	**3.10 J**	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	10.0 U	**3.20 J**	**3.20 J**	2.50 U	9.90 U	2.50 U	9.80 U	2.50 U	9.80 U
Chrysene	**3.40 J**	**3.40 J**	**7.60 J**	**7.60 J**	**7.90 J**	**7.90 J**	**3.20 J**	**3.20 J**	**1.80 J**	**1.80 J**	**12.0**	**12.0**	1.40 U	9.90 U	**1.70 J**	**1.70 J**	1.40 U	9.80 U
Dibenz(a,h)anthracene	2.20 U	10.0 U	2.20 U	9.90 U	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	9.90 U	2.20 U	9.90 U	2.20 U	9.80 U	2.20 U	9.80 U
Fluoranthene	**4.00 J**	**4.00 J**	**9.70 J**	**9.70 J**	**12.0**	**12.0**	**4.80 J**	**4.80 J**	**2.70 J**	**2.70 J**	**4.60 J**	**4.60 J**	2.20 U	9.90 U	**2.60 J**	**2.60 J**	2.20 U	9.80 U
Indeno(1,2,3-cd)pyrene	1.90 U	10.0 U	**5.40 J**	**5.40 J**	**5.70 J**	**5.70 J**	**2.50 J**	**2.50 J**	1.90 U	10.0 U	**4.10 J**	**4.10 J**	1.90 U	9.90 U	1.90 U	9.80 U	1.90 U	9.80 U
Pyrene	**5.30 J**	**5.30 J**	**11.0**	**11.0**	**17.0**	**17.0**	**4.80 J**	**4.80 J**	**2.20 J**	**2.20 J**	**4.40 J**	**4.40 J**	1.30 U	9.90 U	**2.20 J**	**2.20 J**	1.30 U	9.80 U
Total HPAHs (full MDL/MRL)	**27.8 J**	**74.8 J**	**64.4 J**	**72.1 J**	**74.2 J**	**89.5 J**	**31.2 J**	**46.5 J**	**21.1 J**	**76.7 J**	**53.4 J**	**61.1 J**	19.3 U	99.0 U	**20.9 J**	**75.1 J**	19.3 U	98.0 U
Total HPAHs (KM)	**25.1 J**	**37.0 J**	**64.4 J**	**68.6 J**	**73.9 J**	**83.0 J**	**30.5 J**	**33.1 J**	**17.5 J**	**22.3 J**	**53.4 J**	**56.1 J**	NC	NC	**17.2 J**	**21.7 J**	NC	NC
Total HPAHs (KM, capped)	**25.1 J**	**37.0 J**	**64.4 J**	**68.6 J**	**73.9 J**	**83.0 J**	**30.5 J**	**33.1 J**	**17.5 J**	**22.3 J**	**53.4 J**	**56.1 J**	19.3 U	99.0 U	**17.2 J**	**21.7 J**	19.3 U	98.0 U
Total PAHs (full MDL/MRL)	**36.5 J**	**109 J**	**74.0 J**	**98.8 J**	**86.2 J**	**119 J**	**38.2 J**	**79.4 J**	**26.5 J**	**117 J**	**59.8 J**	**84.6 J**	24.7 U	139 U	**26.7 J**	**106 J**	24.7 U	137 U
Total PAHs (KM)	**29.1 J**	**54.3 J**	**72.4 J**	**86.5 J**	**83.4 J**	**104 J**	**34.9 J**	**45.7 J**	**18.6 J**	**31.3 J**	**58.4 J**	**67.8 J**	NC	NC	**19.5 J**	**28.7 J**	NC	NC
Total PAHs (KM, capped)	**29.1 J**	**54.3 J**	**72.4 J**	**86.5 J**	**83.4 J**	**104 J**	**34.9 J**	**45.7 J**	**18.6 J**	**31.3 J**	**58.4 J**	**67.8 J**	24.7 U	139 U	**19.5 J**	**28.7 J**	24.7 U	137 U

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH

J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
All units are in micrograms per kilogram (µg/kg), dry weight
NC = Not calculated
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-19
Forebay - Targeted Sediment PAH Analysis Results
(Page 1 of 1)

Site	Forebay - Eagle Creek		Forebay - Eagle Creek		Forebay - Goose Island		Forebay - Goose Island	
Site ID	P43		P44		P110		P111	
Sample ID	08032043SD		08032044SD		090427110SD		090429111SD	
Sample Date	3/20/2008		3/20/2008		4/27/2009		4/29/2009	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs								
Acenaphthene	1.00 U	9.90 U	1.00 U	9.90 U	1.20 U	12.0 U	1.30 U	13.0 U
Anthracene	1.40 U	9.90 U	**2.60 J**	**2.60 J**	1.70 U	12.0 U	1.80 U	13.0 U
Fluorene	1.70 U	9.90 U	1.70 U	9.90 U	2.10 U	12.0 U	2.20 U	13.0 U
Phenanthrene	**2.30 J**	**2.30 J**	**6.50 J**	**6.50 J**	**3.80 J**	**3.80 J**	**4.60 J**	**4.60 J**
Total LPAHs (full MDL/MRL)	**6.40 J**	**32.0 J**	**11.8 J**	**28.9 J**	**8.80 J**	**39.8 J**	**9.90 J**	**43.6 J**
Total LPAHs (KM)	NC	NC	NC	NC	NC	NC	NC	NC
Total LPAHs (KM, capped)	**6.40 J**	**32.0 J**	**11.8 J**	**28.9 J**	**8.80 J**	**39.8 J**	**9.90 J**	**43.6 J**
HPAHs								
Benzo(a)anthracene	1.40 U	9.90 U	**6.60 J**	**6.60 J**	**4.20 J**	**4.20 J**	**7.80 J**	**7.80 J**
Benzo(a)pyrene	1.60 U	9.90 U	**7.10 J**	**7.10 J**	**8.70 J**	**8.70 J**	**13.0 J**	**13.0 J**
Benzo(b)fluoranthene	2.50 U	9.90 U	**11.0**	**11.0**	**6.50 J**	**6.50 J**	**15.0**	**15.0**
Benzo(g,h,i)perylene	2.30 U	9.90 U	**5.00 J**	**5.00 J**	**5.60 J**	**5.60 J**	**9.90 J**	**9.90 J**
Benzo(k)fluoranthene	2.50 U	9.90 U	**3.40 J**	**3.40 J**	3.00 U	12.0 U	**4.10 J**	**4.10 J**
Chrysene	**1.80 J**	**1.80 J**	**13.0**	**13.0**	**5.80 J**	**5.80 J**	**11.0 J**	**11.0 J**
Dibenz(a,h)anthracene	2.20 U	9.90 U	2.20 U	9.90 U	2.70 U	12.0 U	2.80 U	13.0 U
Fluoranthene	2.20 U	9.90 U	**11.0**	**11.0**	**7.30 J**	**7.30 J**	**9.60 J**	**9.60 J**
Indeno(1,2,3-cd)pyrene	1.90 U	9.90 U	**4.60 J**	**4.60 J**	**5.00 J**	**5.00 J**	**7.10 J**	**7.10 J**
Pyrene	**3.40 J**	**3.40 J**	**17.0**	**17.0**	**7.20 J**	**7.20 J**	**8.80 J**	**8.80 J**
Total HPAHs (full MDL/MRL)	**21.8 J**	**84.4 J**	**80.9 J**	**88.6 J**	**56.0 J**	**74.3 J**	**89.1 J**	**99.3 J**
Total HPAHs (KM)	**17.2 J**	**26.0 J**	**80.9 J**	**84.0 J**	**55.7 J**	**62.9 J**	**89.1 J**	**94.6 J**
Total HPAHs (KM, capped)	**17.2 J**	**26.0 J**	**80.9 J**	**84.0 J**	**55.7 J**	**62.9 J**	**89.1 J**	**94.6 J**
Total PAHs (full MDL/MRL)	**28.2 J**	**116 J**	**92.7 J**	**118 J**	**64.8 J**	**114 J**	**99.0 J**	**143 J**
Total PAHs (KM)	**19.5 J**	**35.0 J**	**90.8 J**	**103 J**	**60.1 J**	**84.2 J**	**96.1 J**	**122 J**
Total PAHs (KM, capped)	**19.5 J**	**35.0 J**	**90.8 J**	**103 J**	**60.1 J**	**84.2 J**	**96.1 J**	**122 J**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
PAH = Polycyclic Aromatic Hydrodarbons

LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
All units are in micrograms per kilogram (µg/kg), dry weight
NC = Not calculated
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-20
Reference Area Sediment PAH Analysis Results
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Site ID	P22		P24		P26		P27		P28		P29		P34		P35		P36	
Sample ID	08030522SD		08030524SD		08030426SD		08030427SD		08030428SD		08022229SD		08022534SD		08022535SD		08022536SD	
Sample Date	3/5/2008		3/5/2008		3/4/2008		3/4/2008		3/4/2008		2/22/2008		2/25/2008		2/25/2008		2/25/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs																		
Acenaphthene	1.00 U	10.0 U	1.00 U	10.0 U	1.00 U	9.90 U	1.00 U	9.50 U	1.10 U	11.0 U	1.00 U	10.0 U	1.00 U	10.0 U	1.00 U	10.0 U	1.00 U	9.90 U
Anthracene	1.40 U	10.0 U	1.40 U	10.0 U	1.40 U	9.90 U	1.40 U	9.50 U	1.50 U	11.0 U	1.40 U	10.0 U	1.40 U	10.0 U	**2.30 J**	**2.30 J**	1.40 U	9.90 U
Fluorene	1.70 UJ	10.0 UJ	1.70 UJ	10.0 UJ	1.70 UJ	9.90 UJ	1.70 UJ	9.50 UJ	1.80 UJ	11.0 UJ	1.70 UJ	10.0 UJ	1.70 UJ	10.0 UJ	1.70 UJ	10.0 UJ	1.70 UJ	9.90 UJ
Phenanthrene	**2.30 J**	**2.30 J**	**2.20 J**	**2.20 J**	**3.60 J**	**3.60 J**	**3.30 J**	**3.30 J**	**2.10 J**	**2.10 J**	**3.70 J**	**3.70 J**	**3.00 J**	**3.00 J**	**2.30 J**	**2.30 J**	**3.20 J**	**3.20 J**
Total LPAHs (full MDL/MRL)	**6.40 J**	**32.3 J**	**6.30 J**	**32.2 J**	**7.70 J**	**33.3 J**	**7.40 J**	**31.8 J**	**6.50 J**	**35.1 J**	**7.80 J**	**33.7 J**	**7.10 J**	**33.0 J**	**7.30 J**	**24.6 J**	**7.30 J**	**32.9 J**
Total LPAHs (KM)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Total LPAHs (KM, capped)	**6.40 J**	**32.3 J**	**6.30 J**	**32.2 J**	**7.70 J**	**33.3 J**	**7.40 J**	**31.8 J**	**6.50 J**	**35.1 J**	**7.80 J**	**33.7 J**	**7.10 J**	**33.0 J**	**7.30 J**	**24.6 J**	**7.30 J**	**32.9 J**
HPAHs																		
Benzo(a)anthracene	**1.80 J**	**1.80 J**	**1.60 J**	**1.60 J**	**2.30 J**	**2.30 J**	**3.60 J**	**3.60 J**	**3.60 J**	**3.60 J**	**3.30 J**	**3.30 J**	**2.90 J**	**2.90 J**	**2.20 J**	**2.20 J**	**3.30 J**	**3.30 J**
Benzo(a)pyrene	**1.60 J**	**1.60 J**	1.60 U	10.0 U	**3.20 J**	**3.20 J**	1.60 U	9.50 U	**4.80 J**	**4.80 J**	**3.80 J**	**3.80 J**	1.60 U	10.0 U	1.60 U	10.0 U	**6.20 J**	**6.20 J**
Benzo(b)fluoranthene	2.50 U	10.0 U	2.50 U	10.0 U	**4.40 J**	**4.40 J**	**4.80 J**	**4.80 J**	**5.80 J**	**5.80 J**	**5.00 J**	**5.00 J**	**5.50 J**	**5.50 J**	**3.70 J**	**3.70 J**	**8.30 J**	**8.30 J**
Benzo(g,h,i)perylene	2.30 U	10.0 U	2.30 U	10.0 U	**4.70 J**	**4.70 J**	**3.20 J**	**3.20 J**	**3.60 J**	**3.60 J**	**3.50 J**	**3.50 J**	**3.60 J**	**3.60 J**	**2.70 J**	**2.70 J**	**7.90 J**	**7.90 J**
Benzo(k)fluoranthene	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	9.90 U	2.50 U	9.50 U	2.60 U	11.0 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	9.90 U
Chrysene	**9.70 J**	**9.70 J**	**2.10 J**	**2.10 J**	**3.70 J**	**3.70 J**	**3.50 J**	**3.50 J**	**4.90 J**	**4.90 J**	**4.00 J**	**4.00 J**	**4.40 J**	**4.40 J**	**3.10 J**	**3.10 J**	**4.80 J**	**4.80 J**
Dibenz(a,h)anthracene	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	9.90 U	2.20 U	9.50 U	2.30 U	11.0 U	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	9.90 U
Fluoranthene	**3.60 J**	**3.60 J**	**2.60 J**	**2.60 J**	**6.40 J**	**6.40 J**	**6.20 J**	**6.20 J**	**6.10 J**	**6.10 J**	2.20 UJ	10.0 UJ	**5.10 J**	**5.10 J**	**5.60 J**	**5.60 J**	**5.50 J**	**5.50 J**
Indeno(1,2,3-cd)pyrene	1.90 UJ	10.0 UJ	1.90 UJ	10.0 UJ	**3.30 J**	**3.30 J**	**2.70 J**	**2.70 J**	**3.20 J**	**3.20 J**	1.90 UJ	10.0 UJ	1.90 UJ	10.0 UJ	**2.20 J**	**2.20 J**	**8.80 J**	**8.80 J**
Pyrene	**2.60 J**	**2.60 J**	**1.70 J**	**1.70 J**	**7.00 J**	**7.00 J**	**4.50 J**	**4.50 J**	**4.90 J**	**4.90 J**	**4.90 J**	**4.90 J**	**4.80 J**	**4.80 J**	**3.30 J**	**3.30 J**	**7.10 J**	**7.10 J**
Total HPAHs (full MDL/MRL)	**30.7 J**	**69.3 J**	**21.0 J**	**68.0 J**	**39.7 J**	**54.8 J**	**34.8 J**	**57.0 J**	**41.8 J**	**58.9 J**	**33.3 J**	**64.5 J**	**34.5 J**	**66.3 J**	**29.1 J**	**52.8 J**	**56.6 J**	**71.7 J**
Total HPAHs (KM)	**27.8 J**	**38.6 J**	**18.1 J**	**20.0 J**	**39.5 J**	**43.8 J**	**33.3 J**	**40.7 J**	**41.5 J**	**46.1 J**	**32.1 J**	**40.8 J**	**32.7 J**	**43.8 J**	**27.9 J**	**32.6 J**	**56.3 J**	**64.9 J**
Total HPAHs (KM, capped)	**27.8 J**	**38.6 J**	**18.1 J**	**20.0 J**	**39.5 J**	**43.8 J**	**33.3 J**	**40.7 J**	**41.5 J**	**46.1 J**	**32.1 J**	**40.8 J**	**32.7 J**	**43.8 J**	**27.9 J**	**32.6 J**	**56.3 J**	**64.9 J**
Total PAHs (full MDL/MRL)	**37.1 J**	**102 J**	**27.3 J**	**100 J**	**47.4 J**	**88.1 J**	**42.2 J**	**88.8 J**	**48.3 J**	**94.0 J**	**41.1 J**	**98.2 J**	**41.6 J**	**99.3 J**	**36.4 J**	**77.4 J**	**63.9 J**	**105 J**
Total PAHs (KM)	**31.6 J**	**50.4 J**	**21.2 J**	**28.6 J**	**43.9 J**	**60.0 J**	**37.8 J**	**55.7 J**	**45.0 J**	**60.7 J**	**35.2 J**	**56.4 J**	**36.3 J**	**58.6 J**	**33.0 J**	**42.6 J**	**60.1 J**	**85.7 J**
Total PAHs (KM, capped)	**31.6 J**	**50.4 J**	**21.2 J**	**28.6 J**	**43.9 J**	**60.0 J**	**37.8 J**	**55.7 J**	**45.0 J**	**60.7 J**	**35.2 J**	**56.4 J**	**36.3 J**	**58.6 J**	**33.0 J**	**42.6 J**	**60.1 J**	**85.7 J**

Notes:
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH

J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
All units are in micrograms per kilogram (µg/kg), dry weight
NC = Not calculated
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-20
Reference Area Sediment PAH Analysis Results
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Site ID	P37		P38		P39		P40		P41		P42		P85		P86		P87	
Sample ID	08022637SD		08022738SD		08022739SD		08022740SD		08022741SD		08022742SD		08030685SD		08030686SD		08030687SD	
Sample Date	2/26/2008		2/27/2008		2/27/2008		2/27/2008		2/27/2008		2/27/2008		3/6/2008		3/6/2008		3/6/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs																		
Acenaphthene	1.00 U	10.0 U	1.00 U	10.0 U	1.00 U	10.0 U	1.00 U	9.80 U	1.00 U	9.80 U	1.00 U	9.90 U	1.00 U	10.0 U	1.00 U	9.90 U	1.00 UJ	10.0 UJ
Anthracene	1.40 U	10.0 U	1.40 U	10.0 U	1.40 U	10.0 U	1.40 U	9.80 U	**1.40 J**	**1.40 J**	1.40 U	9.90 U	1.40 U	10.0 U	1.40 U	9.90 U	1.40 UJ	10.0 UJ
Fluorene	1.70 UJ	10.0 UJ	1.70 UJ	10.0 UJ	1.70 UJ	10.0 UJ	1.70 UJ	9.80 UJ	1.70 UJ	9.80 UJ	1.70 UJ	9.90 UJ	1.70 UJ	10.0 UJ	1.70 UJ	9.90 UJ	1.70 UJ	10.0 UJ
Phenanthrene	**4.40 J**	**4.40 J**	**2.60 J**	**2.60 J**	1.30 U	10.0 U	**1.30 J**	**1.30 J**	**5.90 J**	**5.90 J**	1.30 U	9.90 U	**1.90 J**	**1.90 J**	**2.00 J**	**2.00 J**	**3.60 J**	**3.60 J**
Total LPAHs (full MDL/MRL)	**8.50 J**	**34.4 J**	**6.70 J**	**32.6 J**	5.40 U	40.0 U	**5.40 J**	**30.7 J**	**10.0 J**	**26.9 J**	5.40 U	39.6 U	**6.00 J**	**31.9 J**	**6.10 J**	**31.7 J**	**7.70 J**	**33.6 J**
Total LPAHs (KM)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Total LPAHs (KM, capped)	**8.50 J**	**34.4 J**	**6.70 J**	**32.6 J**	5.40 UJ	40.0 UJ	**5.40 J**	**30.7 J**	**10.0 J**	**26.9 J**	5.40 UJ	39.6 UJ	**6.00 J**	**31.9 J**	**6.10 J**	**31.7 J**	**7.70 J**	**33.6 J**
HPAHs																		
Benzo(a)anthracene	**3.90 J**	**3.90 J**	**2.50 J**	**2.50 J**	1.40 U	10.0 U	1.40 U	9.80 U	**10.0**	**10.0**	1.40 U	9.90 U	1.40 U	10.0 U	**1.80 J**	**1.80 J**	**3.00 J**	**3.00 J**
Benzo(a)pyrene	**4.60 J**	**4.60 J**	1.60 U	10.0 U	1.60 U	10.0 U	1.60 U	9.80 U	**11.0**	**11.0**	1.60 U	9.90 U	**2.80 J**	**2.80 J**	1.60 U	9.90 U	**2.60 J**	**2.60 J**
Benzo(b)fluoranthene	**6.90 J**	**6.90 J**	**4.20 J**	**4.20 J**	2.50 U	10.0 U	2.50 U	9.80 U	**17.0**	**17.0**	2.50 U	9.90 U	**3.60 J**	**3.60 J**	**2.70 J**	**2.70 J**	**3.50 J**	**3.50 J**
Benzo(g,h,i)perylene	**4.60 J**	**4.60 J**	2.30 U	10.0 U	2.30 U	10.0 U	2.30 U	9.80 U	**7.30 J**	**7.30 J**	2.30 U	9.90 U	2.30 U	10.0 U	2.30 U	9.90 U	**2.30 J**	**2.30 J**
Benzo(k)fluoranthene	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	10.0 U	2.50 U	9.80 U	**5.00 J**	**5.00 J**	2.50 U	9.90 U	2.50 U	10.0 U	2.50 U	9.90 U	2.50 UJ	10.0 UJ
Chrysene	**4.80 J**	**4.80 J**	**3.20 J**	**3.20 J**	1.40 U	10.0 U	**1.90 J**	**1.90 J**	**9.80**	**9.80**	1.40 U	9.90 U	1.40 U	10.0 U	**2.40 J**	**2.40 J**	**3.10 J**	**3.10 J**
Dibenz(a,h)anthracene	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	10.0 U	2.20 U	9.80 U	2.20 U	9.80 U	2.20 U	9.90 U	2.20 U	10.0 U	2.20 U	9.90 U	2.20 UJ	10.0 UJ
Fluoranthene	**9.70 J**	**9.70 J**	**4.10 J**	**4.10 J**	**2.30 J**	**2.30 J**	**2.30 J**	**2.30 J**	**31.0 J**	**31.0 J**	2.20 UJ	9.90 UJ	2.20 UJ	10.0 UJ	**3.60 J**	**3.60 J**	**5.00 J**	**5.00 J**
Indeno(1,2,3-cd)pyrene	**4.90 J**	**4.90 J**	**2.30 J**	**2.30 J**	1.90 UJ	10.0 UJ	1.90 UJ	9.80 UJ	**8.40 J**	**8.40 J**	1.90 UJ	9.90 UJ	1.90 UJ	10.0 UJ	1.90 UJ	9.90 UJ	**2.00 J**	**2.00 J**
Pyrene	**7.80 J**	**7.80 J**	**3.60 J**	**3.60 J**	**2.10 J**	**2.10 J**	**1.80 J**	**1.80 J**	**23.0 J**	**23.0 J**	**1.50 J**	**1.50 J**	**2.70 J**	**2.70 J**	**2.10 J**	**2.10 J**	**4.90 J**	**4.90 J**
Total HPAHs (full MDL/MRL)	**51.9 J**	**67.2 J**	**28.5 J**	**59.9 J**	**20.2 J**	**84.4 J**	**20.4 J**	**74.6 J**	**125 J**	**132 J**	**19.5 J**	**90.6 J**	**23.0 J**	**79.1 J**	**23.1 J**	**62.1 J**	**31.1 J**	**46.4 J**
Total HPAHs (KM)	**51.6 J**	**59.0 J**	**26.5 J**	**33.2 J**	**16.4 J**	**22.0 J**	**16.9 J**	**20.0 J**	**125 J**	**129 J**	NC	NC	**18.9 J**	**30.3 J**	**21.4 J**	**25.2 J**	**30.5 J**	**33.0 J**
Total HPAHs (KM, capped)	**51.6 J**	**59.0 J**	**26.5 J**	**33.2 J**	**16.4 J**	**22.0 J**	**16.9 J**	**20.0 J**	**125 J**	**129 J**	**19.5 J**	**90.6 J**	**18.9 J**	**30.3 J**	**21.4 J**	**25.2 J**	**30.5 J**	**33.0 J**
Total PAHs (full MDL/MRL)	**60.4 J**	**102 J**	**35.2 J**	**92.5 J**	**25.6 J**	**124 J**	**25.8 J**	**105 J**	**135 J**	**159 J**	**24.9 J**	**130 J**	**29.0 J**	**111 J**	**29.2 J**	**93.8 J**	**38.8 J**	**80.0 J**
Total PAHs (KM)	**56.6 J**	**80.3 J**	**29.7 J**	**45.0 J**	**17.1 J**	**30.8 J**	**19.6 J**	**25.6 J**	**133 J**	**147 J**	NC	NC	**21.5 J**	**38.5 J**	**24.0 J**	**34.1 J**	**35.7 J**	**46.7 J**
Total PAHs (KM, capped)	**56.6 J**	**80.3 J**	**29.7 J**	**45.0 J**	**17.1 J**	**30.8 J**	**19.6 J**	**25.6 J**	**133 J**	**147 J**	**24.9 J**	**130 J**	**21.5 J**	**38.5 J**	**24.0 J**	**34.1 J**	**35.7 J**	**46.7 J**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH

J = The reported value is an estimate.
UJ = The analyte was not detected. The reported MDL/MRL is an estimate.
U = The analyte was not detected at or above the MDL.
All units are in micrograms per kilogram (µg/kg), dry weight
NC = Not calculated
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table H-21
Forebay - Pre-Removal Sediment PAH Analysis Results
(Page 1 of 1)

Site ID	A1		A2*		A3		A4		A5	
Sample ID	070926A1 SD		070926A2 SD		070927A3 SD		070925A4 SD		070925A5 SD	
Sample Date	9/26/2007		9/26/2007		9/27/2007		9/25/2007		9/25/2007	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs										
Acenaphthene	1.40 U	7.70 U	1.40 U	7.80 U	2.40 U	17.0 U	1.40 U	8.60 U	1.40 U	8.10 U
Anthracene	**4.30 J**	**4.30 J**	14.0 U	78.0 U	2.30 U	17.0 U	1.40 U	8.40 U	1.40 U	10.00 U
Fluorene	1.10 U	7.70 U	1.10 U	7.80 U	1.90 U	17.0 U	1.10 U	8.60 U	1.10 U	8.10 U
Phenanthrene	**9.10**	**9.10**	**3.25 J**	**3.25 J**	**2.90 J**	**2.90 J**	**4.50 J**	**4.50 J**	**5.00 J**	**5.00 J**
Total LPAHs (full MDL/MRL)	**15.9 J**	**28.8 J**	**19.8 J**	**96.9 J**	**9.50 J**	**53.9 J**	**8.40 J**	**30.1 J**	**8.90 J**	**31.2 J**
Total LPAHs (KM)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Total LPAHs (KM, capped)	**15.9 J**	**28.8 J**	**19.8 J**	**96.9 J**	**9.50 J**	**53.9 J**	**8.40 J**	**30.1 J**	**8.90 J**	**31.2 J**
HPAHs										
Benzo(a)anthracene	**5.70 J**	**5.70 J**	**3.05 J**	**3.05 J**	**3.70 J**	**3.70 J**	**3.30 J**	**3.30 J**	**3.50 J**	**3.50 J**
Benzo(a)pyrene	**32.0**	**32.0**	16.0 U	78.0 U	2.60 U	17.0 U	**6.10 J**	**6.10 J**	**7.40 J**	**7.40 J**
Benzo(b)fluoranthene	**11.0**	**11.0**	**7.05 J**	**7.05 J**	**4.20 J**	**4.20 J**	**6.40 J**	**6.40 J**	**7.40 J**	**7.40 J**
Benzo(g,h,i)perylene	**5.40 J**	**5.40 J**	**3.70 J**	**3.70 J**	**5.20 J**	**5.20 J**	**4.40 J**	**4.40 J**	**4.70 J**	**4.70 J**
Benzo(k)fluoranthene	**3.20 J**	**3.20 J**	**3.40 J**	**3.40 J**	**3.30 J**	**3.30 J**	**2.30 J**	**2.30 J**	**2.50 J**	**2.50 J**
Chrysene	**7.90**	**7.90**	**5.35 J**	**5.35 J**	**4.10 J**	**4.10 J**	**4.70 J**	**4.70 J**	**5.20 J**	**5.20 J**
Dibenz(a,h)anthracene	1.50 U	7.70 U	**2.50 J**	**2.50 J**	**3.10 J**	**3.10 J**	1.50 U	8.60 U	1.50 U	8.10 U
Fluoranthene	**13.0**	**13.0**	**7.10 J**	**7.10 J**	**4.40 J**	**4.40 J**	**7.10 J**	**7.10 J**	**8.30**	**8.30**
Indeno(1,2,3-cd)pyrene	**6.30 J**	**6.30 J**	**4.60 J**	**4.60 J**	**13.0 J**	**13.0 J**	**4.00 J**	**4.00 J**	**3.90 J**	**3.90 J**
Pyrene	**13.0**	**13.0**	**6.85 J**	**6.85 J**	**4.50 J**	**4.50 J**	**6.60 J**	**6.60 J**	**7.80 J**	**7.80 J**
Total HPAHs (full MDL/MRL)	**99.0 J**	**105 J**	**59.6 J**	**121.6 J**	**48.1 J**	**62.5 J**	**46.4 J**	**53.5 J**	**52.2 J**	**58.8 J**
Total HPAHs (KM)	**99.0 J**	**103 J**	**48.4 J**	**48.4 J**	**48.1 J**	**50.6 J**	**46.4 J**	**49.9 J**	**52.2 J**	**56.0 J**
Total HPAHs (KM, capped)	**99.0 J**	**103 J**	**48.4 J**	**48.4 J**	**48.1 J**	**50.6 J**	**46.4 J**	**49.9 J**	**52.2 J**	**56.0 J**
Total PAHs (full MDL/MRL)	**115 J**	**134 J**	**79.4 J**	**218.5 J**	**57.6 J**	**116.4 J**	**54.8 J**	**83.6 J**	**61.1 J**	**90.0 J**
Total PAHs (KM)	**114 J**	**126 J**	**57.2 J**	**65.6 J**	**56.0 J**	**67.8 J**	**53.8 J**	**69.2 J**	**60.1 J**	**77.0 J**
Total PAHs (KM, capped)	**114 J**	**126 J**	**57.2 J**	**65.6 J**	**56.0 J**	**67.8 J**	**53.8 J**	**69.2 J**	**60.1 J**	**77.0 J**

Notes:
MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
All units are in micrograms per kilogram (µg/kg), dry weight

PAH = Polycyclic Aromatic Hydrodarbons
LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
NC = Not calculated
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped

* = The data displayed are the result of averaging primary and field duplicate results at this sampling location as described in Section 5.1

Table H-22
Downstream Sediment PAH Analysis Results
(Page 1 of 1)

Site ID	P46		P47		P48		P49		P50		P51	
Sample ID	08031046SD		08031047SD		08031048SD		08031049SD		08031150SD		08031151SD	
Sample Date	3/10/2008		3/10/2008		3/10/2008		3/10/2008		3/11/2008		3/11/2008	
Censoring Level for Undetected Results	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL	MDL	MRL
LPAHs												
Acenaphthene	1.00 U	10.0 U	1.00 U	9.70 U	1.00 U	9.70 U	1.00 U	9.90 U	1.00 U	9.90 U	1.00 U	9.80 U
Anthracene	**2.70 J**	**2.70 J**	1.40 U	9.70 U	1.40 U	9.70 U	1.40 U	9.90 U	**3.10 J**	**3.10 J**	**1.60 J**	**1.60 J**
Fluorene	1.70 U	10.0 U	1.70 U	9.70 U	1.70 U	9.70 U	1.70 U	9.90 U	1.70 U	9.90 U	1.70 U	9.80 U
Phenanthrene	**4.80 J**	**4.80 J**	1.30 U	9.70 U	1.30 U	9.70 U	**2.20 J**	**2.20 J**	**4.90 J**	**4.90 J**	**4.00 J**	**4.00 J**
Total LPAHs (full MDL/MRL)	**10.2 J**	**27.5 J**	5.40 U	38.8 U	5.40 U	38.8 U	**6.30 J**	**31.9 J**	**10.7 J**	**27.8 J**	**8.30 J**	**25.2 J**
Total LPAHs (KM)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Total LPAHs (KM, capped)	**10.2 J**	**27.5 J**	5.40 U	38.8 U	5.40 U	38.8 U	**6.30 J**	**31.9 J**	**10.7 J**	**27.8 J**	**8.30 J**	**25.2 J**
HPAHs												
Benzo(a)anthracene	**9.60 J**	**9.60 J**	**1.70 J**	**1.70 J**	**1.80 J**	**1.80 J**	**3.30 J**	**3.30 J**	**12.0**	**12.0**	**3.70 J**	**3.70 J**
Benzo(a)pyrene	**11.0**	**11.0**	**1.90 J**	**1.90 J**	1.60 U	9.70 U	**4.30 J**	**4.30 J**	**14.0**	**14.0**	**4.50 J**	**4.50 J**
Benzo(b)fluoranthene	**9.70 J**	**9.70 J**	2.50 U	9.70 U	2.50 U	9.70 U	**4.50 J**	**4.50 J**	**16.0**	**16.0**	**3.30 J**	**3.30 J**
Benzo(g,h,i)perylene	**5.80 J**	**5.80 J**	2.30 U	9.70 U	2.30 U	9.70 U	**2.80 J**	**2.80 J**	**6.80 J**	**6.80 J**	2.30 U	9.80 U
Benzo(k)fluoranthene	**4.20 J**	**4.20 J**	2.50 U	9.70 U	2.50 U	9.70 U	2.50 U	9.90 U	**6.50 J**	**6.50 J**	2.50 U	9.80 U
Chrysene	**9.60 J**	**9.60 J**	**1.60 J**	**1.60 J**	1.40 U	9.70 U	**3.50 J**	**3.50 J**	**18.0**	**18.0**	**3.40 J**	**3.40 J**
Dibenz(a,h)anthracene	2.20 U	10.0 U	2.20 U	9.70 U	2.20 U	9.70 U	2.20 U	9.90 U	**2.30 J**	**2.30 J**	2.20 U	9.80 U
Fluoranthene	**20.0**	**20.0**	**2.90 J**	**2.90 J**	2.20 U	9.70 U	**4.30 J**	**4.30 J**	**22.0**	**22.0**	**6.20 J**	**6.20 J**
Indeno(1,2,3-cd)pyrene	**6.30 J**	**6.30 J**	1.90 U	9.70 U	1.90 U	9.70 U	**2.80 J**	**2.80 J**	**8.20 J**	**8.20 J**	1.90 U	9.80 U
Pyrene	**20.0**	**20.0**	**2.60 J**	**2.60 J**	**1.80 J**	**1.80 J**	**4.60 J**	**4.60 J**	**21.0**	**21.0**	**6.40 J**	**6.40 J**
Total HPAHs (full MDL/MRL)	**98.4 J**	**106 J**	**22.1 J**	**59.2 J**	**20.2 J**	**81.2 J**	**34.8 J**	**49.9 J**	**127 J**	**127 J**	**36.4 J**	**66.7 J**
Total HPAHs (KM)	**98.4 J**	**104 J**	**19.2 J**	**21.4 J**	**16.0 J**	NC **J**	**34.5 J**	**37.6 J**	**127 J**	**127 J**	**35.1 J**	**45.8 J**
Total HPAHs (KM-capped)	**98.4 J**	**104 J**	**19.2 J**	**21.4 J**	**16.0 J**	**81.2 J**	**34.5 J**	**37.6 J**	**127 J**	**127 J**	**35.1 J**	**45.8 J**
Total PAHs (full MDL/MRL)	**109 J**	**134 J**	**27.5 J**	**98.0 J**	**25.6 J**	**120 J**	**41.1 J**	**81.8 J**	**138 J**	**155 J**	**44.7 J**	**91.9 J**
Total PAHs (KM)	**107 J**	**123 J**	**21.4 J**	**30.0 J**	**16.8 J**	NC	**37.5 J**	**50.2 J**	**137 J**	**145 J**	**40.6 J**	**57.9 J**
Total PAHs (KM, capped)	**107 J**	**123 J**	**21.4 J**	**30.0 J**	**16.8 J**	**120 J**	**37.5 J**	**50.2 J**	**137 J**	**145 J**	**40.6 J**	**57.9 J**

Notes:

MDL = method detection limit
MRL = method reporting limit
bold = analyte detected above MDL.
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
PAH = Polycyclic Aromatic Hydrodarbons

LPAH = Low Molecular Weight PAH
HPAH = High Molecular Weight PAH
All units are in micrograms per kilogram (µg/kg), dry weight
NC = Not calculated
KM = Kaplan–Meier-based with Efron's bias correction
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped

APPENDIX I
DATA SUMMARY AND STATISTICS

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	Metals	Total	Aluminum	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	7,560	19,100	10	100%	No	--
Soil	Metals	Total	Aluminum	0-3 ft	mg/kg	12	-	-	-	-	0	-	12	6,000	19,100	12	100%	No	--
Soil	Metals	Total	Aluminum	0-10 ft	mg/kg	26	-	-	-	-	0	-	26	2,380	23,100	26	100%	No	Yes
Soil	Metals	Total	Antimony	0-1 ft	mg/kg	20	0.200	2.90	0.200	2.90	16	1	3	0.309	4.20	4	20%	No	Yes
Soil	Metals	Total	Antimony	0-3 ft	mg/kg	22	0.200	2.90	0.200	3.04	16	2	4	0.309	4.20	6	27%	No	Yes
Soil	Metals	Total	Antimony	0-10 ft	mg/kg	36	0.200	2.90	0.200	3.04	16	4	16	0.309	8.19	20	56%	No	Yes
Soil	Metals	Total	Arsenic	0-1 ft	mg/kg	21	-	-	-	-	0	-	21	1.50	30.1	21	100%	No	Yes
Soil	Metals	Total	Arsenic	0-3 ft	mg/kg	23	-	-	-	-	0	-	23	1.50	30.1	23	100%	No	Yes
Soil	Metals	Total	Arsenic	0-10 ft	mg/kg	37	-	-	-	-	0	-	37	1.50	30.1	37	100%	No	Yes
Soil	Metals	Total	Barium	0-1 ft	mg/kg	21	-	-	-	-	0	-	21	58.9	242	21	100%	No	Yes
Soil	Metals	Total	Barium	0-3 ft	mg/kg	23	-	-	-	-	0	-	23	42.6	242	23	100%	No	Yes
Soil	Metals	Total	Barium	0-10 ft	mg/kg	37	-	-	-	-	0	-	37	34.0	242	37	100%	No	Yes
Soil	Metals	Total	Beryllium	0-1 ft	mg/kg	21	0.189	0.280	0.270	0.467	4	-	17	0.300	0.576	17	81%	No	Yes
Soil	Metals	Total	Beryllium	0-3 ft	mg/kg	23	0.157	0.280	0.270	0.467	6	-	17	0.300	0.576	17	74%	No	Yes
Soil	Metals	Total	Beryllium	0-10 ft	mg/kg	37	0.155	0.280	0.270	0.550	11	9	17	0.186	0.576	26	70%	No	Yes
Soil	Metals	Total	Cadmium	0-1 ft	mg/kg	21	0.260	0.290	0.260	0.290	6	-	15	0.343	2.09	15	71%	No	Yes
Soil	Metals	Total	Cadmium	0-3 ft	mg/kg	23	0.260	0.290	0.260	0.290	6	-	17	0.343	3.54	17	74%	No	Yes
Soil	Metals	Total	Cadmium	0-10 ft	mg/kg	37	0.260	0.290	0.260	0.290	6	-	31	0.343	3.54	31	84%	No	Yes
Soil	Metals	Total	Chromium	0-1 ft	mg/kg	21	-	-	-	-	0	-	21	14.7	801	21	100%	No	Yes
Soil	Metals	Total	Chromium	0-3 ft	mg/kg	23	-	-	-	-	0	-	23	14.7	1,950	23	100%	No	Yes
Soil	Metals	Total	Chromium	0-10 ft	mg/kg	37	-	-	-	-	0	-	37	11.0	2,300	37	100%	No	Yes
Soil	Metals	Total	Cobalt	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	6.40	22.7	10	100%	No	--
Soil	Metals	Total	Cobalt	0-3 ft	mg/kg	12	-	-	-	-	0	-	12	6.40	41.0	12	100%	No	--
Soil	Metals	Total	Cobalt	0-10 ft	mg/kg	26	-	-	-	-	0	-	26	3.99	42.3	26	100%	No	Yes
Soil	Metals	Total	Copper	0-1 ft	mg/kg	21	-	-	-	-	0	-	21	23.5	494	21	100%	No	Yes
Soil	Metals	Total	Copper	0-3 ft	mg/kg	23	-	-	-	-	0	-	23	23.5	494	23	100%	No	Yes
Soil	Metals	Total	Copper	0-10 ft	mg/kg	37	-	-	-	-	0	-	37	17.9	494	37	100%	No	Yes
Soil	Metals	Total	Lead	0-1 ft	mg/kg	21	-	-	-	-	0	-	21	5.34	741	21	100%	No	Yes
Soil	Metals	Total	Lead	0-3 ft	mg/kg	29	-	-	-	-	0	-	29	5.34	1,660	29	100%	No	Yes
Soil	Metals	Total	Lead	0-10 ft	mg/kg	43	-	-	-	-	0	-	43	5.34	1,660	43	100%	No	Yes
Soil	Metals	Total	Manganese	0-1 ft	mg/kg	21	-	-	-	-	0	-	21	196	720	21	100%	No	Yes
Soil	Metals	Total	Manganese	0-3 ft	mg/kg	23	-	-	-	-	0	-	23	196	1,710	23	100%	No	Yes
Soil	Metals	Total	Manganese	0-10 ft	mg/kg	37	-	-	-	-	0	-	37	146	1,710	37	100%	No	Yes
Soil	Metals	Total	Mercury	0-1 ft	mg/kg	23	0.100	0.110	0.100	0.110	5	-	18	0.0700	4.15	18	78%	No	Yes
Soil	Metals	Total	Mercury	0-3 ft	mg/kg	25	0.100	0.110	0.100	0.110	5	-	20	0.0475	4.15	20	80%	No	Yes
Soil	Metals	Total	Mercury	0-10 ft	mg/kg	39	0.100	0.110	0.0192	0.110	5	1	33	0.0150	4.15	34	87%	No	Yes
Soil	Metals	Total	Nickel	0-1 ft	mg/kg	21	-	-	-	-	0	-	21	13.4	570	21	100%	No	Yes
Soil	Metals	Total	Nickel	0-3 ft	mg/kg	23	-	-	-	-	0	-	23	13.4	1,610	23	100%	No	Yes
Soil	Metals	Total	Nickel	0-10 ft	mg/kg	37	-	-	-	-	0	-	37	7.85	1,760	37	100%	No	Yes
Soil	Metals	Total	Selenium	0-1 ft	mg/kg	21	0.200	1.50	0.200	1.50	18	1	2	0.205	0.848	3	14%	No	Yes
Soil	Metals	Total	Selenium	0-3 ft	mg/kg	23	0.200	1.50	0.200	2.02	18	3	2	0.205	0.879	5	22%	No	Yes
Soil	Metals	Total	Selenium	0-10 ft	mg/kg	37	0.0774	1.50	0.200	2.02	26	9	2	0.106	0.879	11	30%	No	Yes
Soil	Metals	Total	Silver	0-1 ft	mg/kg	21	0.200	0.570	0.200	0.570	14	-	7	0.200	1.50	7	33%	No	Yes
Soil	Metals	Total	Silver	0-3 ft	mg/kg	23	0.200	0.570	0.200	2.02	14	2	7	0.126	1.50	9	39%	No	Yes
Soil	Metals	Total	Silver	0-10 ft	mg/kg	37	0.200	0.570	0.200	2.02	14	12	11	0.101	1.52	23	62%	No	Yes
Soil	Metals	Total	Thallium	0-1 ft	mg/kg	21	0.200	0.300	0.117	0.300	19	1	1	0.0953	0.378	2	10%	No	Yes
Soil	Metals	Total	Thallium	0-3 ft	mg/kg	23	0.200	0.300	0.0970	0.506	19	3	1	0.0578	0.378	4	17%	No	Yes
Soil	Metals	Total	Thallium	0-10 ft	mg/kg	37	0.200	0.300	0.0970	0.951	19	10	8	0.0361	0.378	18	49%	No	Yes
Soil	Metals	Total	Vanadium	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	34.3	56.3	10	100%	No	--
Soil	Metals	Total	Vanadium	0-3 ft	mg/kg	12	-	-	-	-	0	-	12	34.3	56.3	12	100%	No	--
Soil	Metals	Total	Vanadium	0-10 ft	mg/kg	26	-	-	-	-	0	-	26	15.9	93.4	26	100%	No	Yes
Soil	Metals	Total	Zinc	0-1 ft	mg/kg	21	-	-	-	-	0	-	21	41.6	635	21	100%	No	Yes
Soil	Metals	Total	Zinc	0-3 ft	mg/kg	23	-	-	-	-	0	-	23	41.6	1,140	23	100%	No	Yes
Soil	Metals	Total	Zinc	0-10 ft	mg/kg	37	-	-	-	-	0	-	37	41.6	1,140	37	100%	No	Yes
Soil	Butyltins	Total	Dibutyltin	0-1 ft	ug/kg	7	0.730	0.899	2.27	2.79	5	-	2	20.0	20.2	2	29%	Yes	--

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(2 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	Butyltins	Total	Dibutyltin	0-3 ft	ug/kg	9	0.685	0.899	2.13	2.79	7	-	2	20.0	20.2	2	22%	No	--
Soil	Butyltins	Total	Dibutyltin	0-10 ft	ug/kg	22	0.567	7.62	1.76	23.7	20	-	2	20.0	20.2	2	9%	No	Yes
Soil	Butyltins	Total	Monobutyltin	0-1 ft	ug/kg	7	1.61	1.98	3.03	3.73	5	-	2	9.08	38.0	2	29%	Yes	--
Soil	Butyltins	Total	Monobutyltin	0-3 ft	ug/kg	9	1.51	1.98	2.84	3.73	7	-	2	9.08	38.0	2	22%	No	--
Soil	Butyltins	Total	Monobutyltin	0-10 ft	ug/kg	22	1.25	16.8	2.35	31.6	20	-	2	9.08	38.0	2	9%	No	Yes
Soil	Butyltins	Total	Tetrabutyltin	0-1 ft	ug/kg	7	0.564	0.694	1.51	1.86	7	-	-	-	-	0	0%	Yes	--
Soil	Butyltins	Total	Tetrabutyltin	0-3 ft	ug/kg	9	0.529	0.694	1.42	1.86	9	-	-	-	-	0	0%	No	--
Soil	Butyltins	Total	Tetrabutyltin	0-10 ft	ug/kg	22	0.438	5.89	1.18	15.8	22	-	-	-	-	0	0%	No	No
Soil	Butyltins	Total	Tributyltin	0-1 ft	ug/kg	7	1.20	1.43	3.13	3.73	4	-	3	5.12	165	3	43%	Yes	--
Soil	Butyltins	Total	Tributyltin	0-3 ft	ug/kg	9	1.18	1.43	3.07	3.73	5	-	4	5.12	165	4	44%	No	--
Soil	Butyltins	Total	Tributyltin	0-10 ft	ug/kg	22	0.903	12.1	2.35	31.6	18	-	4	5.12	165	4	18%	No	Yes
Soil	Herbicides	Total	2,4,5-T	0-1 ft	ug/kg	12	1.79	50.0	3.10	50.0	10	-	2	63.0	93.0	2	17%	No	--
Soil	Herbicides	Total	2,4,5-T	0-3 ft	ug/kg	14	1.54	50.0	3.10	50.0	12	-	2	63.0	93.0	2	14%	No	--
Soil	Herbicides	Total	2,4,5-T	0-10 ft	ug/kg	21	1.46	50.0	3.10	50.0	19	-	2	63.0	93.0	2	10%	No	Yes
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-1 ft	ug/kg	12	2.50	50.0	2.50	50.0	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-3 ft	ug/kg	14	2.25	50.0	2.50	50.0	14	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-10 ft	ug/kg	21	2.14	50.0	2.50	50.0	21	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	2,4-D	0-1 ft	ug/kg	12	0.675	50.0	8.18	50.0	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4-D	0-3 ft	ug/kg	14	0.581	50.0	7.04	50.0	14	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4-D	0-10 ft	ug/kg	21	0.520	50.0	6.70	50.0	21	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	2,4-DB	0-1 ft	ug/kg	12	1.15	50.0	5.00	50.0	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4-DB	0-3 ft	ug/kg	14	0.988	50.0	5.00	50.0	14	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4-DB	0-10 ft	ug/kg	21	0.939	50.0	5.00	50.0	21	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	4-Nitrophenol	0-1 ft	ug/kg	1	1.81	1.81	8.18	8.18	1	-	-	-	-	0	0%	Yes	--
Soil	Herbicides	Total	4-Nitrophenol	0-3 ft	ug/kg	3	1.56	1.81	7.04	8.18	3	-	-	-	-	0	0%	Yes	--
Soil	Herbicides	Total	4-Nitrophenol	0-10 ft	ug/kg	10	1.48	1.81	6.70	8.18	10	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dalapon	0-1 ft	ug/kg	12	2.50	50.0	8.18	50.0	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dalapon	0-3 ft	ug/kg	14	2.15	50.0	7.04	50.0	14	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dalapon	0-10 ft	ug/kg	21	2.04	50.0	6.70	50.0	21	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	Dicamba	0-1 ft	ug/kg	12	1.99	50.0	2.10	50.0	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dicamba	0-3 ft	ug/kg	14	1.71	50.0	2.10	50.0	14	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dicamba	0-10 ft	ug/kg	21	1.63	50.0	2.10	50.0	21	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	Dichloroprop	0-1 ft	ug/kg	12	0.871	400	8.18	400	10	-	2	170	180	2	17%	No	--
Soil	Herbicides	Total	Dichloroprop	0-3 ft	ug/kg	14	0.750	400	7.04	400	12	-	2	170	180	2	14%	No	--
Soil	Herbicides	Total	Dichloroprop	0-10 ft	ug/kg	21	0.713	400	6.70	400	19	-	2	170	180	2	10%	No	Yes
Soil	Herbicides	Total	Dinoseb	0-1 ft	ug/kg	12	0.675	50.0	8.18	50.0	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dinoseb	0-3 ft	ug/kg	14	0.581	50.0	7.04	50.0	14	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dinoseb	0-10 ft	ug/kg	21	0.552	50.0	6.70	50.0	21	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	MCPA	0-1 ft	ug/kg	12	1.23	25,000	8.18	25,000	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	MCPA	0-3 ft	ug/kg	14	1.06	25,000	7.04	25,000	14	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	MCPA	0-10 ft	ug/kg	21	1.01	25,000	6.70	25,000	21	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	MCPP	0-1 ft	ug/kg	12	2.24	38,000	8.18	38,000	10	-	2	9,500	14,000	2	17%	No	--
Soil	Herbicides	Total	MCPP	0-3 ft	ug/kg	14	1.93	38,000	7.04	38,000	12	-	2	9,500	14,000	2	14%	No	--
Soil	Herbicides	Total	MCPP	0-10 ft	ug/kg	21	1.83	38,000	6.70	38,000	19	-	2	9,500	14,000	2	10%	No	Yes
Soil	Herbicides	Total	Pentachlorophenol	0-1 ft	ug/kg	1	0.955	0.955	8.18	8.18	1	-	-	-	-	0	0%	Yes	--
Soil	Herbicides	Total	Pentachlorophenol	0-3 ft	ug/kg	3	0.822	0.955	7.04	8.18	3	-	-	-	-	0	0%	Yes	--
Soil	Herbicides	Total	Pentachlorophenol	0-10 ft	ug/kg	10	0.781	0.955	6.70	8.18	10	-	-	-	-	0	0%	No	--
Soil	Pesticides	Total	4,4'-DDD	0-1 ft	ug/kg	21	1.00	25.0	1.00	25.0	21	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	4,4'-DDD	0-3 ft	ug/kg	23	1.00	25.0	1.00	25.0	23	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	4,4'-DDD	0-10 ft	ug/kg	30	0.214	25.0	1.00	25.0	30	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	4,4'-DDE	0-1 ft	ug/kg	21	1.00	9.40	1.00	9.40	20	-	1	17.0	17.0	1	5%	No	No
Soil	Pesticides	Total	4,4'-DDE	0-3 ft	ug/kg	23	1.00	9.40	1.00	9.40	22	-	1	17.0	17.0	1	4%	No	No
Soil	Pesticides	Total	4,4'-DDE	0-10 ft	ug/kg	30	0.253	9.40	1.00	9.40	29	-	1	17.0	17.0	1	3%	No	No
Soil	Pesticides	Total	4,4'-DDT	0-1 ft	ug/kg	21	1.00	13.0	1.00	13.0	14	-	7	6.40	28.0	7	33%	No	Yes
Soil	Pesticides	Total	4,4'-DDT	0-3 ft	ug/kg	23	1.00	13.0	1.00	13.0	16	-	7	6.40	28.0	7	30%	No	Yes

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(3 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	Pesticides	Total	4,4'-DDT	0-10 ft	ug/kg	30	0.285	13.0	1.00	13.0	23	-	7	6.40	28.0	7	23%	No	Yes
Soil	Pesticides	Total	Aldrin	0-1 ft	ug/kg	21	0.970	1.90	0.970	1.90	21	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Aldrin	0-3 ft	ug/kg	23	0.970	1.90	0.970	1.90	23	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Aldrin	0-10 ft	ug/kg	30	0.474	1.90	0.970	1.90	30	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	BHC (alpha)	0-1 ft	ug/kg	21	0.500	1.90	0.500	1.90	21	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	BHC (alpha)	0-3 ft	ug/kg	23	0.500	1.90	0.500	1.90	22	-	1	2.02	2.02	1	4%	No	No
Soil	Pesticides	Total	BHC (alpha)	0-10 ft	ug/kg	30	0.341	1.90	0.500	1.90	29	-	1	2.02	2.02	1	3%	No	No
Soil	Pesticides	Total	BHC (beta)	0-1 ft	ug/kg	21	0.900	12.0	0.900	12.0	20	-	1	2.60	2.60	1	5%	No	No
Soil	Pesticides	Total	BHC (beta)	0-3 ft	ug/kg	23	0.900	12.0	0.900	12.0	22	-	1	2.60	2.60	1	4%	No	No
Soil	Pesticides	Total	BHC (beta)	0-10 ft	ug/kg	30	0.465	12.0	0.900	12.0	29	-	1	2.60	2.60	1	3%	No	No
Soil	Pesticides	Total	BHC (delta)	0-1 ft	ug/kg	21	0.600	1.90	0.600	1.90	21	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	BHC (delta)	0-3 ft	ug/kg	23	0.600	1.90	0.600	1.90	23	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	BHC (delta)	0-10 ft	ug/kg	30	0.422	1.90	0.600	1.90	30	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	ug/kg	21	0.970	1.90	0.970	1.90	21	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	BHC (gamma) Lindane	0-3 ft	ug/kg	23	0.970	1.90	0.970	1.90	23	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	BHC (gamma) Lindane	0-10 ft	ug/kg	30	0.420	1.90	0.970	1.90	30	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Chlordane (alpha)	0-1 ft	ug/kg	20	0.800	19.0	0.800	19.0	19	-	1	4.00	4.00	1	5%	No	No
Soil	Pesticides	Total	Chlordane (alpha)	0-3 ft	ug/kg	20	0.800	19.0	0.800	19.0	19	-	1	4.00	4.00	1	5%	No	No
Soil	Pesticides	Total	Chlordane (alpha)	0-10 ft	ug/kg	20	0.800	19.0	0.800	19.0	19	-	1	4.00	4.00	1	5%	No	No
Soil	Pesticides	Total	Chlordane (gamma)	0-1 ft	ug/kg	20	0.700	14.0	0.700	14.0	20	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Chlordane (gamma)	0-3 ft	ug/kg	20	0.700	14.0	0.700	14.0	20	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Chlordane (gamma)	0-10 ft	ug/kg	20	0.700	14.0	0.700	14.0	20	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Chlordane (technical)	0-1 ft	ug/kg	1	-	-	-	-	0	-	1	1,560	1,560	1	100%	Yes	--
Soil	Pesticides	Total	Chlordane (technical)	0-3 ft	ug/kg	3	-	-	-	-	0	-	3	65.6	1,560	3	100%	Yes	--
Soil	Pesticides	Total	Chlordane (technical)	0-10 ft	ug/kg	10	1.55	11.8	9.94	11.8	4	-	6	49.4	1,560	6	60%	No	--
Soil	Pesticides	Total	Dieldrin	0-1 ft	ug/kg	21	1.90	8.00	1.90	8.00	20	-	1	2.10	2.10	1	5%	No	No
Soil	Pesticides	Total	Dieldrin	0-3 ft	ug/kg	23	1.90	8.00	1.90	8.00	22	-	1	2.10	2.10	1	4%	No	No
Soil	Pesticides	Total	Dieldrin	0-10 ft	ug/kg	30	0.360	8.00	1.90	8.00	29	-	1	2.10	2.10	1	3%	No	No
Soil	Pesticides	Total	Endosulfan I	0-1 ft	ug/kg	21	0.970	3.50	0.970	3.50	21	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Endosulfan I	0-3 ft	ug/kg	23	0.970	3.50	0.970	3.50	23	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Endosulfan I	0-10 ft	ug/kg	30	0.468	3.50	0.970	3.50	30	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Endosulfan II	0-1 ft	ug/kg	21	1.90	4.90	1.90	4.90	20	-	1	8.84	8.84	1	5%	No	No
Soil	Pesticides	Total	Endosulfan II	0-3 ft	ug/kg	23	1.90	4.90	1.90	4.90	22	-	1	8.84	8.84	1	4%	No	No
Soil	Pesticides	Total	Endosulfan II	0-10 ft	ug/kg	30	0.425	4.90	1.90	4.90	29	-	1	8.84	8.84	1	3%	No	No
Soil	Pesticides	Total	Endosulfan Sulfate	0-1 ft	ug/kg	21	1.00	8.00	1.00	8.00	20	-	1	5.97	5.97	1	5%	No	No
Soil	Pesticides	Total	Endosulfan Sulfate	0-3 ft	ug/kg	23	1.00	8.00	1.00	8.00	22	-	1	5.97	5.97	1	4%	No	No
Soil	Pesticides	Total	Endosulfan Sulfate	0-10 ft	ug/kg	30	0.400	8.00	1.00	8.00	29	-	1	5.97	5.97	1	3%	No	No
Soil	Pesticides	Total	Endrin Aldehyde	0-1 ft	ug/kg	21	1.90	13.0	1.90	13.0	21	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Endrin Aldehyde	0-3 ft	ug/kg	23	1.90	13.0	1.90	13.0	23	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Endrin Aldehyde	0-10 ft	ug/kg	30	0.448	13.0	1.90	13.0	30	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Endrin Ketone	0-1 ft	ug/kg	20	1.90	17.0	1.90	17.0	20	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Endrin Ketone	0-3 ft	ug/kg	22	1.90	17.0	1.90	17.0	22	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Endrin Ketone	0-10 ft	ug/kg	29	0.309	17.0	1.90	17.0	29	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Endrin	0-1 ft	ug/kg	21	1.90	10.0	1.90	10.0	21	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Endrin	0-3 ft	ug/kg	23	1.90	10.0	1.90	10.0	23	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Endrin	0-10 ft	ug/kg	30	0.397	10.0	1.90	10.0	30	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Heptachlor Epoxide	0-1 ft	ug/kg	21	0.970	7.10	0.970	7.10	20	-	1	14.4	14.4	1	5%	No	No
Soil	Pesticides	Total	Heptachlor Epoxide	0-3 ft	ug/kg	23	0.970	7.10	0.970	7.10	22	-	1	14.4	14.4	1	4%	No	No
Soil	Pesticides	Total	Heptachlor Epoxide	0-10 ft	ug/kg	30	0.401	7.10	0.970	7.10	29	-	1	14.4	14.4	1	3%	No	No
Soil	Pesticides	Total	Heptachlor	0-1 ft	ug/kg	21	0.970	1.90	0.970	1.90	20	-	1	2.83	2.83	1	5%	No	No
Soil	Pesticides	Total	Heptachlor	0-3 ft	ug/kg	23	0.970	1.90	0.970	1.90	21	-	2	2.83	3.07	2	9%	No	Yes
Soil	Pesticides	Total	Heptachlor	0-10 ft	ug/kg	30	0.378	1.90	0.970	1.90	28	-	2	2.83	3.07	2	7%	No	Yes
Soil	Pesticides	Total	Methoxychlor	0-1 ft	ug/kg	21	4.00	19.0	4.00	19.0	21	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Methoxychlor	0-3 ft	ug/kg	23	4.00	19.0	4.00	19.0	23	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Methoxychlor	0-10 ft	ug/kg	30	1.51	19.0	4.00	19.0	30	-	-	-	-	0	0%	No	No

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(4 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	Pesticides	Total	Toxaphene	0-1 ft	ug/kg	21	34.0	190	34.0	190	21	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Toxaphene	0-3 ft	ug/kg	23	34.0	190	34.0	190	23	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Toxaphene	0-10 ft	ug/kg	30	6.89	190	34.0	190	30	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1016	0-1 ft	ug/kg	27	1.25	50.0	3.80	50.0	27	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1016	0-3 ft	ug/kg	29	1.14	50.0	3.80	50.0	29	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1016	0-10 ft	ug/kg	43	1.10	50.0	3.80	50.0	43	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1221	0-1 ft	ug/kg	27	3.80	50.0	3.80	50.0	27	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1221	0-3 ft	ug/kg	29	3.80	50.0	3.80	50.0	29	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1221	0-10 ft	ug/kg	43	3.80	50.0	3.80	50.0	43	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1232	0-1 ft	ug/kg	27	3.80	50.0	3.80	50.0	27	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1232	0-3 ft	ug/kg	29	3.80	50.0	3.80	50.0	29	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1232	0-10 ft	ug/kg	43	3.77	50.0	3.80	50.0	43	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1242	0-1 ft	ug/kg	27	2.28	50.0	3.80	50.0	27	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1242	0-3 ft	ug/kg	29	2.09	50.0	3.80	50.0	29	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1242	0-10 ft	ug/kg	43	2.01	50.0	3.80	50.0	43	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1248	0-1 ft	ug/kg	27	3.80	50.0	3.80	50.0	25	-	2	61.5	968	2	7%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1248	0-3 ft	ug/kg	29	3.80	50.0	3.80	50.0	27	-	2	61.5	968	2	7%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1248	0-10 ft	ug/kg	43	3.80	50.0	3.80	50.0	41	-	2	61.5	968	2	5%	No	No
Soil	PCB Aroclors	Total	Aroclor 1254	0-1 ft	ug/kg	27	1.77	50.0	4.00	50.0	18	-	9	5.50	78.6	9	33%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1254	0-3 ft	ug/kg	29	1.77	50.0	4.00	50.0	18	-	11	5.50	104	11	38%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1254	0-10 ft	ug/kg	43	1.62	50.0	4.00	50.0	27	-	16	5.50	499	16	37%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1260	0-1 ft	ug/kg	27	35.0	50.0	35.0	50.0	5	-	22	12.0	660	22	81%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1260	0-3 ft	ug/kg	29	35.0	50.0	35.0	50.0	5	-	24	12.0	660	24	83%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1260	0-10 ft	ug/kg	43	1.62	50.0	10.4	50.0	7	2	34	2.05	660	36	84%	No	Yes
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	ug/kg	27	105	150	105	150	-	-	-	19.9	996	22	81%	No	Yes
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-3 ft	ug/kg	29	105	150	105	150	-	-	-	19.9	996	24	83%	No	Yes
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-10 ft	ug/kg	43	8.42	150	31.2	150	-	-	-	9.88	996	36	84%	No	Yes
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	mg/kg	18	25.0	25.0	25.0	25.0	1	-	17	17.0	5,100	17	94%	No	--
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-3 ft	mg/kg	20	25.0	25.0	25.0	25.0	1	-	19	17.0	5,100	19	95%	No	Yes
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-10 ft	mg/kg	34	12.3	25.0	25.0	28.9	4	1	29	17.0	9,740	30	88%	No	Yes
Soil	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	mg/kg	18	100	100	100	100	1	-	17	100	23,900	17	94%	No	--
Soil	NWTPH-Dx	Total	Residual Range Organics	0-3 ft	mg/kg	20	100	100	100	100	1	-	19	100	23,900	19	95%	No	Yes
Soil	NWTPH-Dx	Total	Residual Range Organics	0-10 ft	mg/kg	34	25.5	100	51.1	100	2	1	31	31.1	41,900	32	94%	No	Yes
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	mg/kg	13	4.78	20.0	4.78	20.0	10	-	3	214	586	3	23%	No	--
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-3 ft	mg/kg	15	4.31	20.0	4.31	20.0	11	1	3	3.28	586	4	27%	No	--
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-10 ft	mg/kg	22	4.08	20.0	4.02	20.0	16	3	3	2.10	586	6	27%	No	Yes
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	ug/kg	26	13.0	190	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	ug/kg	28	11.8	190	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-10 ft	ug/kg	35	11.0	190	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-1 ft	ug/kg	26	16.1	190	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-3 ft	ug/kg	28	14.6	190	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-10 ft	ug/kg	35	13.6	190	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-1 ft	ug/kg	26	20.0	236	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-3 ft	ug/kg	28	19.9	236	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-10 ft	ug/kg	35	18.5	236	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-1 ft	ug/kg	26	20.0	269	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-3 ft	ug/kg	28	20.0	269	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-10 ft	ug/kg	35	20.0	269	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-1 ft	ug/kg	27	28.1	930	49.8	1,680	27	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-3 ft	ug/kg	29	19.5	930	49.8	1,680	29	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-10 ft	ug/kg	36	19.5	930	49.8	1,680	36	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-1 ft	ug/kg	27	20.8	300	49.8	1,680	27	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-3 ft	ug/kg	29	18.9	300	49.8	1,680	29	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-10 ft	ug/kg	36	17.6	300	49.8	1,680	36	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dichlorophenol	0-1 ft	ug/kg	27	17.2	300	49.8	1,680	27	-	-	-	-	0	0%	No	No

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(5 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	SVOCs	Total	2,4-Dichlorophenol	0-3 ft	ug/kg	29	15.6	300	49.8	1,680	29	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dichlorophenol	0-10 ft	ug/kg	36	14.5	300	49.8	1,680	36	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dimethylphenol	0-1 ft	ug/kg	27	17.2	190	20.0	1,680	27	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dimethylphenol	0-3 ft	ug/kg	29	15.6	190	20.0	1,680	29	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dimethylphenol	0-10 ft	ug/kg	36	14.5	190	20.0	1,680	36	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrophenol	0-1 ft	ug/kg	23	37.5	930	200	4,210	23	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrophenol	0-3 ft	ug/kg	25	34.1	930	200	4,210	25	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrophenol	0-10 ft	ug/kg	32	17.1	930	200	4,210	32	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-1 ft	ug/kg	26	20.3	366	98.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-3 ft	ug/kg	28	18.5	366	98.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-10 ft	ug/kg	35	17.2	366	98.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-1 ft	ug/kg	26	28.1	303	98.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-3 ft	ug/kg	28	25.6	303	98.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-10 ft	ug/kg	35	23.8	303	98.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chloronaphthalene	0-1 ft	ug/kg	26	4.68	190	15.6	190	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chloronaphthalene	0-3 ft	ug/kg	28	4.27	190	14.2	190	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chloronaphthalene	0-10 ft	ug/kg	35	3.97	190	13.2	190	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chlorophenol	0-1 ft	ug/kg	27	20.0	252	20.0	1,680	27	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chlorophenol	0-3 ft	ug/kg	29	20.0	252	20.0	1,680	29	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chlorophenol	0-10 ft	ug/kg	36	19.8	252	20.0	1,680	36	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Methylphenol	0-1 ft	ug/kg	27	18.7	202	20.0	1,680	27	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Methylphenol	0-3 ft	ug/kg	29	17.1	202	20.0	1,680	29	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Methylphenol	0-10 ft	ug/kg	36	15.9	202	20.0	1,680	36	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitroaniline	0-1 ft	ug/kg	26	20.3	930	98.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitroaniline	0-3 ft	ug/kg	28	18.5	930	98.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitroaniline	0-10 ft	ug/kg	35	17.1	930	98.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitrophenol	0-1 ft	ug/kg	27	21.9	300	49.8	1,680	27	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitrophenol	0-3 ft	ug/kg	29	19.9	300	49.8	1,680	29	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitrophenol	0-10 ft	ug/kg	36	18.5	300	49.8	1,680	36	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-1 ft	ug/kg	26	17.2	2,490	98.0	2,490	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-3 ft	ug/kg	28	15.6	2,490	98.0	2,490	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-10 ft	ug/kg	35	14.5	2,490	98.0	2,490	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3-Nitroaniline	0-1 ft	ug/kg	26	26.5	930	98.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3-Nitroaniline	0-3 ft	ug/kg	28	24.2	930	98.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3-Nitroaniline	0-10 ft	ug/kg	35	22.5	930	98.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-1 ft	ug/kg	23	57.8	930	200	4,210	23	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-3 ft	ug/kg	25	52.6	930	200	4,210	25	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-10 ft	ug/kg	32	24.6	930	200	4,210	32	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-1 ft	ug/kg	26	20.0	224	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-3 ft	ug/kg	28	18.9	224	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-10 ft	ug/kg	35	17.6	224	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-1 ft	ug/kg	27	17.2	300	49.8	1,680	27	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-3 ft	ug/kg	29	15.6	300	49.8	1,680	29	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-10 ft	ug/kg	36	14.5	300	49.8	1,680	36	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloroaniline	0-1 ft	ug/kg	26	14.5	300	98.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloroaniline	0-3 ft	ug/kg	28	13.2	300	98.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloroaniline	0-10 ft	ug/kg	35	12.3	300	98.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-1 ft	ug/kg	26	20.0	283	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-3 ft	ug/kg	28	20.0	283	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-10 ft	ug/kg	35	20.0	283	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitroaniline	0-1 ft	ug/kg	26	26.5	930	98.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitroaniline	0-3 ft	ug/kg	28	24.2	930	98.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitroaniline	0-10 ft	ug/kg	35	22.5	930	98.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitrophenol	0-1 ft	ug/kg	27	29.7	930	98.0	4,210	27	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitrophenol	0-3 ft	ug/kg	29	27.0	930	98.0	4,210	29	-	-	-	-	0	0%	No	No

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(6 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	SVOCs	Total	4-Nitrophenol	0-10 ft	ug/kg	36	25.1	930	98.0	4,210	36	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Aniline	0-1 ft	ug/kg	17	42.2	454	49.8	1,680	17	-	-	-	-	0	0%	No	--
Soil	SVOCs	Total	Aniline	0-3 ft	ug/kg	19	38.4	454	49.8	1,680	19	-	-	-	-	0	0%	No	--
Soil	SVOCs	Total	Aniline	0-10 ft	ug/kg	26	35.7	454	49.8	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Benzidine	0-1 ft	ug/kg	16	29.5	1,800	390	4,210	16	-	-	-	-	0	0%	No	--
Soil	SVOCs	Total	Benzidine	0-3 ft	ug/kg	18	26.9	1,800	355	4,210	18	-	-	-	-	0	0%	No	--
Soil	SVOCs	Total	Benzidine	0-10 ft	ug/kg	25	25.0	1,800	330	4,210	25	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Benzoic Acid	0-1 ft	ug/kg	23	200	930	200	4,210	16	2	5	20.0	553	7	30%	No	Yes
Soil	SVOCs	Total	Benzoic Acid	0-3 ft	ug/kg	25	200	930	200	4,210	16	4	5	20.0	553	9	36%	No	Yes
Soil	SVOCs	Total	Benzoic Acid	0-10 ft	ug/kg	32	44.9	930	200	4,210	22	5	5	20.0	553	10	31%	No	Yes
Soil	SVOCs	Total	Benzyl Alcohol	0-1 ft	ug/kg	27	20.0	353	20.0	1,680	26	1	-	14.0	14.0	1	4%	No	No
Soil	SVOCs	Total	Benzyl Alcohol	0-3 ft	ug/kg	29	20.0	353	20.0	1,680	28	1	-	14.0	14.0	1	3%	No	No
Soil	SVOCs	Total	Benzyl Alcohol	0-10 ft	ug/kg	36	20.0	353	20.0	1,680	35	1	-	14.0	14.0	1	3%	No	No
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-1 ft	ug/kg	26	18.7	202	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-3 ft	ug/kg	28	17.1	202	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-10 ft	ug/kg	35	15.9	202	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-1 ft	ug/kg	26	20.0	321	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-3 ft	ug/kg	28	20.0	321	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-10 ft	ug/kg	35	20.0	321	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-1 ft	ug/kg	26	20.0	438	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-3 ft	ug/kg	28	20.0	438	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-10 ft	ug/kg	35	20.0	438	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	ug/kg	27	50.0	690	50.0	4,210	3	-	24	92.0	21,000	24	89%	No	Yes
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-3 ft	ug/kg	29	50.0	690	50.0	4,210	3	-	26	92.0	21,000	26	90%	No	Yes
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-10 ft	ug/kg	36	50.0	690	50.0	4,210	3	2	31	92.0	21,000	33	92%	No	Yes
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	ug/kg	26	20.0	320	20.0	1,680	23	2	1	22.0	68.7	3	12%	No	Yes
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-3 ft	ug/kg	28	20.0	320	20.0	1,680	25	2	1	22.0	68.7	3	11%	No	Yes
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-10 ft	ug/kg	35	20.0	320	20.0	1,680	30	3	2	22.0	152	5	14%	No	Yes
Soil	SVOCs	Total	Carbazole	0-1 ft	ug/kg	27	20.0	180	20.0	180	8	3	16	14.0	2,650	19	70%	No	Yes
Soil	SVOCs	Total	Carbazole	0-3 ft	ug/kg	29	20.0	180	20.0	180	8	3	18	14.0	2,840	21	72%	No	Yes
Soil	SVOCs	Total	Carbazole	0-10 ft	ug/kg	36	5.28	180	13.5	180	10	3	23	14.0	2,840	26	72%	No	Yes
Soil	SVOCs	Total	Dibenzofuran	0-1 ft	ug/kg	27	20.0	195	20.0	1,680	16	5	6	20.0	810	11	41%	No	Yes
Soil	SVOCs	Total	Dibenzofuran	0-3 ft	ug/kg	29	20.0	195	20.0	1,680	16	6	7	20.0	810	13	45%	No	Yes
Soil	SVOCs	Total	Dibenzofuran	0-10 ft	ug/kg	36	15.7	195	20.0	1,680	18	9	9	20.0	810	18	50%	No	Yes
Soil	SVOCs	Total	Diethyl Phthalate	0-1 ft	ug/kg	26	20.0	286	20.0	1,680	23	1	2	44.0	73.4	3	12%	No	Yes
Soil	SVOCs	Total	Diethyl Phthalate	0-3 ft	ug/kg	28	20.0	286	20.0	1,680	23	3	2	28.9	73.4	5	18%	No	Yes
Soil	SVOCs	Total	Diethyl Phthalate	0-10 ft	ug/kg	35	20.0	286	20.0	1,680	29	4	2	28.9	73.4	6	17%	No	Yes
Soil	SVOCs	Total	Dimethyl Phthalate	0-1 ft	ug/kg	26	17.2	190	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Dimethyl Phthalate	0-3 ft	ug/kg	28	15.6	190	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Dimethyl Phthalate	0-10 ft	ug/kg	35	14.5	190	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	ug/kg	26	20.0	1,460	20.0	8,420	22	1	3	15.0	1,800	4	15%	No	Yes
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-3 ft	ug/kg	28	20.0	1,460	20.0	8,420	24	1	3	15.0	1,800	4	14%	No	Yes
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-10 ft	ug/kg	35	20.0	1,460	20.0	8,420	31	1	3	15.0	1,800	4	11%	No	Yes
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	ug/kg	26	20.0	730	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-3 ft	ug/kg	28	20.0	730	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-10 ft	ug/kg	35	20.0	730	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobenzene	0-1 ft	ug/kg	26	17.2	190	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobenzene	0-3 ft	ug/kg	28	15.6	190	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobenzene	0-10 ft	ug/kg	35	13.4	190	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobutadiene	0-1 ft	ug/kg	26	14.1	190	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobutadiene	0-3 ft	ug/kg	28	12.8	190	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobutadiene	0-10 ft	ug/kg	35	11.9	190	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-1 ft	ug/kg	26	22.0	300	98.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-3 ft	ug/kg	28	20.0	300	98.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-10 ft	ug/kg	35	16.6	300	98.0	1,680	35	-	-	-	-	0	0%	No	No

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(7 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	SVOCs	Total	Hexachloroethane	0-1 ft	ug/kg	26	20.0	320	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachloroethane	0-3 ft	ug/kg	28	20.0	320	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachloroethane	0-10 ft	ug/kg	35	16.4	320	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Isophorone	0-1 ft	ug/kg	26	20.0	236	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Isophorone	0-3 ft	ug/kg	28	19.9	236	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Isophorone	0-10 ft	ug/kg	35	18.5	236	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Nitrobenzene	0-1 ft	ug/kg	26	20.0	231	20.0	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Nitrobenzene	0-3 ft	ug/kg	28	19.5	231	20.0	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Nitrobenzene	0-10 ft	ug/kg	35	18.1	231	20.0	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-1 ft	ug/kg	22	17.2	300	98.0	4,210	22	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-3 ft	ug/kg	24	15.6	300	98.0	4,210	24	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-10 ft	ug/kg	31	10.8	300	98.0	4,210	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-1 ft	ug/kg	26	17.2	300	49.8	1,680	26	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-3 ft	ug/kg	28	15.6	300	49.8	1,680	28	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-10 ft	ug/kg	35	14.5	300	49.8	1,680	35	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-1 ft	ug/kg	23	12.5	190	20.0	1,680	23	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-3 ft	ug/kg	25	11.4	190	20.0	1,680	25	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-10 ft	ug/kg	32	10.6	190	20.0	1,680	32	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	ug/kg	27	20.0	249	20.0	1,680	26	1	-	64.0	64.0	1	4%	No	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-3 ft	ug/kg	29	20.0	249	20.0	1,680	28	1	-	64.0	64.0	1	3%	No	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-10 ft	ug/kg	36	19.6	249	20.0	1,680	35	1	-	64.0	64.0	1	3%	No	No
Soil	SVOCs	Total	Pentachlorophenol	0-1 ft	ug/kg	27	32.8	900	98.0	1,680	25	-	2	72.0	201	2	7%	No	Yes
Soil	SVOCs	Total	Pentachlorophenol	0-3 ft	ug/kg	29	29.9	900	98.0	1,680	27	-	2	72.0	201	2	7%	No	Yes
Soil	SVOCs	Total	Pentachlorophenol	0-10 ft	ug/kg	36	27.8	900	98.0	1,680	34	-	2	72.0	201	2	6%	No	Yes
Soil	SVOCs	Total	Phenol	0-1 ft	ug/kg	27	20.0	337	20.0	1,680	27	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Phenol	0-3 ft	ug/kg	29	20.0	337	20.0	1,680	29	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Phenol	0-10 ft	ug/kg	36	20.0	337	20.0	1,680	36	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Methylnaphthalene	0-1 ft	ug/kg	27	2.45	190	15.7	190	19	1	7	11.0	1,530	8	30%	No	Yes
Soil	SVOCs	Total	2-Methylnaphthalene	0-3 ft	ug/kg	29	2.22	190	14.2	190	20	1	8	11.0	1,530	9	31%	No	Yes
Soil	SVOCs	Total	2-Methylnaphthalene	0-10 ft	ug/kg	36	2.06	190	13.2	190	24	1	11	11.0	1,530	12	33%	No	Yes
Soil	SVOCs	Total	Acenaphthene	0-1 ft	ug/kg	27	20.0	180	20.0	180	8	2	17	15.0	2,600	19	70%	No	Yes
Soil	SVOCs	Total	Acenaphthene	0-3 ft	ug/kg	33	20.0	180	20.0	180	8	2	23	15.0	2,600	25	76%	No	Yes
Soil	SVOCs	Total	Acenaphthene	0-10 ft	ug/kg	44	6.80	180	14.7	1,440	10	2	32	15.0	3,040	34	77%	No	Yes
Soil	SVOCs	Total	Acenaphthylene	0-1 ft	ug/kg	27	20.0	190	20.0	190	20	-	7	3.40	78.1	7	26%	No	Yes
Soil	SVOCs	Total	Acenaphthylene	0-3 ft	ug/kg	33	20.0	190	20.0	190	20	-	13	3.40	111	13	39%	No	Yes
Soil	SVOCs	Total	Acenaphthylene	0-10 ft	ug/kg	44	5.90	190	13.5	190	25	-	19	3.40	111	19	43%	No	Yes
Soil	SVOCs	Total	Anthracene	0-1 ft	ug/kg	27	49.8	180	20.0	180	4	1	22	12.0	2,700	23	85%	No	Yes
Soil	SVOCs	Total	Anthracene	0-3 ft	ug/kg	33	49.8	180	20.0	180	4	1	28	12.0	8,440	29	88%	No	Yes
Soil	SVOCs	Total	Anthracene	0-10 ft	ug/kg	44	3.70	180	14.7	180	5	1	38	12.0	8,440	39	89%	No	Yes
Soil	SVOCs	Total	Fluorene	0-1 ft	ug/kg	27	20.0	180	20.0	180	11	3	13	10.0	1,200	16	59%	No	Yes
Soil	SVOCs	Total	Fluorene	0-3 ft	ug/kg	33	20.0	180	20.0	180	11	3	19	10.0	1,610	22	67%	No	Yes
Soil	SVOCs	Total	Fluorene	0-10 ft	ug/kg	44	6.86	180	14.7	180	12	3	29	10.0	1,610	32	73%	No	Yes
Soil	SVOCs	Total	Naphthalene	0-1 ft	ug/kg	27	20.0	190	20.0	190	16	-	11	5.00	823	11	41%	No	Yes
Soil	SVOCs	Total	Naphthalene	0-3 ft	ug/kg	33	20.0	190	20.0	190	16	-	17	5.00	823	17	52%	No	Yes
Soil	SVOCs	Total	Naphthalene	0-10 ft	ug/kg	44	6.34	190	13.5	190	20	-	24	5.00	1,710	24	55%	No	Yes
Soil	SVOCs	Total	Phenanthrene	0-1 ft	ug/kg	27	49.8	49.8	49.8	49.8	1	-	26	13.0	12,000	26	96%	No	Yes
Soil	SVOCs	Total	Phenanthrene	0-3 ft	ug/kg	33	49.8	49.8	49.8	49.8	1	-	32	13.0	21,900	32	97%	No	Yes
Soil	SVOCs	Total	Phenanthrene	0-10 ft	ug/kg	44	2.93	49.8	49.8	11,400	2	-	42	13.0	21,900	42	95%	No	Yes
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	27	299	299	299	299	-	-	-	141	18,674	26	96%	No	Yes
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	ug/kg	33	299	299	299	299	-	-	-	141	34,767	32	97%	No	Yes
Soil	SVOCs	Total	Benzo(a)anthracene	0-1 ft	ug/kg	27	49.8	92.9	49.8	305	2	-	25	29.0	32,000	25	93%	No	Yes
Soil	SVOCs	Total	Benzo(a)anthracene	0-3 ft	ug/kg	33	49.8	92.9	49.8	305	2	-	31	29.0	32,000	31	94%	No	Yes
Soil	SVOCs	Total	Benzo(a)anthracene	0-10 ft	ug/kg	44	49.8	92.9	49.8	305	2	-	42	29.0	32,000	42	95%	No	Yes
Soil	SVOCs	Total	Benzo(a)pyrene	0-1 ft	ug/kg	27	35.5	49.8	49.8	152	2	-	25	28.0	33,000	25	93%	No	Yes
Soil	SVOCs	Total	Benzo(a)pyrene	0-3 ft	ug/kg	33	35.5	49.8	49.8	152	2	-	31	28.0	34,000	31	94%	No	Yes

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(8 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	SVOCs	Total	Benzo(a)pyrene	0-10 ft	ug/kg	44	35.5	49.8	49.8	152	2	-	42	28.0	34,000	42	95%	No	Yes
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	ug/kg	24	49.8	49.8	49.8	49.8	1	-	23	34.0	65,000	23	96%	No	Yes
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-3 ft	ug/kg	28	49.8	49.8	49.8	49.8	1	-	27	34.0	65,000	27	96%	No	Yes
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-10 ft	ug/kg	28	49.8	49.8	49.8	49.8	1	-	27	34.0	65,000	27	96%	No	Yes
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	ug/kg	27	25.1	49.8	49.8	168	3	-	24	20.0	18,000	24	89%	No	Yes
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-3 ft	ug/kg	33	25.1	49.8	49.8	168	3	-	30	20.0	18,000	30	91%	No	Yes
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-10 ft	ug/kg	44	25.1	49.8	49.8	168	3	-	41	20.0	18,000	41	93%	No	Yes
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	ug/kg	24	49.8	49.8	49.8	49.8	1	-	23	40.0	65,000	23	96%	No	Yes
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-3 ft	ug/kg	28	49.8	49.8	49.8	49.8	1	-	27	40.0	65,000	27	96%	No	Yes
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-10 ft	ug/kg	28	49.8	49.8	49.8	49.8	1	-	27	40.0	65,000	27	96%	No	Yes
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-1 ft	ug/kg	3	-	-	-	-	0	-	3	1,080	14,700	3	100%	Yes	--
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-3 ft	ug/kg	5	-	-	-	-	0	-	5	1,080	31,300	5	100%	Yes	--
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-10 ft	ug/kg	16	-	-	-	-	0	-	16	197	31,300	16	100%	No	--
Soil	SVOCs	Total	Chrysene	0-1 ft	ug/kg	27	49.8	49.8	49.8	49.8	1	-	26	62.0	32,000	26	96%	No	Yes
Soil	SVOCs	Total	Chrysene	0-3 ft	ug/kg	33	49.8	49.8	49.8	49.8	1	-	32	62.0	35,300	32	97%	No	Yes
Soil	SVOCs	Total	Chrysene	0-10 ft	ug/kg	44	49.8	49.8	49.8	49.8	1	-	43	62.0	35,300	43	98%	No	Yes
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	ug/kg	27	35.5	1,800	20.0	1,800	5	1	21	18.0	9,900	22	81%	No	Yes
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-3 ft	ug/kg	33	35.5	1,800	20.0	1,800	5	1	27	18.0	9,900	28	85%	No	Yes
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-10 ft	ug/kg	44	3.08	1,800	13.2	1,800	8	1	35	18.0	9,900	36	82%	No	Yes
Soil	SVOCs	Total	Fluoranthene	0-1 ft	ug/kg	27	49.8	71.1	49.8	152	2	-	25	42.0	54,000	25	93%	No	Yes
Soil	SVOCs	Total	Fluoranthene	0-3 ft	ug/kg	33	49.8	71.1	49.8	152	2	-	31	42.0	54,000	31	94%	No	Yes
Soil	SVOCs	Total	Fluoranthene	0-10 ft	ug/kg	44	49.8	71.1	49.8	152	2	-	42	42.0	54,000	42	95%	No	Yes
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	ug/kg	27	35.5	49.8	49.8	168	3	-	24	18.0	19,000	24	89%	No	Yes
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-3 ft	ug/kg	33	35.5	49.8	49.8	168	3	-	30	18.0	20,000	30	91%	No	Yes
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-10 ft	ug/kg	44	35.5	49.8	49.8	168	3	-	41	18.0	20,000	41	93%	No	Yes
Soil	SVOCs	Total	Pyrene	0-1 ft	ug/kg	27	49.8	49.8	49.8	49.8	1	-	26	43.0	40,000	26	96%	No	Yes
Soil	SVOCs	Total	Pyrene	0-3 ft	ug/kg	33	49.8	49.8	49.8	49.8	1	-	32	43.0	67,100	32	97%	No	Yes
Soil	SVOCs	Total	Pyrene	0-10 ft	ug/kg	44	49.8	49.8	49.8	49.8	1	-	43	43.0	67,100	43	98%	No	Yes
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	27	498	498	498	498	-	-	-	334	367,900	26	96%	No	Yes
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	ug/kg	33	498	498	498	498	-	-	-	334	367,900	32	97%	No	Yes
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2-Trichloroethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,1,2-Trichloroethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2-Trichloroethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloroethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,1-Dichloroethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloroethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloroethene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,1-Dichloroethene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloroethene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloropropene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,1-Dichloropropene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloropropene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichloropropane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(9 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	VOCs	Total	1,2,3-Trichloropropane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichloropropane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	ug/kg	18	0.218	100	0.437	100	15	-	3	672	14,300	3	17%	No	--
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-3 ft	ug/kg	20	0.212	100	0.424	100	17	-	3	672	14,300	3	15%	No	Yes
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-10 ft	ug/kg	27	0.174	100	0.349	100	23	1	3	0.230	14,300	4	15%	No	Yes
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichlorobenzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,2-Dichlorobenzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichlorobenzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloropropane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,2-Dichloropropane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloropropane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	ug/kg	18	0.218	100	0.437	509	15	2	1	326	5,410	3	17%	No	--
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-3 ft	ug/kg	20	0.212	100	0.424	509	17	2	1	326	5,410	3	15%	No	Yes
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-10 ft	ug/kg	27	0.174	100	0.349	509	24	2	1	326	5,410	3	11%	No	Yes
Soil	VOCs	Total	1,3-Dichlorobenzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,3-Dichlorobenzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichlorobenzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichloropropane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,3-Dichloropropane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichloropropane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	1,4-Dichlorobenzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,4-Dichlorobenzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2,2-Dichloropropane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	2,2-Dichloropropane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2,2-Dichloropropane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Butanone (MEK)	0-1 ft	ug/kg	18	1.09	11,500	2.18	23,000	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	2-Butanone (MEK)	0-3 ft	ug/kg	20	1.06	11,500	2.12	23,000	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Butanone (MEK)	0-10 ft	ug/kg	27	0.872	11,500	1.74	23,000	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Chlorotoluene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	2-Chlorotoluene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Chlorotoluene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Hexanone	0-1 ft	ug/kg	18	1.09	11,500	2.18	23,000	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	2-Hexanone	0-3 ft	ug/kg	20	1.06	11,500	2.12	23,000	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Hexanone	0-10 ft	ug/kg	27	0.872	11,500	1.74	23,000	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	4-Chlorotoluene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	4-Chlorotoluene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	4-Chlorotoluene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	4-Isopropyltoluene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	4-Isopropyltoluene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	4-Isopropyltoluene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	26	-	1	0.457	0.457	1	4%	No	No
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	ug/kg	18	1.09	11,500	2.18	23,000	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-3 ft	ug/kg	20	1.06	11,500	2.12	23,000	20	-	-	-	-	0	0%	No	No

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(10 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-10 ft	ug/kg	27	0.872	11,500	1.74	23,000	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Acetone	0-1 ft	ug/kg	18	1.09	11,500	2.18	23,000	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Acetone	0-3 ft	ug/kg	20	1.06	11,500	2.12	23,000	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Acetone	0-10 ft	ug/kg	27	0.872	11,500	1.74	23,000	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Benzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Benzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Benzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromobenzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Bromobenzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromobenzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromochloromethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Bromochloromethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromochloromethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromodichloromethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Bromodichloromethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromodichloromethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromoform	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Bromoform	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromoform	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromomethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Bromomethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromomethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Carbon Disulfide	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Carbon Disulfide	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Carbon Disulfide	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Carbon Tetrachloride	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Carbon Tetrachloride	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Carbon Tetrachloride	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chlorobenzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Chlorobenzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chlorobenzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloroethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Chloroethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloroethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloroform	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Chloroform	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloroform	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloromethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Chloromethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloromethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromochloromethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Dibromochloromethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromochloromethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromomethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Dibromomethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromomethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dichlorodifluoromethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Dichlorodifluoromethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dichlorodifluoromethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	26	1	-	0.221	0.221	1	4%	No	No

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(11 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	ug/kg	18	0.218	2,300	0.674	4,600	17	-	1	12.0	12.0	1	6%	No	--
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-3 ft	ug/kg	20	0.212	2,300	0.674	4,600	19	-	1	12.0	12.0	1	5%	No	No
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	26	-	1	12.0	12.0	1	4%	No	No
Soil	VOCs	Total	Ethylbenzene	0-1 ft	ug/kg	18	0.218	255	0.437	4,600	17	1	-	2,700	2,700	1	6%	No	--
Soil	VOCs	Total	Ethylbenzene	0-3 ft	ug/kg	20	0.212	255	0.424	4,600	19	1	-	2,700	2,700	1	5%	No	No
Soil	VOCs	Total	Ethylbenzene	0-10 ft	ug/kg	27	0.174	255	0.349	4,600	25	2	-	0.282	2,700	2	7%	No	Yes
Soil	VOCs	Total	Hexachlorobutadiene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Hexachlorobutadiene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Hexachlorobutadiene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Isopropylbenzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Isopropylbenzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Isopropylbenzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	m,p-Xylenes	0-1 ft	ug/kg	18	0.437	509	0.873	1,020	17	-	1	9,800	9,800	1	6%	No	--
Soil	VOCs	Total	m,p-Xylenes	0-3 ft	ug/kg	20	0.424	509	0.849	1,020	19	-	1	9,800	9,800	1	5%	No	No
Soil	VOCs	Total	m,p-Xylenes	0-10 ft	ug/kg	27	0.242	509	0.698	1,020	25	1	1	0.552	9,800	2	7%	No	Yes
Soil	VOCs	Total	Naphthalene	0-1 ft	ug/kg	18	0.218	100	0.437	100	15	-	3	504	8,360	3	17%	No	--
Soil	VOCs	Total	Naphthalene	0-3 ft	ug/kg	20	0.212	100	0.424	100	17	-	3	504	8,360	3	15%	No	Yes
Soil	VOCs	Total	Naphthalene	0-10 ft	ug/kg	27	0.192	100	0.383	100	24	-	3	504	8,360	3	11%	No	Yes
Soil	VOCs	Total	n-Butylbenzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	n-Butylbenzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	n-Butylbenzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	n-Propylbenzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	n-Propylbenzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	n-Propylbenzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	o-Xylene	0-1 ft	ug/kg	18	0.0590	255	0.437	509	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	o-Xylene	0-3 ft	ug/kg	24	0.0590	255	0.424	509	24	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	o-Xylene	0-10 ft	ug/kg	35	0.0590	255	0.349	4,600	32	2	1	0.368	4,260	3	9%	No	Yes
Soil	VOCs	Total	sec-Butylbenzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	sec-Butylbenzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	sec-Butylbenzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Styrene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Styrene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Styrene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	tert-Butylbenzene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	tert-Butylbenzene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	tert-Butylbenzene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	ug/kg	18	2.10	255	2.10	509	10	2	6	1.07	65.0	8	44%	No	--
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-3 ft	ug/kg	24	2.10	255	2.10	509	10	3	11	0.734	65.0	14	58%	No	Yes
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-10 ft	ug/kg	35	2.10	255	2.10	509	10	3	22	0.605	403,000	25	71%	No	Yes
Soil	VOCs	Total	Toluene	0-1 ft	ug/kg	18	0.218	255	0.437	509	13	4	1	0.350	5.30	5	28%	No	--
Soil	VOCs	Total	Toluene	0-3 ft	ug/kg	24	0.212	255	0.424	509	14	9	1	0.170	5.30	10	42%	No	Yes
Soil	VOCs	Total	Toluene	0-10 ft	ug/kg	35	0.208	255	0.349	509	16	13	6	0.170	133,000	19	54%	No	Yes
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Trichloroethene (TCE)	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Trichloroethene (TCE)	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Trichloroethene (TCE)	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Trichlorofluoromethane	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Trichlorofluoromethane	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Trichlorofluoromethane	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	26	1	-	0.325	0.325	1	4%	No	No
Soil	VOCs	Total	Vinyl Acetate	0-1 ft	ug/kg	17	1.09	11,500	2.18	23,000	17	-	-	-	-	0	0%	No	--

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(12 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	VOCs	Total	Vinyl Acetate	0-3 ft	ug/kg	19	1.06	11,500	2.12	23,000	19	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Vinyl Acetate	0-10 ft	ug/kg	26	0.872	11,500	1.74	23,000	26	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Chloride	0-1 ft	ug/kg	18	0.218	2,300	0.437	4,600	18	-	-	-	-	0	0%	No	--
Soil	VOCs	Total	Vinyl Chloride	0-3 ft	ug/kg	20	0.212	2,300	0.424	4,600	20	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Chloride	0-10 ft	ug/kg	27	0.174	2,300	0.349	4,600	27	-	-	-	-	0	0%	No	No
MW Soil Subset	Metals	Total	Aluminum	0-1 ft	mg/kg	9	-	-	-	-	0	-	9	10,500	19,100	9	100%	No	--
MW Soil Subset	Metals	Total	Antimony	0-1 ft	mg/kg	9	0.200	0.300	0.200	0.300	9	-	-	-	-	0	0%	No	--
MW Soil Subset	Metals	Total	Arsenic	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	1.98	6.20	10	100%	No	--
MW Soil Subset	Metals	Total	Barium	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	95.1	242	10	100%	No	--
MW Soil Subset	Metals	Total	Beryllium	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	0.300	0.576	10	100%	No	--
MW Soil Subset	Metals	Total	Cadmium	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	0.343	1.70	10	100%	No	--
MW Soil Subset	Metals	Total	Chromium	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	15.6	801	10	100%	No	--
MW Soil Subset	Metals	Total	Cobalt	0-1 ft	mg/kg	9	-	-	-	-	0	-	9	6.40	22.7	9	100%	No	--
MW Soil Subset	Metals	Total	Copper	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	24.4	60.5	10	100%	No	--
MW Soil Subset	Metals	Total	Lead	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	5.34	680	10	100%	No	--
MW Soil Subset	Metals	Total	Manganese	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	263	614	10	100%	No	--
MW Soil Subset	Metals	Total	Mercury	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	0.0700	0.320	10	100%	No	--
MW Soil Subset	Metals	Total	Nickel	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	15.0	570	10	100%	No	--
MW Soil Subset	Metals	Total	Selenium	0-1 ft	mg/kg	10	0.200	0.300	0.200	0.300	8	-	2	0.300	0.848	2	20%	No	--
MW Soil Subset	Metals	Total	Silver	0-1 ft	mg/kg	10	0.200	0.300	0.200	0.300	5	-	5	0.200	0.500	5	50%	No	--
MW Soil Subset	Metals	Total	Thallium	0-1 ft	mg/kg	10	0.200	0.300	0.200	0.300	9	-	1	0.378	0.378	1	10%	No	--
MW Soil Subset	Metals	Total	Vanadium	0-1 ft	mg/kg	9	-	-	-	-	0	-	9	34.8	56.3	9	100%	No	--
MW Soil Subset	Metals	Total	Zinc	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	41.6	221	10	100%	No	--
MW Soil Subset	Herbicides	Total	2,4,5-T	0-1 ft	ug/kg	1	50.0	50.0	50.0	50.0	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	Herbicides	Total	2,4,5-TP (Silvex)	0-1 ft	ug/kg	1	50.0	50.0	50.0	50.0	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	Herbicides	Total	2,4-D	0-1 ft	ug/kg	1	50.0	50.0	50.0	50.0	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	Herbicides	Total	2,4-DB	0-1 ft	ug/kg	1	50.0	50.0	50.0	50.0	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	Herbicides	Total	Dalapon	0-1 ft	ug/kg	1	50.0	50.0	50.0	50.0	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	Herbicides	Total	Dicamba	0-1 ft	ug/kg	1	50.0	50.0	50.0	50.0	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	Herbicides	Total	Dichloroprop	0-1 ft	ug/kg	1	50.0	50.0	50.0	50.0	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	Herbicides	Total	Dinoseb	0-1 ft	ug/kg	1	50.0	50.0	50.0	50.0	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	Herbicides	Total	MCPA	0-1 ft	ug/kg	1	25,000	25,000	25,000	25,000	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	Herbicides	Total	MCPP	0-1 ft	ug/kg	1	25,000	25,000	25,000	25,000	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	Pesticides	Total	4,4'-DDD	0-1 ft	ug/kg	10	1.00	3.80	1.00	3.80	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	4,4'-DDE	0-1 ft	ug/kg	10	1.00	3.80	1.00	3.80	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	4,4'-DDT	0-1 ft	ug/kg	10	1.00	5.00	1.00	5.00	3	-	7	6.40	28.0	7	70%	No	--
MW Soil Subset	Pesticides	Total	Aldrin	0-1 ft	ug/kg	10	0.970	1.90	0.970	1.90	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	BHC (alpha)	0-1 ft	ug/kg	10	0.500	1.90	0.500	1.90	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	BHC (beta)	0-1 ft	ug/kg	10	0.900	12.0	0.900	12.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	BHC (delta)	0-1 ft	ug/kg	10	0.600	1.90	0.600	1.90	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	ug/kg	10	0.970	1.90	0.970	1.90	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	Chlordane (alpha)	0-1 ft	ug/kg	10	0.800	5.50	0.800	5.50	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	Chlordane (gamma)	0-1 ft	ug/kg	10	0.700	14.0	0.700	14.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	Dieldrin	0-1 ft	ug/kg	10	1.90	8.00	1.90	8.00	9	-	1	2.10	2.10	1	10%	No	--
MW Soil Subset	Pesticides	Total	Endosulfan I	0-1 ft	ug/kg	10	0.970	1.90	0.970	1.90	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	Endosulfan II	0-1 ft	ug/kg	10	1.90	3.80	1.90	3.80	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	Endosulfan Sulfate	0-1 ft	ug/kg	10	1.00	8.00	1.00	8.00	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	Endrin Aldehyde	0-1 ft	ug/kg	10	1.90	10.0	1.90	10.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	Endrin Ketone	0-1 ft	ug/kg	9	1.90	17.0	1.90	17.0	9	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	Endrin	0-1 ft	ug/kg	10	1.90	10.0	1.90	10.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	Heptachlor Epoxide	0-1 ft	ug/kg	10	0.970	1.90	0.970	1.90	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	Heptachlor	0-1 ft	ug/kg	10	0.970	1.90	0.970	1.90	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	Methoxychlor	0-1 ft	ug/kg	10	4.00	19.0	4.00	19.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	Pesticides	Total	Toxaphene	0-1 ft	ug/kg	10	50.0	190	50.0	190	10	-	-	-	-	0	0%	No	--
MW Soil Subset	PCB Aroclors	Total	Aroclor 1016	0-1 ft	ug/kg	10	3.80	50.0	3.80	50.0	10	-	-	-	-	0	0%	No	--

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
MW Soil Subset	PCB Aroclors	Total	Aroclor 1221	0-1 ft	ug/kg	10	3.80	50.0	3.80	50.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	PCB Aroclors	Total	Aroclor 1232	0-1 ft	ug/kg	10	3.80	50.0	3.80	50.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	PCB Aroclors	Total	Aroclor 1242	0-1 ft	ug/kg	10	3.80	50.0	3.80	50.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	PCB Aroclors	Total	Aroclor 1248	0-1 ft	ug/kg	10	3.80	50.0	3.80	50.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	PCB Aroclors	Total	Aroclor 1254	0-1 ft	ug/kg	10	4.00	50.0	4.00	50.0	3	-	7	5.50	49.0	7	70%	No	--
MW Soil Subset	PCB Aroclors	Total	Aroclor 1260	0-1 ft	ug/kg	10	50.0	50.0	50.0	50.0	1	-	9	12.0	92.0	9	90%	No	--
MW Soil Subset	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	ug/kg	10	150	150	150	150	-	-	-	20.0	127	9	90%	No	--
MW Soil Subset	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	mg/kg	1	25.0	25.0	25.0	25.0	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	mg/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	mg/kg	1	20.0	20.0	20.0	20.0	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	SVOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	1,2-Dichlorobenzene	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	1,3-Dichlorobenzene	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	1,4-Dichlorobenzene	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2,4,5-Trichlorophenol	0-1 ft	ug/kg	10	49.8	300	49.8	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2,4,6-Trichlorophenol	0-1 ft	ug/kg	10	49.8	300	49.8	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2,4-Dichlorophenol	0-1 ft	ug/kg	10	49.8	300	49.8	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2,4-Dimethylphenol	0-1 ft	ug/kg	10	20.0	99.7	20.0	99.7	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2,4-Dinitrophenol	0-1 ft	ug/kg	10	200	590	200	590	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2,4-Dinitrotoluene	0-1 ft	ug/kg	10	98.0	300	98.0	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2,6-Dinitrotoluene	0-1 ft	ug/kg	10	98.0	300	98.0	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2-Chloronaphthalene	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2-Chlorophenol	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2-Methylphenol	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2-Nitroaniline	0-1 ft	ug/kg	10	98.0	300	98.0	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2-Nitrophenol	0-1 ft	ug/kg	10	49.8	300	49.8	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	3,3'-Dichlorobenzidine	0-1 ft	ug/kg	10	98.0	2,490	98.0	2,490	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	3-Nitroaniline	0-1 ft	ug/kg	10	98.0	300	98.0	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-1 ft	ug/kg	10	200	590	200	590	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	4-Chloro-3-methylphenol	0-1 ft	ug/kg	10	49.8	300	49.8	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	4-Chloroaniline	0-1 ft	ug/kg	10	98.0	300	98.0	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	4-Nitroaniline	0-1 ft	ug/kg	10	98.0	300	98.0	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	4-Nitrophenol	0-1 ft	ug/kg	10	98.0	300	98.0	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Aniline	0-1 ft	ug/kg	1	49.8	49.8	49.8	49.8	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	SVOCs	Total	Benzoic Acid	0-1 ft	ug/kg	10	200	590	200	590	7	2	1	130	300	3	30%	No	--
MW Soil Subset	SVOCs	Total	Benzyl Alcohol	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	9	1	-	14.0	14.0	1	10%	No	--
MW Soil Subset	SVOCs	Total	Bis(2-chloroethoxy)methane	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Bis(2-chloroethyl) Ether	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	ug/kg	10	50.0	50.0	50.0	50.0	1	-	9	92.0	420	9	90%	No	--
MW Soil Subset	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Carbazole	0-1 ft	ug/kg	10	20.0	49.8	20.0	49.8	2	3	5	14.0	210	8	80%	No	--
MW Soil Subset	SVOCs	Total	Dibenzofuran	0-1 ft	ug/kg	10	20.0	49.8	20.0	59.0	8	1	1	31.0	36.0	2	20%	No	--
MW Soil Subset	SVOCs	Total	Diethyl Phthalate	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Dimethyl Phthalate	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	6	1	3	15.0	1,800	4	40%	No	--
MW Soil Subset	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Hexachlorobenzene	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Hexachlorobutadiene	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Hexachlorocyclopentadiene	0-1 ft	ug/kg	10	98.0	300	98.0	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Hexachloroethane	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Isophorone	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Nitrobenzene	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(14 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
MW Soil Subset	SVOCs	Total	N-Nitrosodimethylamine	0-1 ft	ug/kg	9	98.0	300	98.0	300	9	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	N-Nitrosodi-n-propylamine	0-1 ft	ug/kg	10	49.8	300	49.8	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	N-Nitrosodiphenylamine	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Pentachlorophenol	0-1 ft	ug/kg	10	98.0	300	98.0	300	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	Phenol	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	10	-	-	-	-	0	0%	No	--
MW Soil Subset	SVOCs	Total	2-Methylnaphthalene	0-1 ft	ug/kg	10	20.0	59.0	20.0	59.0	9	1	-	11.0	11.0	1	10%	No	--
MW Soil Subset	SVOCs	Total	Acenaphthene	0-1 ft	ug/kg	14	20.0	49.8	20.0	49.8	3	2	9	15.0	1,160	11	79%	No	--
MW Soil Subset	SVOCs	Total	Acenaphthylene	0-1 ft	ug/kg	14	20.0	59.0	20.0	59.0	10	-	4	3.40	19.0	4	29%	No	--
MW Soil Subset	SVOCs	Total	Anthracene	0-1 ft	ug/kg	14	49.8	49.8	20.0	49.8	1	1	12	15.0	1,070	13	93%	No	--
MW Soil Subset	SVOCs	Total	Fluorene	0-1 ft	ug/kg	14	20.0	49.8	20.0	49.8	4	3	7	10.0	510	10	71%	No	--
MW Soil Subset	SVOCs	Total	Naphthalene	0-1 ft	ug/kg	14	20.0	59.0	20.0	59.0	9	-	5	5.00	79.0	5	36%	No	--
MW Soil Subset	SVOCs	Total	Phenanthrene	0-1 ft	ug/kg	14	49.8	49.8	49.8	49.8	1	-	13	66.0	4,200	13	93%	No	--
MW Soil Subset	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	14	299	299	299	299	-	-	-	141	7,043	13	93%	No	--
MW Soil Subset	SVOCs	Total	Benzo(a)anthracene	0-1 ft	ug/kg	14	49.8	49.8	49.8	49.8	1	-	13	78.0	4,500	13	93%	No	--
MW Soil Subset	SVOCs	Total	Benzo(a)pyrene	0-1 ft	ug/kg	14	49.8	49.8	49.8	49.8	1	-	13	85.0	6,200	13	93%	No	--
MW Soil Subset	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	ug/kg	14	49.8	49.8	49.8	49.8	1	-	13	110	8,200	13	93%	No	--
MW Soil Subset	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	ug/kg	14	49.8	49.8	49.8	49.8	1	-	13	67.0	3,300	13	93%	No	--
MW Soil Subset	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	ug/kg	14	49.8	49.8	49.8	49.8	1	-	13	77.0	2,500	13	93%	No	--
MW Soil Subset	SVOCs	Total	Chrysene	0-1 ft	ug/kg	14	49.8	49.8	49.8	49.8	1	-	13	96.0	5,900	13	93%	No	--
MW Soil Subset	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	ug/kg	14	49.8	49.8	20.0	49.8	1	1	12	18.0	1,000	13	93%	No	--
MW Soil Subset	SVOCs	Total	Fluoranthene	0-1 ft	ug/kg	14	49.8	49.8	49.8	49.8	1	-	13	150	14,000	13	93%	No	--
MW Soil Subset	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	ug/kg	14	49.8	49.8	49.8	49.8	1	-	13	58.0	4,600	13	93%	No	--
MW Soil Subset	SVOCs	Total	Pyrene	0-1 ft	ug/kg	14	49.8	49.8	49.8	49.8	1	-	13	130	9,100	13	93%	No	--
MW Soil Subset	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	14	498	498	498	498	-	-	-	880	55,030	13	93%	No	--
MW Soil Subset	VOCs	Total	1,1,1,2-Tetrachloroethane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,1,2,2-Tetrachloroethane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,1,2-Trichloroethane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,1-Dichloroethane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,1-Dichloroethene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,1-Dichloropropene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,2,3-Trichlorobenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,2,3-Trichloropropane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,2-Dibromo-3-chloropropane	0-1 ft	ug/kg	1	500	500	500	500	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,2-Dibromoethane (EDB)	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,2-Dichlorobenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,2-Dichloroethane (EDC)	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,2-Dichloropropane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,3-Dichlorobenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,3-Dichloropropane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	2,2-Dichloropropane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	2-Butanone (MEK)	0-1 ft	ug/kg	1	1,000	1,000	1,000	1,000	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	2-Chlorotoluene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	2-Hexanone	0-1 ft	ug/kg	1	1,000	1,000	1,000	1,000	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	4-Chlorotoluene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	4-Isopropyltoluene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	ug/kg	1	1,000	1,000	1,000	1,000	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Acetone	0-1 ft	ug/kg	1	1,000	1,000	1,000	1,000	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Benzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Bromobenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(15 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
MW Soil Subset	VOCs	Total	Bromochloromethane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Bromodichloromethane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Bromoform	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Bromomethane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Carbon Disulfide	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Carbon Tetrachloride	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Chlorobenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Chloroethane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Chloroform	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Chloromethane	0-1 ft	ug/kg	1	500	500	500	500	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	cis-1,3-Dichloropropene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Dibromochloromethane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Dibromomethane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Dichlorodifluoromethane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	ug/kg	1	1,000	1,000	1,000	1,000	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Ethylbenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Hexachlorobutadiene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Isopropylbenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	m,p-Xylenes	0-1 ft	ug/kg	1	200	200	200	200	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Naphthalene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	n-Butylbenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	n-Propylbenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	o-Xylene	0-1 ft	ug/kg	5	0.0590	100	4.70	100	5	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	sec-Butylbenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Styrene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	tert-Butylbenzene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	ug/kg	5	100	100	4.70	100	1	2	2	1.50	9.70	4	80%	Yes	--
MW Soil Subset	VOCs	Total	Toluene	0-1 ft	ug/kg	5	100	100	4.70	100	1	4	-	0.350	1.46	4	80%	Yes	--
MW Soil Subset	VOCs	Total	trans-1,2-Dichloroethene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	trans-1,3-Dichloropropene	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Trichloroethene (TCE)	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Trichlorofluoromethane	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
MW Soil Subset	VOCs	Total	Vinyl Chloride	0-1 ft	ug/kg	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Total	Antimony	N/A	ug/L	19	3.00	50.0	3.00	50.0	11	7	1	0.294	3.89	8	42%	No	--
Groundwater	Metals	Total	Arsenic	N/A	ug/L	53	0.500	5.00	0.500	5.00	10	6	37	0.138	21.3	43	81%	No	Yes
Groundwater	Metals	Total	Barium	N/A	ug/L	19	-	-	-	-	0	-	19	7.15	304	19	100%	No	--
Groundwater	Metals	Total	Beryllium	N/A	ug/L	19	0.0142	5.00	0.500	5.00	12	7	-	0.222	0.435	7	37%	No	--
Groundwater	Metals	Total	Cadmium	N/A	ug/L	19	0.00710	5.00	0.500	5.00	13	3	3	0.0100	5.60	6	32%	No	--
Groundwater	Metals	Total	Chromium	N/A	ug/L	19	1.00	10.0	1.00	10.0	12	-	7	3.36	18.5	7	37%	No	--
Groundwater	Metals	Total	Copper	N/A	ug/L	19	10.0	10.0	10.0	10.0	8	-	11	2.33	201	11	58%	No	--
Groundwater	Metals	Total	Iron	N/A	ug/L	53	33.7	60.6	20.0	60.6	3	2	48	9.40	42,900	50	94%	No	Yes
Groundwater	Metals	Total	Lead	N/A	ug/L	53	0.00600	3.00	0.0200	3.00	21	-	32	0.0400	78.2	32	60%	No	Yes
Groundwater	Metals	Total	Manganese	N/A	ug/L	53	10.0	10.0	5.00	10.0	1	2	50	0.810	5,380	52	98%	No	Yes
Groundwater	Metals	Total	Mercury	N/A	ug/L	24	0.0500	0.200	0.200	0.200	20	2	2	0.0300	0.330	4	17%	No	Yes
Groundwater	Metals	Total	Nickel	N/A	ug/L	19	10.0	10.0	1.00	10.0	8	1	10	0.850	116	11	58%	No	--
Groundwater	Metals	Total	Selenium	N/A	ug/L	19	0.385	5.00	3.00	5.00	12	3	4	0.530	32.9	7	37%	No	--
Groundwater	Metals	Total	Silver	N/A	ug/L	19	0.100	10.0	0.100	10.0	14	1	4	0.0810	0.658	5	26%	No	--
Groundwater	Metals	Total	Thallium	N/A	ug/L	19	5.00	5.00	0.500	5.00	10	9	-	0.115	0.323	9	47%	No	--
Groundwater	Metals	Total	Zinc	N/A	ug/L	19	10.0	10.0	10.0	10.0	4	-	15	4.27	2,660	15	79%	No	--
Groundwater	Metals	Dissolved	Antimony	N/A	ug/L	3	50.0	50.0	50.0	50.0	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Arsenic	N/A	ug/L	36	0.500	5.00	0.500	5.00	7	3	26	0.220	19.3	29	81%	No	Yes
Groundwater	Metals	Dissolved	Barium	N/A	ug/L	3	-	-	-	-	0	-	3	21.2	134	3	100%	Yes	--
Groundwater	Metals	Dissolved	Beryllium	N/A	ug/L	3	5.00	5.00	5.00	5.00	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Cadmium	N/A	ug/L	3	5.00	5.00	5.00	5.00	3	-	-	-	-	0	0%	Yes	--

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(16 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Groundwater	Metals	Dissolved	Calcium	N/A	ug/L	9	-	-	-	-	0	-	9	9,510	172,000	9	100%	No	--
Groundwater	Metals	Dissolved	Chromium	N/A	ug/L	3	10.0	10.0	10.0	10.0	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Copper	N/A	ug/L	3	10.0	10.0	10.0	10.0	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Iron	N/A	ug/L	36	4.00	50.0	20.0	50.0	11	6	19	5.80	35,400	25	69%	No	Yes
Groundwater	Metals	Dissolved	Lead	N/A	ug/L	36	0.00600	3.00	0.0200	3.00	20	7	9	0.0120	3.50	16	44%	No	Yes
Groundwater	Metals	Dissolved	Magnesium	N/A	ug/L	9	-	-	-	-	0	-	9	1,210	25,800	9	100%	No	--
Groundwater	Metals	Dissolved	Manganese	N/A	ug/L	36	0.400	0.400	0.400	5.00	2	2	32	0.120	5,540	34	94%	No	Yes
Groundwater	Metals	Dissolved	Mercury	N/A	ug/L	8	0.0300	0.200	0.200	0.200	8	-	-	-	-	0	0%	No	--
Groundwater	Metals	Dissolved	Nickel	N/A	ug/L	3	10.0	10.0	10.0	10.0	2	-	1	18.6	18.6	1	33%	Yes	--
Groundwater	Metals	Dissolved	Potassium	N/A	ug/L	9	-	-	2,000	2,000	0	1	8	808	12,900	9	100%	No	--
Groundwater	Metals	Dissolved	Selenium	N/A	ug/L	3	5.00	5.00	5.00	5.00	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Silver	N/A	ug/L	3	10.0	10.0	10.0	10.0	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Sodium	N/A	ug/L	9	-	-	-	-	0	-	9	4,040	740,000	9	100%	No	--
Groundwater	Metals	Dissolved	Thallium	N/A	ug/L	3	5.00	5.00	5.00	5.00	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Zinc	N/A	ug/L	3	10.0	10.0	10.0	10.0	2	-	1	196	196	1	33%	Yes	--
Groundwater	Butyltins	Total	Dibutyltin	N/A	ug/L	39	0.00111	0.00810	0.00302	0.0500	28	2	9	0.00501	0.447	11	28%	No	Yes
Groundwater	Butyltins	Total	Monobutyltin	N/A	ug/L	39	0.00105	0.0290	0.00302	0.0870	32	1	6	0.00449	0.240	7	18%	No	Yes
Groundwater	Butyltins	Total	Tetrabutyltin	N/A	ug/L	8	0.00110	0.00119	0.00300	0.00325	8	-	-	-	-	0	0%	No	--
Groundwater	Butyltins	Total	Tributyltin	N/A	ug/L	8	0.00156	0.00163	0.00402	0.00419	2	-	6	0.0171	0.0601	6	75%	No	--
Groundwater	Herbicides	Total	2,4,5-T	N/A	ug/L	21	0.0566	0.150	0.100	0.160	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	2,4,5-TP (Silvex)	N/A	ug/L	21	0.0227	0.100	0.0800	0.100	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	2,4-D	N/A	ug/L	21	0.0296	1.00	0.0800	1.00	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	2,4-DB	N/A	ug/L	21	0.0557	1.00	0.160	1.00	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	4-Nitrophenol	N/A	ug/L	8	0.0114	0.0114	0.0800	0.0800	7	-	1	0.840	0.840	1	13%	No	--
Groundwater	Herbicides	Total	Dalapon	N/A	ug/L	21	0.0124	2.00	0.0800	2.00	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	Dicamba	N/A	ug/L	21	0.0221	0.100	0.0800	0.100	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	Dichloroprop	N/A	ug/L	21	0.0114	1.00	0.0800	1.00	20	-	1	1.10	1.10	1	5%	No	No
Groundwater	Herbicides	Total	Dinoseb	N/A	ug/L	21	0.0292	0.500	0.0800	0.500	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	MCPA	N/A	ug/L	21	0.0114	50.0	0.0800	50.0	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	MCPP	N/A	ug/L	21	0.0134	50.0	0.0800	50.0	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	Pentachlorophenol	N/A	ug/L	8	0.0259	0.0259	0.0800	0.0800	7	-	1	0.112	0.112	1	13%	No	--
Groundwater	PCB Aroclors	Total	Aroclor 1016	N/A	ug/L	22	0.00199	1.00	0.00992	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Aroclor 1221	N/A	ug/L	22	0.00496	1.00	0.0198	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Aroclor 1232	N/A	ug/L	22	0.00236	1.00	0.00992	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Aroclor 1242	N/A	ug/L	22	0.00327	1.00	0.00992	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Aroclor 1248	N/A	ug/L	22	0.00155	1.00	0.00992	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Aroclor 1254	N/A	ug/L	22	0.00199	1.00	0.00992	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Aroclor 1260	N/A	ug/L	22	0.00109	1.00	0.00992	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	N/A	ug/L	22	-	-	-	-	-	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	4,4'-DDD	N/A	ug/L	22	0.000458	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	4,4'-DDE	N/A	ug/L	22	0.000380	0.100	0.00195	0.100	21	-	1	0.00246	0.00246	1	5%	No	No
Groundwater	Pesticides	Total	4,4'-DDT	N/A	ug/L	22	0.000486	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Aldrin	N/A	ug/L	22	0.000111	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	BHC (alpha)	N/A	ug/L	22	0.000358	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	BHC (beta)	N/A	ug/L	22	0.000415	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	BHC (delta)	N/A	ug/L	22	0.000228	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	BHC (gamma) Lindane	N/A	ug/L	22	0.000700	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Chlordane (alpha)	N/A	ug/L	14	0.0470	0.0500	0.0470	0.0500	14	-	-	-	-	0	0%	No	--
Groundwater	Pesticides	Total	Chlordane (gamma)	N/A	ug/L	14	0.0470	0.0500	0.0470	0.0500	14	-	-	-	-	0	0%	No	--
Groundwater	Pesticides	Total	Chlordane (technical)	N/A	ug/L	8	0.00312	0.0114	0.00973	0.0137	8	-	-	-	-	0	0%	No	--
Groundwater	Pesticides	Total	Dieldrin	N/A	ug/L	22	0.000294	0.100	0.00195	0.100	21	1	-	0.000982	0.000982	1	5%	No	No
Groundwater	Pesticides	Total	Endosulfan I	N/A	ug/L	22	0.000485	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Endosulfan II	N/A	ug/L	22	0.000368	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Endosulfan Sulfate	N/A	ug/L	22	0.000523	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Endrin Aldehyde	N/A	ug/L	22	0.000947	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(17 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Groundwater	Pesticides	Total	Endrin Ketone	N/A	ug/L	22	0.000335	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Endrin	N/A	ug/L	22	0.000301	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Heptachlor Epoxide	N/A	ug/L	22	0.000364	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Heptachlor	N/A	ug/L	22	0.000733	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Methoxychlor	N/A	ug/L	22	0.000522	0.500	0.00973	0.500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Toxaphene	N/A	ug/L	22	0.0113	1.00	0.0973	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	55	12.0	250	100	250	18	11	26	13.0	1,800	37	67%	No	Yes
Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	ug/L	55	21.0	750	100	750	28	7	20	51.0	1,900	27	49%	No	Yes
Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	57	13.0	100	100	250	40	14	3	13.0	430	17	30%	No	Yes
Groundwater	SVOCs	Total	1,2,4-Trichlorobenzene	N/A	ug/L	23	0.0100	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	1,2-Dichlorobenzene	N/A	ug/L	23	0.0160	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	1,3-Dichlorobenzene	N/A	ug/L	23	0.0170	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	54	0.0150	10.0	0.0999	10.0	52	2	-	0.0258	0.0601	2	4%	No	No
Groundwater	SVOCs	Total	2,4,5-Trichlorophenol	N/A	ug/L	23	0.0110	48.0	0.0999	48.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2,4,6-Trichlorophenol	N/A	ug/L	23	0.0120	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2,4-Dichlorophenol	N/A	ug/L	23	0.0150	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2,4-Dimethylphenol	N/A	ug/L	23	0.0150	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2,4-Dinitrophenol	N/A	ug/L	23	0.0300	48.0	0.500	48.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2,4-Dinitrotoluene	N/A	ug/L	23	0.0130	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2,6-Dinitrotoluene	N/A	ug/L	23	0.0200	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2-Chloronaphthalene	N/A	ug/L	23	0.00150	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2-Chlorophenol	N/A	ug/L	23	0.0170	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2-Methylnaphthalene	N/A	ug/L	23	0.0150	10.0	0.0999	10.0	19	4	-	0.0385	0.360	4	17%	No	Yes
Groundwater	SVOCs	Total	2-Methylphenol	N/A	ug/L	23	0.0240	10.0	0.0999	10.0	22	-	1	76.0	76.0	1	4%	No	No
Groundwater	SVOCs	Total	2-Nitroaniline	N/A	ug/L	23	0.0180	48.0	0.0999	48.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2-Nitrophenol	N/A	ug/L	23	0.0220	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	3,3'-Dichlorobenzidine	N/A	ug/L	23	0.0360	19.0	0.0999	19.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	3-Nitroaniline	N/A	ug/L	23	0.0330	48.0	0.0999	48.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4,6-Dinitro-2-methylphenol	N/A	ug/L	23	0.0220	48.0	0.500	48.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4-Bromophenyl Phenyl Ether	N/A	ug/L	23	0.0120	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4-Chloro-3-methylphenol	N/A	ug/L	23	0.0539	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4-Chloroaniline	N/A	ug/L	23	0.0390	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4-Chlorophenyl Phenyl Ether	N/A	ug/L	23	0.0150	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4-Nitroaniline	N/A	ug/L	23	0.0210	48.0	0.0999	48.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4-Nitrophenol	N/A	ug/L	53	0.0290	48.0	0.500	48.0	53	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Acenaphthene	N/A	ug/L	23	0.00160	10.0	0.00999	10.0	21	-	2	0.111	0.239	2	9%	No	Yes
Groundwater	SVOCs	Total	Acenaphthylene	N/A	ug/L	23	0.00150	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Aniline	N/A	ug/L	23	0.0000616	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Anthracene	N/A	ug/L	23	0.00150	10.0	0.00999	10.0	22	-	1	0.0589	0.0589	1	4%	No	No
Groundwater	SVOCs	Total	Benzidine	N/A	ug/L	23	0.0240	100	0.500	100	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Benzo(a)anthracene	N/A	ug/L	23	0.00426	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Benzo(a)pyrene	N/A	ug/L	23	0.00470	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Benzo(b)fluoranthene	N/A	ug/L	14	9.40	10.0	9.40	10.0	14	-	-	-	-	0	0%	No	--
Groundwater	SVOCs	Total	Benzo(g,h,i)perylene	N/A	ug/L	23	0.00340	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Benzo(k)fluoranthene	N/A	ug/L	14	9.40	10.0	9.40	10.0	14	-	-	-	-	0	0%	No	--
Groundwater	SVOCs	Total	Benzofluoranthenes, Total	N/A	ug/L	9	0.00380	0.0540	0.0200	0.284	9	-	-	-	-	0	0%	No	--
Groundwater	SVOCs	Total	Benzoic Acid	N/A	ug/L	23	0.0200	48.0	0.500	48.0	22	-	1	11.0	11.0	1	4%	No	No
Groundwater	SVOCs	Total	Benzyl Alcohol	N/A	ug/L	23	0.0320	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Bis(2-chloroethoxy)methane	N/A	ug/L	23	0.0180	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Bis(2-chloroethyl) Ether	N/A	ug/L	23	0.0190	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Bis(2-chloroisopropyl) Ether	N/A	ug/L	23	0.0210	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	ug/L	23	0.0649	48.0	0.0999	48.0	19	-	4	1.79	19.0	4	17%	No	Yes
Groundwater	SVOCs	Total	Butyl Benzyl Phthalate	N/A	ug/L	23	0.187	10.0	0.500	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Carbazole	N/A	ug/L	23	0.00280	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Chrysene	N/A	ug/L	23	0.00250	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(18 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Groundwater	SVOCs	Total	Dibenz(a,h)anthracene	N/A	ug/L	23	0.00270	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Dibenzofuran	N/A	ug/L	23	0.0140	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Diethyl Phthalate	N/A	ug/L	23	0.0579	10.0	0.0999	10.0	20	1	2	0.192	1.90	3	13%	No	Yes
Groundwater	SVOCs	Total	Dimethyl Phthalate	N/A	ug/L	23	0.0160	10.0	0.100	10.0	22	-	1	0.235	0.235	1	4%	No	No
Groundwater	SVOCs	Total	Di-n-butyl Phthalate	N/A	ug/L	23	0.231	10.0	0.500	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Di-n-octyl Phthalate	N/A	ug/L	23	0.0340	10.0	0.0999	10.0	20	-	3	2.85	7.08	3	13%	No	Yes
Groundwater	SVOCs	Total	Fluoranthene	N/A	ug/L	23	0.00190	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Fluorene	N/A	ug/L	23	0.00140	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Hexachlorobenzene	N/A	ug/L	23	0.0200	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Hexachlorobutadiene	N/A	ug/L	23	0.0290	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Hexachlorocyclopentadiene	N/A	ug/L	23	0.0260	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Hexachloroethane	N/A	ug/L	23	0.0400	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Indeno(1,2,3-cd)pyrene	N/A	ug/L	23	0.00300	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Isophorone	N/A	ug/L	23	0.0180	10.0	0.0999	10.0	21	1	1	0.116	0.282	2	9%	No	Yes
Groundwater	SVOCs	Total	Naphthalene	N/A	ug/L	23	0.00220	10.0	0.00999	10.0	20	-	3	0.0400	0.157	3	13%	No	Yes
Groundwater	SVOCs	Total	Nitrobenzene	N/A	ug/L	23	0.0450	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	N-Nitrosodimethylamine	N/A	ug/L	23	0.00330	10.0	0.500	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	N-Nitrosodi-n-propylamine	N/A	ug/L	23	0.0210	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	N-Nitrosodiphenylamine	N/A	ug/L	23	0.00999	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	ug/L	23	0.0230	10.0	0.0999	10.0	22	-	1	29.0	29.0	1	4%	No	No
Groundwater	SVOCs	Total	Pentachlorophenol	N/A	ug/L	23	0.0170	25.0	0.0999	25.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Phenanthrene	N/A	ug/L	54	0.00220	10.0	0.00999	10.0	49	-	5	0.0800	3.90	5	9%	No	Yes
Groundwater	SVOCs	Total	Phenol	N/A	ug/L	54	0.0320	10.0	0.0999	10.0	53	1	-	0.382	0.382	1	2%	No	No
Groundwater	SVOCs	Total	Pyrene	N/A	ug/L	23	0.00140	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,1,2-Trichloroethane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,1-Dichloropropene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2,3-Trichlorobenzene	N/A	ug/L	22	0.500	5.00	1.00	5.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2,3-Trichloropropane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2,4-Trichlorobenzene	N/A	ug/L	22	0.500	5.00	1.00	5.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	ug/L	22	0.500	1.00	1.00	1.00	20	-	2	1.00	5.20	2	9%	No	Yes
Groundwater	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	ug/L	22	0.500	3.00	1.00	3.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2-Dichlorobenzene	N/A	ug/L	22	0.500	2.00	1.00	2.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2-Dichloropropane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,3,5-Trimethylbenzene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,3-Dichlorobenzene	N/A	ug/L	22	0.500	2.00	1.00	2.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,3-Dichloropropane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	22	0.500	2.00	1.00	2.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	2-Butanone (MEK)	N/A	ug/L	14	2.50	10.0	5.00	10.0	14	-	-	-	-	0	0%	No	--
Groundwater	VOCs	Total	2-Chloroethylvinylether	N/A	ug/L	13	10.0	10.0	10.0	10.0	13	-	-	-	-	0	0%	No	--
Groundwater	VOCs	Total	2-Chlorotoluene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	2-Hexanone	N/A	ug/L	22	2.50	10.0	5.00	10.0	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	4-Chlorotoluene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	4-Isopropyltoluene	N/A	ug/L	22	0.500	2.00	1.00	2.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	ug/L	22	2.50	10.0	5.00	10.0	21	1	-	3.04	3.04	1	5%	No	No
Groundwater	VOCs	Total	Acetone	N/A	ug/L	22	2.50	10.0	5.00	10.0	18	-	4	8.39	15.4	4	18%	No	Yes
Groundwater	VOCs	Total	Benzene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Bromobenzene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(19 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Groundwater	VOCs	Total	Bromochloromethane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Bromodichloromethane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Bromoform	N/A	ug/L	22	0.500	3.00	1.00	3.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Bromomethane	N/A	ug/L	22	1.00	1.00	1.00	2.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Carbon Disulfide	N/A	ug/L	22	0.500	10.0	1.00	10.0	21	-	1	3.95	3.95	1	5%	No	No
Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	ug/L	22	0.500	1.00	1.00	1.00	21	-	1	1.40	1.40	1	5%	No	No
Groundwater	VOCs	Total	Chlorobenzene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Chloroethane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Chloroform	N/A	ug/L	56	0.0820	1.00	0.500	1.00	48	4	4	0.100	3.70	8	14%	No	Yes
Groundwater	VOCs	Total	Chloromethane	N/A	ug/L	22	0.500	5.00	1.00	5.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	ug/L	22	0.500	1.00	1.00	1.00	21	1	-	0.791	0.791	1	5%	No	No
Groundwater	VOCs	Total	cis-1,3-Dichloropropene	N/A	ug/L	22	0.500	3.00	1.00	3.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Dibromochloromethane	N/A	ug/L	22	0.500	2.00	1.00	2.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Dibromomethane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Dichlorodifluoromethane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	ug/L	22	0.500	5.00	1.00	5.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Ethylbenzene	N/A	ug/L	22	0.500	1.00	1.00	1.00	21	-	1	1.00	1.00	1	5%	No	No
Groundwater	VOCs	Total	Hexachlorobutadiene	N/A	ug/L	22	0.500	3.00	1.00	3.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Isopropylbenzene	N/A	ug/L	22	0.500	1.00	1.00	1.00	20	-	2	3.20	4.60	2	9%	No	Yes
Groundwater	VOCs	Total	m,p-Xylenes	N/A	ug/L	22	1.00	1.00	1.00	2.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Naphthalene	N/A	ug/L	22	0.500	5.00	1.00	5.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	n-Butylbenzene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	n-Propylbenzene	N/A	ug/L	22	0.500	1.00	1.00	1.00	20	-	2	1.20	2.00	2	9%	No	Yes
Groundwater	VOCs	Total	o-Xylene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	sec-Butylbenzene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Styrene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	tert-Butylbenzene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	56	0.0970	1.00	0.500	1.00	43	2	11	0.230	8.78	13	23%	No	Yes
Groundwater	VOCs	Total	Toluene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	trans-1,3-Dichloropropene	N/A	ug/L	22	0.500	3.00	1.00	3.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Trichlorofluoromethane	N/A	ug/L	22	0.500	1.00	1.00	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Vinyl Acetate	N/A	ug/L	22	2.50	10.0	5.00	10.0	22	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Vinyl Chloride	N/A	ug/L	56	0.0440	1.00	0.500	1.00	40	13	3	0.160	0.955	16	29%	No	Yes
Seep Water	Metals	Total	Antimony	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	Metals	Total	Arsenic	N/A	ug/L	5	1.01	1.01	1.01	1.01	1	-	4	0.500	12.8	4	80%	Yes	--
Seep Water	Metals	Total	Barium	N/A	ug/L	1	-	-	-	-	0	-	1	74.2	74.2	1	100%	Yes	--
Seep Water	Metals	Total	Beryllium	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	Metals	Total	Cadmium	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	Metals	Total	Chromium	N/A	ug/L	1	-	-	-	-	0	-	1	1.05	1.05	1	100%	Yes	--
Seep Water	Metals	Total	Copper	N/A	ug/L	1	-	-	-	-	0	-	1	2.72	2.72	1	100%	Yes	--
Seep Water	Metals	Total	Iron	N/A	ug/L	5	-	-	-	-	0	-	5	271	121,000	5	100%	Yes	--
Seep Water	Metals	Total	Lead	N/A	ug/L	5	1.00	1.00	1.00	1.00	1	-	4	0.113	25.7	4	80%	Yes	--
Seep Water	Metals	Total	Manganese	N/A	ug/L	5	-	-	-	-	0	-	5	8.90	3,240	5	100%	Yes	--
Seep Water	Metals	Total	Mercury	N/A	ug/L	2	1.00	1.00	0.200	1.00	1	1	-	0.0300	0.0300	1	50%	Yes	--
Seep Water	Metals	Total	Nickel	N/A	ug/L	1	-	-	-	-	0	-	1	2.32	2.32	1	100%	Yes	--
Seep Water	Metals	Total	Selenium	N/A	ug/L	1	-	-	-	-	0	-	1	1.11	1.11	1	100%	Yes	--
Seep Water	Metals	Total	Silver	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	Metals	Total	Thallium	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	Metals	Total	Zinc	N/A	ug/L	1	10.0	10.0	10.0	10.0	1	-	-	-	-	0	0%	Yes	--
Seep Water	Metals	Dissolved	Antimony	N/A	ug/L	1	-	-	-	-	0	-	1	2.28	2.28	1	100%	Yes	--
Seep Water	Metals	Dissolved	Arsenic	N/A	ug/L	5	0.520	1.00	0.520	1.00	2	-	3	0.500	1.00	3	60%	Yes	--
Seep Water	Metals	Dissolved	Barium	N/A	ug/L	1	-	-	-	-	0	-	1	277	277	1	100%	Yes	--
Seep Water	Metals	Dissolved	Beryllium	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(20 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Seep Water	Metals	Dissolved	Cadmium	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	Metals	Dissolved	Calcium	N/A	ug/L	2	-	-	-	-	0	-	2	22,600	76,400	2	100%	Yes	--
Seep Water	Metals	Dissolved	Chromium	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	Metals	Dissolved	Copper	N/A	ug/L	1	-	-	-	-	0	-	1	1.09	1.09	1	100%	Yes	--
Seep Water	Metals	Dissolved	Iron	N/A	ug/L	5	20.0	20.0	20.0	20.0	2	2	1	9.70	3,210	3	60%	Yes	--
Seep Water	Metals	Dissolved	Lead	N/A	ug/L	5	0.0300	1.00	0.0300	1.00	2	2	1	0.00800	0.0650	3	60%	Yes	--
Seep Water	Metals	Dissolved	Magnesium	N/A	ug/L	2	-	-	-	-	0	-	2	5,070	16,600	2	100%	Yes	--
Seep Water	Metals	Dissolved	Manganese	N/A	ug/L	5	0.140	0.160	0.140	0.160	2	-	3	1.99	1,480	3	60%	Yes	--
Seep Water	Metals	Dissolved	Mercury	N/A	ug/L	2	0.0300	1.00	0.200	1.00	2	-	-	-	-	0	0%	Yes	--
Seep Water	Metals	Dissolved	Nickel	N/A	ug/L	1	-	-	-	-	0	-	1	2.22	2.22	1	100%	Yes	--
Seep Water	Metals	Dissolved	Potassium	N/A	ug/L	2	-	-	2,000	2,000	0	1	1	771	4,160	2	100%	Yes	--
Seep Water	Metals	Dissolved	Selenium	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	Metals	Dissolved	Silver	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	Metals	Dissolved	Sodium	N/A	ug/L	2	-	-	-	-	0	-	2	6,680	19,700	2	100%	Yes	--
Seep Water	Metals	Dissolved	Thallium	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	Metals	Dissolved	Zinc	N/A	ug/L	1	-	-	-	-	0	-	1	85.6	85.6	1	100%	Yes	--
Seep Water	Butyltins	Total	Dibutyltin	N/A	ug/L	4	0.00730	0.00810	0.0500	0.0500	4	-	-	-	-	0	0%	Yes	--
Seep Water	Butyltins	Total	Monobutyltin	N/A	ug/L	4	0.0110	0.0290	0.0500	0.0870	4	-	-	-	-	0	0%	Yes	--
Seep Water	Herbicides	Total	2,4,5-T	N/A	ug/L	1	0.400	0.400	0.400	0.400	1	-	-	-	-	0	0%	Yes	--
Seep Water	Herbicides	Total	2,4,5-TP (Silvex)	N/A	ug/L	1	0.400	0.400	0.400	0.400	1	-	-	-	-	0	0%	Yes	--
Seep Water	Herbicides	Total	2,4-D	N/A	ug/L	1	0.400	0.400	0.400	0.400	1	-	-	-	-	0	0%	Yes	--
Seep Water	Herbicides	Total	2,4-DB	N/A	ug/L	1	0.400	0.400	0.400	0.400	1	-	-	-	-	0	0%	Yes	--
Seep Water	Herbicides	Total	Dalapon	N/A	ug/L	1	0.400	0.400	0.400	0.400	1	-	-	-	-	0	0%	Yes	--
Seep Water	Herbicides	Total	Dicamba	N/A	ug/L	1	0.400	0.400	0.400	0.400	1	-	-	-	-	0	0%	Yes	--
Seep Water	Herbicides	Total	Dichloroprop	N/A	ug/L	1	0.400	0.400	0.400	0.400	1	-	-	-	-	0	0%	Yes	--
Seep Water	Herbicides	Total	Dinoseb	N/A	ug/L	1	0.400	0.400	0.400	0.400	1	-	-	-	-	0	0%	Yes	--
Seep Water	Herbicides	Total	MCPA	N/A	ug/L	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
Seep Water	Herbicides	Total	MCPP	N/A	ug/L	1	100	100	100	100	1	-	-	-	-	0	0%	Yes	--
Seep Water	PCB Aroclors	Total	Aroclor 1016	N/A	ug/L	1	0.100	0.100	0.100	0.100	1	-	-	-	-	0	0%	Yes	--
Seep Water	PCB Aroclors	Total	Aroclor 1221	N/A	ug/L	1	0.100	0.100	0.100	0.100	1	-	-	-	-	0	0%	Yes	--
Seep Water	PCB Aroclors	Total	Aroclor 1232	N/A	ug/L	1	0.100	0.100	0.100	0.100	1	-	-	-	-	0	0%	Yes	--
Seep Water	PCB Aroclors	Total	Aroclor 1242	N/A	ug/L	1	0.100	0.100	0.100	0.100	1	-	-	-	-	0	0%	Yes	--
Seep Water	PCB Aroclors	Total	Aroclor 1248	N/A	ug/L	1	0.100	0.100	0.100	0.100	1	-	-	-	-	0	0%	Yes	--
Seep Water	PCB Aroclors	Total	Aroclor 1254	N/A	ug/L	1	0.100	0.100	0.100	0.100	1	-	-	-	-	0	0%	Yes	--
Seep Water	PCB Aroclors	Total	Aroclor 1260	N/A	ug/L	1	0.100	0.100	0.100	0.100	1	-	-	-	-	0	0%	Yes	--
Seep Water	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	N/A	ug/L	1	-	-	-	-	-	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	4,4'-DDD	N/A	ug/L	1	0.0400	0.0400	0.0400	0.0400	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	4,4'-DDE	N/A	ug/L	1	0.0300	0.0300	0.0300	0.0300	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	4,4'-DDT	N/A	ug/L	1	0.0900	0.0900	0.0900	0.0900	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	Aldrin	N/A	ug/L	1	0.0400	0.0400	0.0400	0.0400	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	BHC (alpha)	N/A	ug/L	1	0.0200	0.0200	0.0200	0.0200	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	BHC (beta)	N/A	ug/L	1	0.100	0.100	0.100	0.100	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	BHC (delta)	N/A	ug/L	1	0.0500	0.0500	0.0500	0.0500	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	BHC (gamma) Lindane	N/A	ug/L	1	0.0300	0.0300	0.0300	0.0300	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	Chlordane (alpha)	N/A	ug/L	1	0.0500	0.0500	0.0500	0.0500	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	Chlordane (gamma)	N/A	ug/L	1	0.0200	0.0200	0.0200	0.0200	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	Dieldrin	N/A	ug/L	1	0.0700	0.0700	0.0700	0.0700	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	Endosulfan I	N/A	ug/L	1	0.0300	0.0300	0.0300	0.0300	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	Endosulfan II	N/A	ug/L	1	0.0500	0.0500	0.0500	0.0500	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	Endosulfan Sulfate	N/A	ug/L	1	0.0700	0.0700	0.0700	0.0700	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	Endrin Aldehyde	N/A	ug/L	1	0.100	0.100	0.100	0.100	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	Endrin	N/A	ug/L	1	0.0800	0.0800	0.0800	0.0800	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	Heptachlor Epoxide	N/A	ug/L	1	0.0300	0.0300	0.0300	0.0300	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	Heptachlor	N/A	ug/L	1	0.0300	0.0300	0.0300	0.0300	1	-	-	-	-	0	0%	Yes	--
Seep Water	Pesticides	Total	Methoxychlor	N/A	ug/L	1	0.500	0.500	0.500	0.500	1	-	-	-	-	0	0%	Yes	--

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(21 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Seep Water	Pesticides	Total	Toxaphene	N/A	ug/L	1	1.50	1.50	1.50	1.50	1	-	-	-	-	0	0%	Yes	--
Seep Water	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	5	13.0	250	110	250	3	1	1	29.0	130	2	40%	Yes	--
Seep Water	NWTPH-Dx	Total	Residual Range Organics	N/A	ug/L	5	23.0	500	110	500	4	-	1	130	130	1	20%	Yes	--
Seep Water	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	5	13.0	250	250	250	5	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	1,2,4-Trichlorobenzene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	1,2-Dichlorobenzene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	1,3-Dichlorobenzene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	5	0.0290	4.76	0.200	4.76	5	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2,4,5-Trichlorophenol	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2,4,6-Trichlorophenol	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2,4-Dichlorophenol	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2,4-Dimethylphenol	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2,4-Dinitrophenol	N/A	ug/L	1	9.52	9.52	9.52	9.52	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2,4-Dinitrotoluene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2,6-Dinitrotoluene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2-Chloronaphthalene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2-Chlorophenol	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2-Methylnaphthalene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2-Methylphenol	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2-Nitroaniline	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	2-Nitrophenol	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	3,3'-Dichlorobenzidine	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	3-Nitroaniline	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	4,6-Dinitro-2-methylphenol	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	4-Bromophenyl Phenyl Ether	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	4-Chloro-3-methylphenol	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	4-Chloroaniline	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	4-Chlorophenyl Phenyl Ether	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	4-Nitroaniline	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	4-Nitrophenol	N/A	ug/L	5	0.280	4.76	2.00	4.76	5	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Acenaphthene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Acenaphthylene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Aniline	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Anthracene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Benzidine	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Benzo(a)anthracene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Benzo(a)pyrene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Benzo(b)fluoranthene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Benzo(g,h,i)perylene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Benzo(k)fluoranthene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Benzoic Acid	N/A	ug/L	1	-	-	-	-	0	-	1	5.88	5.88	1	100%	Yes	--
Seep Water	SVOCs	Total	Benzyl Alcohol	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Bis(2-chloroethoxy)methane	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Bis(2-chloroethyl) Ether	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Bis(2-chloroisopropyl) Ether	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	ug/L	1	23.8	23.8	23.8	23.8	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Butyl Benzyl Phthalate	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Carbazole	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Chrysene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Dibenz(a,h)anthracene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Dibenzofuran	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Diethyl Phthalate	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Dimethyl Phthalate	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Di-n-butyl Phthalate	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Di-n-octyl Phthalate	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(22 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Seep Water	SVOCs	Total	Fluoranthene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Fluorene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Hexachlorobenzene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Hexachlorobutadiene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Hexachlorocyclopentadiene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Hexachloroethane	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Indeno(1,2,3-cd)pyrene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Isophorone	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Naphthalene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Nitrobenzene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	N-Nitrosodimethylamine	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	N-Nitrosodi-n-propylamine	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	N-Nitrosodiphenylamine	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Pentachlorophenol	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Phenanthrene	N/A	ug/L	5	0.0220	4.76	0.200	4.76	5	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Phenol	N/A	ug/L	5	0.0630	4.76	0.490	4.76	5	-	-	-	-	0	0%	Yes	--
Seep Water	SVOCs	Total	Pyrene	N/A	ug/L	1	4.76	4.76	4.76	4.76	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,1,2-Trichloroethane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,1-Dichloroethane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,1-Dichloroethene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,1-Dichloropropene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,2,3-Trichlorobenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,2,3-Trichloropropane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,2,4-Trichlorobenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,2,4-Trimethylbenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	ug/L	1	5.00	5.00	5.00	5.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,2-Dichlorobenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,2-Dichloropropane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,3,5-Trimethylbenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,3-Dichlorobenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,3-Dichloropropane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	2,2-Dichloropropane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	2-Butanone (MEK)	N/A	ug/L	1	10.0	10.0	10.0	10.0	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	2-Chlorotoluene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	2-Hexanone	N/A	ug/L	1	10.0	10.0	10.0	10.0	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	4-Chlorotoluene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	4-Isopropyltoluene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	ug/L	1	10.0	10.0	10.0	10.0	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Acetone	N/A	ug/L	1	10.0	10.0	10.0	10.0	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Benzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Bromobenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Bromochloromethane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Bromodichloromethane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Bromoform	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Bromomethane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Carbon Disulfide	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Carbon Tetrachloride	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Chlorobenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(23 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Seep Water	VOCs	Total	Chloroethane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Chloroform	N/A	ug/L	5	0.0820	1.00	0.500	1.00	3	-	2	0.740	2.80	2	40%	Yes	--
Seep Water	VOCs	Total	Chloromethane	N/A	ug/L	1	5.00	5.00	5.00	5.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	cis-1,2-Dichloroethene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	cis-1,3-Dichloropropene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Dibromochloromethane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Dibromomethane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Dichlorodifluoromethane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	ug/L	1	5.00	5.00	5.00	5.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Ethylbenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Hexachlorobutadiene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Isopropylbenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	m,p-Xylenes	N/A	ug/L	1	2.00	2.00	2.00	2.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Naphthalene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	n-Butylbenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	n-Propylbenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	o-Xylene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	sec-Butylbenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Styrene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	tert-Butylbenzene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	5	0.0970	1.00	0.500	1.00	2	1	2	0.150	4.40	3	60%	Yes	--
Seep Water	VOCs	Total	Toluene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	trans-1,2-Dichloroethene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	trans-1,3-Dichloropropene	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Trichloroethene (TCE)	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Trichlorofluoromethane	N/A	ug/L	1	1.00	1.00	1.00	1.00	1	-	-	-	-	0	0%	Yes	--
Seep Water	VOCs	Total	Vinyl Chloride	N/A	ug/L	5	0.0440	1.00	0.500	1.00	5	-	-	-	-	0	0%	Yes	--
Surface Water	Metals	Total	Arsenic	N/A	ug/L	4	1.10	1.10	1.10	1.10	1	-	3	0.800	1.17	3	75%	Yes	--
Surface Water	Metals	Total	Iron	N/A	ug/L	4	-	-	-	-	0	-	4	167	446	4	100%	Yes	--
Surface Water	Metals	Total	Lead	N/A	ug/L	4	-	-	-	-	0	-	4	0.105	0.407	4	100%	Yes	--
Surface Water	Metals	Total	Manganese	N/A	ug/L	4	-	-	-	-	0	-	4	5.90	13.6	4	100%	Yes	--
Surface Water	Metals	Total	Mercury	N/A	ug/L	1	0.0300	0.0300	0.200	0.200	1	-	-	-	-	0	0%	Yes	--
Surface Water	Metals	Dissolved	Arsenic	N/A	ug/L	4	-	-	-	-	0	-	4	0.800	1.01	4	100%	Yes	--
Surface Water	Metals	Dissolved	Calcium	N/A	ug/L	2	-	-	-	-	0	-	2	19,900	20,500	2	100%	Yes	--
Surface Water	Metals	Dissolved	Iron	N/A	ug/L	4	4.00	20.0	20.0	20.0	3	1	-	9.20	9.20	1	25%	Yes	--
Surface Water	Metals	Dissolved	Lead	N/A	ug/L	4	0.00900	0.00900	0.0300	0.0500	1	3	-	0.0100	0.0160	3	75%	Yes	--
Surface Water	Metals	Dissolved	Magnesium	N/A	ug/L	2	-	-	-	-	0	-	2	6,190	6,330	2	100%	Yes	--
Surface Water	Metals	Dissolved	Manganese	N/A	ug/L	4	-	-	-	-	0	-	4	0.490	1.01	4	100%	Yes	--
Surface Water	Metals	Dissolved	Mercury	N/A	ug/L	1	0.0300	0.0300	0.200	0.200	1	-	-	-	-	0	0%	Yes	--
Surface Water	Metals	Dissolved	Potassium	N/A	ug/L	2	-	-	2,000	2,000	0	2	-	1,490	1,510	2	100%	Yes	--
Surface Water	Metals	Dissolved	Sodium	N/A	ug/L	2	-	-	-	-	0	-	2	7,630	7,900	2	100%	Yes	--
Surface Water	Butyltins	Total	Dibutyltin	N/A	ug/L	4	0.00730	0.00810	0.0500	0.0500	4	-	-	-	-	0	0%	Yes	--
Surface Water	Butyltins	Total	Monobutyltin	N/A	ug/L	4	0.0110	0.0290	0.0500	0.0870	4	-	-	-	-	0	0%	Yes	--
Surface Water	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	4	12.0	120	100	120	2	2	-	26.0	30.0	2	50%	Yes	--
Surface Water	NWTPH-Dx	Total	Residual Range Organics	N/A	ug/L	4	20.0	120	100	120	4	-	-	-	-	0	0%	Yes	--
Surface Water	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	4	13.0	13.0	250	250	4	-	-	-	-	0	0%	Yes	--
Surface Water	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	4	0.0290	0.0310	0.200	0.210	4	-	-	-	-	0	0%	Yes	--
Surface Water	SVOCs	Total	4-Nitrophenol	N/A	ug/L	4	0.280	0.300	2.00	2.10	4	-	-	-	-	0	0%	Yes	--
Surface Water	SVOCs	Total	Phenanthrene	N/A	ug/L	4	0.0220	0.0230	0.200	0.210	4	-	-	-	-	0	0%	Yes	--
Surface Water	SVOCs	Total	Phenol	N/A	ug/L	4	0.0630	0.0660	0.480	0.530	4	-	-	-	-	0	0%	Yes	--
Surface Water	VOCs	Total	Chloroform	N/A	ug/L	4	0.0820	0.0820	0.500	0.500	4	-	-	-	-	0	0%	Yes	--
Surface Water	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	4	0.0970	0.0970	0.500	0.500	4	-	-	-	-	0	0%	Yes	--
Surface Water	VOCs	Total	Vinyl Chloride	N/A	ug/L	4	0.0440	0.0440	0.500	0.500	4	-	-	-	-	0	0%	Yes	--

Notes

Table I-1
Data Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(24 of 24)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]

(1) Only evaluated for analytes with a sample size of 20 or more.
If all samples were NDs (detection rate=0%), or if there was only one distinct detected result, or if there were four or fewer samples and the data set contained NDs, the mean and standard deviation are not shown.
If there were two or more distinct detected results, but not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.
Minimum and maximum detected values are not shown if all samples were NDs.
Minimum and maximum MDLs/MRLs for NDs are not shown if all samples had detected results.
The potentially mass wasting soil subset is comprised of the following samples: BIL01USE through BIL09USE, BIL13SSI, and L-01 through L-04.

'--' = Not evaluated
% = percent
Max = maximum
MDL = method detection limit
mg/kg = milligrams per kilogram
Min = minimum
MRL = methode reporting limit
MW Soil = Mass Wasting Soil
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SVOC = semi-volatile organic carbon
VOC = volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	Metals	Total	Aluminum	0-1 ft	N/A	mg/kg	58	-	-	-	-	0	-	58	1,530	24,300	58	100%	No	Yes
Soil	Metals	Total	Aluminum	0-3 ft	N/A	mg/kg	75	-	-	-	-	0	-	75	1,530	24,300	75	100%	No	Yes
Soil	Metals	Total	Aluminum	0-10 ft	N/A	mg/kg	78	-	-	-	-	0	-	78	1,530	24,300	78	100%	No	Yes
Soil	Metals	Total	Aluminum	>10 ft	N/A	mg/kg	6	-	-	-	-	0	-	6	7,460	15,600	6	100%	Yes	--
Soil	Metals	Total	Antimony	0-1 ft	N/A	mg/kg	58	0.160	3.54	0.160	4.12	17	24	17	0.0895	13.7	41	71%	No	Yes
Soil	Metals	Total	Antimony	0-3 ft	N/A	mg/kg	75	0.160	4.01	0.160	4.12	20	35	20	0.0700	13.7	55	73%	No	Yes
Soil	Metals	Total	Antimony	0-10 ft	N/A	mg/kg	78	0.160	4.01	0.160	4.12	20	36	22	0.0700	13.7	58	74%	No	Yes
Soil	Metals	Total	Antimony	>10 ft	N/A	mg/kg	6	-	-	0.245	0.303	0	4	2	0.107	0.433	6	100%	Yes	--
Soil	Metals	Total	Arsenic	0-1 ft	N/A	mg/kg	58	0.159	0.159	0.907	1.08	1	3	54	0.613	80.9	57	98%	No	Yes
Soil	Metals	Total	Arsenic	0-3 ft	N/A	mg/kg	75	0.159	0.159	0.907	1.08	1	3	71	0.613	80.9	74	99%	No	Yes
Soil	Metals	Total	Arsenic	0-10 ft	N/A	mg/kg	78	0.159	0.159	0.907	1.08	1	3	74	0.613	80.9	77	99%	No	Yes
Soil	Metals	Total	Arsenic	>10 ft	N/A	mg/kg	6	-	-	-	-	0	-	6	1.32	9.82	6	100%	Yes	--
Soil	Metals	Total	Barium	0-1 ft	N/A	mg/kg	58	-	-	-	-	0	-	58	10.7	133	58	100%	No	Yes
Soil	Metals	Total	Barium	0-3 ft	N/A	mg/kg	75	-	-	-	-	0	-	75	10.7	138	75	100%	No	Yes
Soil	Metals	Total	Barium	0-10 ft	N/A	mg/kg	78	-	-	-	-	0	-	78	10.7	138	78	100%	No	Yes
Soil	Metals	Total	Barium	>10 ft	N/A	mg/kg	6	-	-	-	-	0	-	6	41.8	97.3	6	100%	Yes	--
Soil	Metals	Total	Beryllium	0-1 ft	N/A	mg/kg	58	0.147	0.191	0.248	1.23	31	24	3	0.0587	0.630	27	47%	No	Yes
Soil	Metals	Total	Beryllium	0-3 ft	N/A	mg/kg	75	0.147	0.191	0.248	1.23	31	36	8	0.0587	0.630	44	59%	No	Yes
Soil	Metals	Total	Beryllium	0-10 ft	N/A	mg/kg	78	0.147	0.191	0.248	1.23	31	36	11	0.0587	0.630	47	60%	No	Yes
Soil	Metals	Total	Beryllium	>10 ft	N/A	mg/kg	6	-	-	-	-	0	-	6	0.258	0.488	6	100%	Yes	--
Soil	Metals	Total	Cadmium	0-1 ft	N/A	mg/kg	58	0.0122	0.0129	0.248	0.540	5	4	49	0.0561	17.3	53	91%	No	Yes
Soil	Metals	Total	Cadmium	0-3 ft	N/A	mg/kg	75	0.0122	0.0153	0.248	0.540	8	4	63	0.0561	17.3	67	89%	No	Yes
Soil	Metals	Total	Cadmium	0-10 ft	N/A	mg/kg	78	0.0122	0.0153	0.248	0.540	11	4	63	0.0561	17.3	67	86%	No	Yes
Soil	Metals	Total	Cadmium	>10 ft	N/A	mg/kg	6	0.0121	0.0150	0.245	0.303	6	-	-	-	-	0	0%	Yes	--
Soil	Metals	Total	Chromium	0-1 ft	N/A	mg/kg	61	-	-	-	-	0	-	61	5.27	2,650	61	100%	No	Yes
Soil	Metals	Total	Chromium	0-3 ft	N/A	mg/kg	78	-	-	-	-	0	-	78	5.27	2,650	78	100%	No	Yes
Soil	Metals	Total	Chromium	0-10 ft	N/A	mg/kg	81	-	-	-	-	0	-	81	5.27	2,650	81	100%	No	Yes
Soil	Metals	Total	Chromium	>10 ft	N/A	mg/kg	6	-	-	-	-	0	-	6	10.5	23.6	6	100%	Yes	--
Soil	Metals	Total	Cobalt	0-1 ft	N/A	mg/kg	58	-	-	-	-	0	-	58	2.52	25.0	58	100%	No	Yes
Soil	Metals	Total	Cobalt	0-3 ft	N/A	mg/kg	75	-	-	-	-	0	-	75	2.52	25.0	75	100%	No	Yes
Soil	Metals	Total	Cobalt	0-10 ft	N/A	mg/kg	78	-	-	-	-	0	-	78	2.52	25.0	78	100%	No	Yes
Soil	Metals	Total	Cobalt	>10 ft	N/A	mg/kg	6	-	-	-	-	0	-	6	11.4	18.7	6	100%	Yes	--
Soil	Metals	Total	Copper	0-1 ft	N/A	mg/kg	58	-	-	-	-	0	-	58	13.2	319	58	100%	No	Yes
Soil	Metals	Total	Copper	0-3 ft	N/A	mg/kg	75	-	-	-	-	0	-	75	13.2	319	75	100%	No	Yes
Soil	Metals	Total	Copper	0-10 ft	N/A	mg/kg	78	-	-	-	-	0	-	78	13.2	319	78	100%	No	Yes
Soil	Metals	Total	Copper	>10 ft	N/A	mg/kg	6	-	-	-	-	0	-	6	26.7	67.6	6	100%	Yes	--
Soil	Metals	Total	Lead	0-1 ft	<250um	mg/kg	8	-	-	-	-	0	-	8	53.9	921	8	100%	No	--
Soil	Metals	Total	Lead	0-1 ft	<2mm	mg/kg	8	-	-	-	-	0	-	8	27.5	768	8	100%	No	--
Soil	Metals	Total	Lead	0-1 ft	N/A	mg/kg	61	-	-	-	-	0	-	61	8.58	3,260	61	100%	No	Yes
Soil	Metals	Total	Lead	0-3 ft	<250um	mg/kg	16	-	-	9.80	10.0	0	4	12	6.60	921	16	100%	No	--
Soil	Metals	Total	Lead	0-3 ft	<2mm	mg/kg	16	-	-	8.20	9.90	0	4	12	6.50	768	16	100%	No	--
Soil	Metals	Total	Lead	0-3 ft	N/A	mg/kg	78	-	-	-	-	0	-	78	8.58	3,260	78	100%	No	Yes
Soil	Metals	Total	Lead	0-10 ft	<250um	mg/kg	16	-	-	9.80	10.0	0	4	12	6.60	921	16	100%	No	--
Soil	Metals	Total	Lead	0-10 ft	<2mm	mg/kg	16	-	-	8.20	9.90	0	4	12	6.50	768	16	100%	No	--
Soil	Metals	Total	Lead	0-10 ft	N/A	mg/kg	81	-	-	-	-	0	-	81	5.24	3,260	81	100%	No	Yes
Soil	Metals	Total	Lead	>10 ft	N/A	mg/kg	6	-	-	-	-	0	-	6	2.60	6.64	6	100%	Yes	--
Soil	Metals	Total	Manganese	0-1 ft	N/A	mg/kg	58	-	-	-	-	0	-	58	167	789	58	100%	No	Yes
Soil	Metals	Total	Manganese	0-3 ft	N/A	mg/kg	75	-	-	-	-	0	-	75	167	816	75	100%	No	Yes
Soil	Metals	Total	Manganese	0-10 ft	N/A	mg/kg	78	-	-	-	-	0	-	78	167	818	78	100%	No	Yes
Soil	Metals	Total	Manganese	>10 ft	N/A	mg/kg	6	-	-	-	-	0	-	6	380	599	6	100%	Yes	--
Soil	Metals	Total	Mercury	0-1 ft	N/A	mg/kg	58	0.00528	0.0306	0.0196	0.0483	15	15	28	0.0114	0.723	43	74%	No	Yes
Soil	Metals	Total	Mercury	0-3 ft	N/A	mg/kg	75	0.00528	0.0338	0.0196	0.0514	17	19	39	0.0114	0.723	58	77%	No	Yes
Soil	Metals	Total	Mercury	0-10 ft	N/A	mg/kg	78	0.00528	0.0338	0.0196	0.0514	17	20	41	0.0114	0.723	61	78%	No	Yes
Soil	Metals	Total	Mercury	>10 ft	N/A	mg/kg	6	-	-	0.0222	0.0233	0	3	3	0.0201	0.0544	6	100%	Yes	--
Soil	Metals	Total	Nickel	0-1 ft	N/A	mg/kg	58	-	-	-	-	0	-	58	4.79	1,060	58	100%	No	Yes
Soil	Metals	Total	Nickel	0-3 ft	N/A	mg/kg	75	-	-	-	-	0	-	75	4.79	1,060	75	100%	No	Yes
Soil	Metals	Total	Nickel	0-10 ft	N/A	mg/kg	78	-	-	-	-	0	-	78	4.79	1,060	78	100%	No	Yes
Soil	Metals	Total	Nickel	>10 ft	N/A	mg/kg	6	-	-	-	-	0	-	6	12.7	24.4	6	100%	Yes	--
Soil	Metals	Total	Selenium	0-1 ft	N/A	mg/kg	58	0.0781	0.500	0.248	4.12	28	27	3	0.175	0.900	30	52%	No	Yes
Soil	Metals	Total	Selenium	0-3 ft	N/A	mg/kg	75	0.0781	0.517	0.248	4.12	32	38	5	0.175	0.900	43	57%	No	Yes

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(2 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	Metals	Total	Selenium	0-10 ft	N/A	mg/kg	78	0.0781	0.517	0.248	4.12	32	38	8	0.175	0.900	46	59%	No	Yes
Soil	Metals	Total	Selenium	>10 ft	N/A	mg/kg	6	-	-	0.245	0.245	0	1	5	0.180	0.602	6	100%	Yes	--
Soil	Metals	Total	Silver	0-1 ft	N/A	mg/kg	58	0.0440	0.0524	0.454	0.687	3	36	19	0.0571	0.431	55	95%	No	Yes
Soil	Metals	Total	Silver	0-3 ft	N/A	mg/kg	75	0.0440	0.0524	0.0680	0.687	3	49	23	0.0450	0.431	72	96%	No	Yes
Soil	Metals	Total	Silver	0-10 ft	N/A	mg/kg	78	0.0440	0.0524	0.0680	0.687	3	51	24	0.0450	0.431	75	96%	No	Yes
Soil	Metals	Total	Silver	>10 ft	N/A	mg/kg	6	-	-	0.245	0.303	0	6	-	0.103	0.158	6	100%	Yes	--
Soil	Metals	Total	Thallium	0-1 ft	N/A	mg/kg	58	0.0429	0.0558	0.248	0.687	12	33	13	0.0288	0.239	46	79%	No	Yes
Soil	Metals	Total	Thallium	0-3 ft	N/A	mg/kg	75	0.0429	0.0558	0.248	0.687	12	45	18	0.0288	0.255	63	84%	No	Yes
Soil	Metals	Total	Thallium	0-10 ft	N/A	mg/kg	78	0.0429	0.0558	0.248	0.687	12	48	18	0.0288	0.255	66	85%	No	Yes
Soil	Metals	Total	Thallium	>10 ft	N/A	mg/kg	6	-	-	0.245	0.303	0	6	-	0.0765	0.180	6	100%	Yes	--
Soil	Metals	Total	Vanadium	0-1 ft	N/A	mg/kg	58	-	-	-	-	0	-	58	6.89	84.7	58	100%	No	Yes
Soil	Metals	Total	Vanadium	0-3 ft	N/A	mg/kg	75	-	-	-	-	0	-	75	6.89	89.1	75	100%	No	Yes
Soil	Metals	Total	Vanadium	0-10 ft	N/A	mg/kg	78	-	-	-	-	0	-	78	6.89	89.1	78	100%	No	Yes
Soil	Metals	Total	Vanadium	>10 ft	N/A	mg/kg	6	-	-	-	-	0	-	6	45.0	60.3	6	100%	Yes	--
Soil	Metals	Total	Zinc	0-1 ft	N/A	mg/kg	58	-	-	-	-	0	-	58	30.3	1,160	58	100%	No	Yes
Soil	Metals	Total	Zinc	0-3 ft	N/A	mg/kg	75	-	-	-	-	0	-	75	30.3	1,160	75	100%	No	Yes
Soil	Metals	Total	Zinc	0-10 ft	N/A	mg/kg	78	-	-	-	-	0	-	78	30.3	1,160	78	100%	No	Yes
Soil	Metals	Total	Zinc	>10 ft	N/A	mg/kg	6	-	-	-	-	0	-	6	35.1	54.1	6	100%	Yes	--
Soil	Butyltins	Total	Dibutyltin	0-1 ft	N/A	ug/kg	47	0.270	0.842	1.20	2.62	29	1	17	0.800	210	18	38%	No	Yes
Soil	Butyltins	Total	Dibutyltin	0-3 ft	N/A	ug/kg	62	0.270	0.887	1.20	2.64	44	1	17	0.800	210	18	29%	No	Yes
Soil	Butyltins	Total	Dibutyltin	0-10 ft	N/A	ug/kg	62	0.270	0.887	1.20	2.64	44	1	17	0.800	210	18	29%	No	Yes
Soil	Butyltins	Total	Dibutyltin	>10 ft	N/A	ug/kg	5	-	-	-	-	0	-	5	3.62	28.3	5	100%	Yes	--
Soil	Butyltins	Total	Monobutyltin	0-1 ft	N/A	ug/kg	47	0.240	1.86	1.20	3.49	25	4	18	0.420	108	22	47%	No	Yes
Soil	Butyltins	Total	Monobutyltin	0-3 ft	N/A	ug/kg	62	0.240	1.87	1.20	3.52	40	4	18	0.420	108	22	35%	No	Yes
Soil	Butyltins	Total	Monobutyltin	0-10 ft	N/A	ug/kg	62	0.240	1.87	1.20	3.52	40	4	18	0.420	108	22	35%	No	Yes
Soil	Butyltins	Total	Monobutyltin	>10 ft	N/A	ug/kg	5	-	-	-	-	0	-	5	6.28	13.0	5	100%	Yes	--
Soil	Butyltins	Total	Tetrabutyltin	0-1 ft	N/A	ug/kg	34	0.445	0.853	1.20	2.27	33	-	1	3.99	3.99	1	3%	No	No
Soil	Butyltins	Total	Tetrabutyltin	0-3 ft	N/A	ug/kg	44	0.445	0.910	1.20	2.42	43	-	1	3.99	3.99	1	2%	No	No
Soil	Butyltins	Total	Tetrabutyltin	0-10 ft	N/A	ug/kg	44	0.445	0.910	1.20	2.42	43	-	1	3.99	3.99	1	2%	No	No
Soil	Butyltins	Total	Tetrabutyltin	>10 ft	N/A	ug/kg	5	0.843	0.930	2.24	2.48	5	-	-	-	-	0	0%	Yes	--
Soil	Butyltins	Total	Tributyltin	0-1 ft	N/A	ug/kg	47	0.340	1.53	1.20	3.49	31	2	14	1.65	1,860	16	34%	No	Yes
Soil	Butyltins	Total	Tributyltin	0-3 ft	N/A	ug/kg	62	0.340	1.53	1.20	3.52	46	2	14	1.65	1,860	16	26%	No	Yes
Soil	Butyltins	Total	Tributyltin	0-10 ft	N/A	ug/kg	62	0.340	1.53	1.20	3.52	46	2	14	1.65	1,860	16	26%	No	Yes
Soil	Butyltins	Total	Tributyltin	>10 ft	N/A	ug/kg	5	1.04	1.14	2.99	3.30	4	1	-	2.58	2.58	1	20%	Yes	--
Soil	Herbicides	Total	2,4,5-T	0-1 ft	N/A	ug/kg	12	1.26	1.58	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4,5-T	0-3 ft	N/A	ug/kg	12	1.26	1.58	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4,5-T	0-10 ft	N/A	ug/kg	12	1.26	1.58	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-1 ft	N/A	ug/kg	12	1.84	2.31	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-3 ft	N/A	ug/kg	12	1.84	2.31	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-10 ft	N/A	ug/kg	12	1.84	2.31	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4-D	0-1 ft	N/A	ug/kg	12	0.476	5.68	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4-D	0-3 ft	N/A	ug/kg	12	0.476	5.68	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4-D	0-10 ft	N/A	ug/kg	12	0.476	5.68	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4-DB	0-1 ft	N/A	ug/kg	12	0.568	1.01	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4-DB	0-3 ft	N/A	ug/kg	12	0.568	1.01	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	2,4-DB	0-10 ft	N/A	ug/kg	12	0.568	1.01	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	4-Nitrophenol	0-1 ft	N/A	ug/kg	12	1.27	1.60	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	4-Nitrophenol	0-3 ft	N/A	ug/kg	12	1.27	1.60	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	4-Nitrophenol	0-10 ft	N/A	ug/kg	12	1.27	1.60	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dalapon	0-1 ft	N/A	ug/kg	12	1.76	2.20	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dalapon	0-3 ft	N/A	ug/kg	12	1.76	2.20	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dalapon	0-10 ft	N/A	ug/kg	12	1.76	2.20	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dicamba	0-1 ft	N/A	ug/kg	12	1.40	1.76	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dicamba	0-3 ft	N/A	ug/kg	12	1.40	1.76	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dicamba	0-10 ft	N/A	ug/kg	12	1.40	1.76	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dichloroprop	0-1 ft	N/A	ug/kg	12	0.614	0.770	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dichloroprop	0-3 ft	N/A	ug/kg	12	0.614	0.770	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dichloroprop	0-10 ft	N/A	ug/kg	12	0.614	0.770	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dinoseb	0-1 ft	N/A	ug/kg	12	0.476	0.596	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Dinoseb	0-3 ft	N/A	ug/kg	12	0.476	0.596	5.77	7.23	12	-	-	-	-	0	0%	No	--

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(3 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	Herbicides	Total	Dinoseb	0-10 ft	N/A	ug/kg	12	0.476	0.596	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	MCPA	0-1 ft	N/A	ug/kg	12	0.868	1.09	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	MCPA	0-3 ft	N/A	ug/kg	12	0.868	1.09	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	MCPA	0-10 ft	N/A	ug/kg	12	0.868	1.09	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	MCPP	0-1 ft	N/A	ug/kg	12	1.58	1.98	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	MCPP	0-3 ft	N/A	ug/kg	12	1.58	1.98	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	MCPP	0-10 ft	N/A	ug/kg	12	1.58	1.98	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Pentachlorophenol	0-1 ft	N/A	ug/kg	12	0.673	0.843	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Pentachlorophenol	0-3 ft	N/A	ug/kg	12	0.673	0.843	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Pentachlorophenol	0-10 ft	N/A	ug/kg	12	0.673	0.843	5.77	7.23	12	-	-	-	-	0	0%	No	--
Soil	Pesticides	Total	4,4'-DDD	0-1 ft	N/A	ug/kg	31	0.110	10.0	0.630	10.0	29	2	-	0.690	0.990	2	6%	No	Yes
Soil	Pesticides	Total	4,4'-DDD	0-3 ft	N/A	ug/kg	37	0.110	10.0	0.630	10.0	35	2	-	0.690	0.990	2	5%	No	Yes
Soil	Pesticides	Total	4,4'-DDD	0-10 ft	N/A	ug/kg	37	0.110	10.0	0.630	10.0	35	2	-	0.690	0.990	2	5%	No	Yes
Soil	Pesticides	Total	4,4'-DDD	>10 ft	N/A	ug/kg	5	0.217	0.250	2.13	2.45	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	4,4'-DDE	0-1 ft	N/A	ug/kg	31	0.110	7.80	0.660	7.80	24	6	1	0.250	2.44	7	23%	No	Yes
Soil	Pesticides	Total	4,4'-DDE	0-3 ft	N/A	ug/kg	37	0.110	7.80	0.660	7.80	30	6	1	0.250	2.44	7	19%	No	Yes
Soil	Pesticides	Total	4,4'-DDE	0-10 ft	N/A	ug/kg	37	0.110	7.80	0.660	7.80	30	6	1	0.250	2.44	7	19%	No	Yes
Soil	Pesticides	Total	4,4'-DDE	>10 ft	N/A	ug/kg	5	0.213	0.245	2.13	2.45	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	4,4'-DDT	0-1 ft	N/A	ug/kg	31	0.230	78.0	1.00	78.0	13	3	15	0.436	140	18	58%	No	Yes
Soil	Pesticides	Total	4,4'-DDT	0-3 ft	N/A	ug/kg	37	0.170	78.0	0.990	78.0	15	3	19	0.436	140	22	59%	No	Yes
Soil	Pesticides	Total	4,4'-DDT	0-10 ft	N/A	ug/kg	37	0.170	78.0	0.990	78.0	15	3	19	0.436	140	22	59%	No	Yes
Soil	Pesticides	Total	4,4'-DDT	>10 ft	N/A	ug/kg	5	0.250	0.288	2.13	2.45	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Aldrin	0-1 ft	N/A	ug/kg	31	0.101	5.00	0.630	5.00	30	1	-	4.40	4.40	1	3%	No	No
Soil	Pesticides	Total	Aldrin	0-3 ft	N/A	ug/kg	37	0.101	5.00	0.630	5.00	36	1	-	4.40	4.40	1	3%	No	No
Soil	Pesticides	Total	Aldrin	0-10 ft	N/A	ug/kg	37	0.101	5.00	0.630	5.00	36	1	-	4.40	4.40	1	3%	No	No
Soil	Pesticides	Total	Aldrin	>10 ft	N/A	ug/kg	5	0.110	0.126	1.07	1.22	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	BHC (alpha)	0-1 ft	N/A	ug/kg	31	0.0981	1.12	0.630	5.00	31	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	BHC (alpha)	0-3 ft	N/A	ug/kg	37	0.0981	1.12	0.630	5.00	37	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	BHC (alpha)	0-10 ft	N/A	ug/kg	37	0.0981	1.12	0.630	5.00	37	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	BHC (alpha)	>10 ft	N/A	ug/kg	5	0.107	0.122	1.07	1.22	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	BHC (beta)	0-1 ft	N/A	ug/kg	31	0.109	3.78	0.630	5.00	30	1	-	0.952	0.952	1	3%	No	No
Soil	Pesticides	Total	BHC (beta)	0-3 ft	N/A	ug/kg	37	0.109	3.78	0.630	5.00	36	1	-	0.952	0.952	1	3%	No	No
Soil	Pesticides	Total	BHC (beta)	0-10 ft	N/A	ug/kg	37	0.109	3.78	0.630	5.00	36	1	-	0.952	0.952	1	3%	No	No
Soil	Pesticides	Total	BHC (beta)	>10 ft	N/A	ug/kg	5	0.118	0.136	1.07	1.22	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	BHC (delta)	0-1 ft	N/A	ug/kg	31	0.0740	5.00	0.630	5.00	29	1	1	0.0780	3.03	2	6%	No	Yes
Soil	Pesticides	Total	BHC (delta)	0-3 ft	N/A	ug/kg	37	0.0740	5.00	0.630	5.00	35	1	1	0.0780	3.03	2	5%	No	Yes
Soil	Pesticides	Total	BHC (delta)	0-10 ft	N/A	ug/kg	37	0.0740	5.00	0.630	5.00	35	1	1	0.0780	3.03	2	5%	No	Yes
Soil	Pesticides	Total	BHC (delta)	>10 ft	N/A	ug/kg	5	0.107	0.122	1.07	1.22	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	N/A	ug/kg	31	0.0800	37.0	0.630	37.0	29	-	2	2.17	9.68	2	6%	No	Yes
Soil	Pesticides	Total	BHC (gamma) Lindane	0-3 ft	N/A	ug/kg	37	0.0800	37.0	0.630	37.0	34	1	2	0.200	9.68	3	8%	No	Yes
Soil	Pesticides	Total	BHC (gamma) Lindane	0-10 ft	N/A	ug/kg	37	0.0800	37.0	0.630	37.0	34	1	2	0.200	9.68	3	8%	No	Yes
Soil	Pesticides	Total	BHC (gamma) Lindane	>10 ft	N/A	ug/kg	5	0.128	0.147	1.07	1.22	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Chlordane (alpha)	0-1 ft	N/A	ug/kg	19	0.100	5.00	0.630	5.00	16	3	-	0.660	1.50	3	16%	No	--
Soil	Pesticides	Total	Chlordane (alpha)	0-3 ft	N/A	ug/kg	25	0.100	5.00	0.630	5.00	22	3	-	0.660	1.50	3	12%	No	Yes
Soil	Pesticides	Total	Chlordane (alpha)	0-10 ft	N/A	ug/kg	25	0.100	5.00	0.630	5.00	22	3	-	0.660	1.50	3	12%	No	Yes
Soil	Pesticides	Total	Chlordane (alpha)	>10 ft	N/A	ug/kg	5	0.115	0.132	1.07	1.22	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Chlordane (gamma)	0-1 ft	N/A	ug/kg	19	0.0900	9.90	0.630	9.90	13	-	6	7.60	97.0	6	32%	No	--
Soil	Pesticides	Total	Chlordane (gamma)	0-3 ft	N/A	ug/kg	25	0.0900	9.90	0.630	9.90	15	3	7	0.610	97.0	10	40%	No	Yes
Soil	Pesticides	Total	Chlordane (gamma)	0-10 ft	N/A	ug/kg	25	0.0900	9.90	0.630	9.90	15	3	7	0.610	97.0	10	40%	No	Yes
Soil	Pesticides	Total	Chlordane (gamma)	>10 ft	N/A	ug/kg	5	0.129	0.148	1.07	1.22	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Chlordane (technical)	0-1 ft	N/A	ug/kg	12	1.34	11.2	9.50	19.8	12	-	-	-	-	0	0%	No	--
Soil	Pesticides	Total	Chlordane (technical)	0-3 ft	N/A	ug/kg	12	1.34	11.2	9.50	19.8	12	-	-	-	-	0	0%	No	--
Soil	Pesticides	Total	Chlordane (technical)	0-10 ft	N/A	ug/kg	12	1.34	11.2	9.50	19.8	12	-	-	-	-	0	0%	No	--
Soil	Pesticides	Total	Dieldrin	0-1 ft	N/A	ug/kg	31	0.140	31.0	0.630	31.0	29	2	-	0.428	0.823	2	6%	No	Yes
Soil	Pesticides	Total	Dieldrin	0-3 ft	N/A	ug/kg	37	0.140	31.0	0.630	31.0	35	2	-	0.428	0.823	2	5%	No	Yes
Soil	Pesticides	Total	Dieldrin	0-10 ft	N/A	ug/kg	37	0.140	31.0	0.630	31.0	35	2	-	0.428	0.823	2	5%	No	Yes
Soil	Pesticides	Total	Dieldrin	>10 ft	N/A	ug/kg	5	0.259	0.298	2.13	2.45	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Endosulfan I	0-1 ft	N/A	ug/kg	31	0.0630	9.50	0.630	9.50	29	-	2	2.20	6.45	2	6%	No	Yes
Soil	Pesticides	Total	Endosulfan I	0-3 ft	N/A	ug/kg	37	0.0630	9.50	0.630	9.50	32	2	3	0.140	6.45	5	14%	No	Yes
Soil	Pesticides	Total	Endosulfan I	0-10 ft	N/A	ug/kg	37	0.0630	9.50	0.630	9.50	32	2	3	0.140	6.45	5	14%	No	Yes

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(4 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	Pesticides	Total	Endosulfan I	>10 ft	N/A	ug/kg	5	0.119	0.137	1.07	1.22	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Endosulfan II	0-1 ft	N/A	ug/kg	31	0.140	8.40	0.630	8.40	28	3	-	0.240	1.99	3	10%	No	Yes
Soil	Pesticides	Total	Endosulfan II	0-3 ft	N/A	ug/kg	37	0.140	8.40	0.630	8.40	34	3	-	0.240	1.99	3	8%	No	Yes
Soil	Pesticides	Total	Endosulfan II	0-10 ft	N/A	ug/kg	37	0.140	8.40	0.630	8.40	34	3	-	0.240	1.99	3	8%	No	Yes
Soil	Pesticides	Total	Endosulfan II	>10 ft	N/A	ug/kg	5	0.272	0.312	2.13	2.45	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Endosulfan Sulfate	0-1 ft	N/A	ug/kg	31	0.110	5.00	0.630	5.00	25	4	2	0.577	3.30	6	19%	No	Yes
Soil	Pesticides	Total	Endosulfan Sulfate	0-3 ft	N/A	ug/kg	37	0.110	5.00	0.630	5.00	31	4	2	0.577	3.30	6	16%	No	Yes
Soil	Pesticides	Total	Endosulfan Sulfate	0-10 ft	N/A	ug/kg	37	0.110	5.00	0.630	5.00	31	4	2	0.577	3.30	6	16%	No	Yes
Soil	Pesticides	Total	Endosulfan Sulfate	>10 ft	N/A	ug/kg	5	0.509	0.585	2.13	2.45	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Endrin Aldehyde	0-1 ft	N/A	ug/kg	31	0.120	9.60	0.630	9.60	27	2	2	2.02	16.0	4	13%	No	Yes
Soil	Pesticides	Total	Endrin Aldehyde	0-3 ft	N/A	ug/kg	37	0.120	9.60	0.630	9.60	32	2	3	1.90	16.0	5	14%	No	Yes
Soil	Pesticides	Total	Endrin Aldehyde	0-10 ft	N/A	ug/kg	37	0.120	9.60	0.630	9.60	32	2	3	1.90	16.0	5	14%	No	Yes
Soil	Pesticides	Total	Endrin Aldehyde	>10 ft	N/A	ug/kg	5	0.618	0.710	2.13	2.45	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Endrin Ketone	0-1 ft	N/A	ug/kg	31	0.0930	21.0	0.630	21.0	27	2	2	1.87	13.0	4	13%	No	Yes
Soil	Pesticides	Total	Endrin Ketone	0-3 ft	N/A	ug/kg	37	0.0930	21.0	0.630	21.0	33	2	2	1.87	13.0	4	11%	No	Yes
Soil	Pesticides	Total	Endrin Ketone	0-10 ft	N/A	ug/kg	37	0.0930	21.0	0.630	21.0	33	2	2	1.87	13.0	4	11%	No	Yes
Soil	Pesticides	Total	Endrin Ketone	>10 ft	N/A	ug/kg	5	0.119	0.137	2.13	2.45	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Endrin	0-1 ft	N/A	ug/kg	31	0.0940	6.80	0.630	6.80	28	1	2	3.00	17.0	3	10%	No	Yes
Soil	Pesticides	Total	Endrin	0-3 ft	N/A	ug/kg	37	0.0940	6.80	0.630	6.80	33	1	3	2.10	17.0	4	11%	No	Yes
Soil	Pesticides	Total	Endrin	0-10 ft	N/A	ug/kg	37	0.0940	6.80	0.630	6.80	33	1	3	2.10	17.0	4	11%	No	Yes
Soil	Pesticides	Total	Endrin	>10 ft	N/A	ug/kg	5	0.133	0.153	2.13	2.45	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Heptachlor Epoxide	0-1 ft	N/A	ug/kg	31	0.0840	5.00	0.630	5.00	31	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Heptachlor Epoxide	0-3 ft	N/A	ug/kg	37	0.0840	5.00	0.630	5.00	36	1	-	0.634	0.634	1	3%	No	No
Soil	Pesticides	Total	Heptachlor Epoxide	0-10 ft	N/A	ug/kg	37	0.0840	5.00	0.630	5.00	36	1	-	0.634	0.634	1	3%	No	No
Soil	Pesticides	Total	Heptachlor Epoxide	>10 ft	N/A	ug/kg	5	0.146	0.168	1.07	1.22	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Heptachlor	0-1 ft	N/A	ug/kg	31	0.0981	5.00	0.660	5.00	27	4	-	0.180	2.90	4	13%	No	Yes
Soil	Pesticides	Total	Heptachlor	0-3 ft	N/A	ug/kg	37	0.0981	5.00	0.660	5.00	33	4	-	0.180	2.90	4	11%	No	Yes
Soil	Pesticides	Total	Heptachlor	0-10 ft	N/A	ug/kg	37	0.0981	5.00	0.660	5.00	33	4	-	0.180	2.90	4	11%	No	Yes
Soil	Pesticides	Total	Heptachlor	>10 ft	N/A	ug/kg	5	0.107	0.122	1.07	1.22	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Methoxychlor	0-1 ft	N/A	ug/kg	31	0.141	11.2	0.630	19.8	29	-	2	1.00	1.20	2	6%	No	Yes
Soil	Pesticides	Total	Methoxychlor	0-3 ft	N/A	ug/kg	37	0.141	11.2	0.630	19.8	35	-	2	1.00	1.20	2	5%	No	Yes
Soil	Pesticides	Total	Methoxychlor	0-10 ft	N/A	ug/kg	37	0.141	11.2	0.630	19.8	35	-	2	1.00	1.20	2	5%	No	Yes
Soil	Pesticides	Total	Methoxychlor	>10 ft	N/A	ug/kg	5	0.153	0.176	10.7	12.2	5	-	-	-	-	0	0%	Yes	--
Soil	Pesticides	Total	Toxaphene	0-1 ft	N/A	ug/kg	31	4.80	2,900	43.0	2,900	31	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Toxaphene	0-3 ft	N/A	ug/kg	37	4.80	2,900	43.0	2,900	37	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Toxaphene	0-10 ft	N/A	ug/kg	37	4.80	2,900	43.0	2,900	37	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Toxaphene	>10 ft	N/A	ug/kg	5	10.7	12.2	107	122	5	-	-	-	-	0	0%	Yes	--
Soil	PCB Aroclors	Total	Aroclor 1016	0-1 ft	N/A	ug/kg	58	1.08	11.0	6.30	50.0	58	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1016	0-3 ft	N/A	ug/kg	73	1.08	11.0	6.30	50.0	73	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1016	0-10 ft	N/A	ug/kg	73	1.08	11.0	6.30	50.0	73	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1016	>10 ft	N/A	ug/kg	5	2.61	3.00	8.84	10.2	5	-	-	-	-	0	0%	Yes	--
Soil	PCB Aroclors	Total	Aroclor 1221	0-1 ft	N/A	ug/kg	58	2.10	11.0	9.82	100	58	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1221	0-3 ft	N/A	ug/kg	73	2.10	11.0	9.82	100	73	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1221	0-10 ft	N/A	ug/kg	73	2.10	11.0	9.82	100	73	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1221	>10 ft	N/A	ug/kg	5	2.61	3.00	8.84	10.2	5	-	-	-	-	0	0%	Yes	--
Soil	PCB Aroclors	Total	Aroclor 1232	0-1 ft	N/A	ug/kg	58	2.10	11.0	6.30	50.0	58	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1232	0-3 ft	N/A	ug/kg	73	2.10	11.0	6.30	50.0	73	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1232	0-10 ft	N/A	ug/kg	73	2.10	11.0	6.30	50.0	73	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1232	>10 ft	N/A	ug/kg	5	2.61	3.00	8.84	10.2	5	-	-	-	-	0	0%	Yes	--
Soil	PCB Aroclors	Total	Aroclor 1242	0-1 ft	N/A	ug/kg	58	1.97	11.0	6.30	50.0	58	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1242	0-3 ft	N/A	ug/kg	73	1.97	11.0	6.30	50.0	73	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1242	0-10 ft	N/A	ug/kg	73	1.97	11.0	6.30	50.0	73	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1242	>10 ft	N/A	ug/kg	5	2.61	3.00	8.84	10.2	5	-	-	-	-	0	0%	Yes	--
Soil	PCB Aroclors	Total	Aroclor 1248	0-1 ft	N/A	ug/kg	58	2.10	11.0	6.30	50.0	58	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1248	0-3 ft	N/A	ug/kg	73	2.10	11.0	6.30	50.0	73	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1248	0-10 ft	N/A	ug/kg	73	2.10	11.0	6.30	50.0	73	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1248	>10 ft	N/A	ug/kg	5	2.61	3.00	8.84	10.2	5	-	-	-	-	0	0%	Yes	--
Soil	PCB Aroclors	Total	Aroclor 1254	0-1 ft	N/A	ug/kg	58	1.53	2.10	6.30	13.0	52	-	6	160	1,700	6	10%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1254	0-3 ft	N/A	ug/kg	73	1.53	2.10	6.30	13.2	63	-	10	11.0	1,700	10	14%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1254	0-10 ft	N/A	ug/kg	73	1.53	2.10	6.30	13.2	63	-	10	11.0	1,700	10	14%	No	Yes

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(5 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	PCB Aroclors	Total	Aroclor 1254	>10 ft	N/A	ug/kg	5	1.43	1.65	8.84	10.2	5	-	-	-	-	0	0%	Yes	--
Soil	PCB Aroclors	Total	Aroclor 1260	0-1 ft	N/A	ug/kg	58	1.54	2.10	9.82	13.4	6	15	37	2.00	690	52	90%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1260	0-3 ft	N/A	ug/kg	73	1.54	2.10	9.82	13.4	12	19	42	2.00	690	61	84%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1260	0-10 ft	N/A	ug/kg	73	1.54	2.10	9.82	13.4	12	19	42	2.00	690	61	84%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1260	>10 ft	N/A	ug/kg	5	1.43	1.65	8.84	10.2	5	-	-	-	-	0	0%	Yes	--
Soil	PCB Aroclors	Total	Aroclor 1262	0-1 ft	N/A	ug/kg	13	2.10	11.0	6.30	50.0	13	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1262	0-3 ft	N/A	ug/kg	18	2.10	11.0	6.30	50.0	18	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1262	0-10 ft	N/A	ug/kg	18	2.10	11.0	6.30	50.0	18	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1268	0-1 ft	N/A	ug/kg	13	2.10	11.0	6.30	50.0	13	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1268	0-3 ft	N/A	ug/kg	18	2.10	11.0	6.30	50.0	18	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1268	0-10 ft	N/A	ug/kg	18	2.10	11.0	6.30	50.0	18	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	N/A	ug/kg	58	3.08	4.20	19.7	20.6	-	-	-	3.70	2140	52	90%	No	Yes
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-3 ft	N/A	ug/kg	73	3.08	4.20	19.7	26.4	-	-	-	3.70	2140	61	84%	No	Yes
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-10 ft	N/A	ug/kg	73	3.08	4.20	19.7	26.4	-	-	-	3.70	2140	61	84%	No	Yes
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	>10 ft	N/A	ug/kg	5	2.86	3.30	17.7	20.4	-	-	-	-	-	0	0%	Yes	--
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	N/A	mg/kg	57	5.02	13.6	24.9	36.0	7	13	37	3.60	1,090	50	88%	No	Yes
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-3 ft	N/A	mg/kg	74	5.02	14.9	24.9	36.0	11	21	42	3.60	1,440	63	85%	No	Yes
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-10 ft	N/A	mg/kg	77	5.02	14.9	24.9	36.0	14	21	42	3.60	1,440	63	82%	No	Yes
Soil	NWTPH-Dx	Total	Diesel Range Organics	>10 ft	N/A	mg/kg	6	5.14	5.89	26.9	30.8	6	-	-	-	-	0	0%	Yes	--
Soil	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	N/A	mg/kg	57	10.0	26.9	49.9	140	5	6	46	21.0	2,300	52	91%	No	Yes
Soil	NWTPH-Dx	Total	Residual Range Organics	0-3 ft	N/A	mg/kg	74	10.0	29.7	49.9	140	8	14	52	16.0	2,300	66	89%	No	Yes
Soil	NWTPH-Dx	Total	Residual Range Organics	0-10 ft	N/A	mg/kg	77	10.0	29.7	49.9	140	11	14	52	16.0	2,300	66	86%	No	Yes
Soil	NWTPH-Dx	Total	Residual Range Organics	>10 ft	N/A	mg/kg	6	10.2	11.7	53.8	61.6	6	-	-	-	-	0	0%	Yes	--
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	N/A	mg/kg	36	0.121	4.68	2.60	5.20	28	8	-	1.60	3.49	8	22%	No	Yes
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-3 ft	N/A	mg/kg	44	0.121	5.00	2.60	5.20	34	8	2	1.60	3,960	10	23%	No	Yes
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-10 ft	N/A	mg/kg	47	0.121	5.00	2.60	5.20	37	8	2	1.60	3,960	10	21%	No	Yes
Soil	NWTPH-Gx	Total	Gasoline Range Organics	>10 ft	N/A	mg/kg	6	0.136	4.83	4.32	4.83	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	N/A	ug/kg	31	0.880	75.0	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	N/A	ug/kg	39	0.880	75.0	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-10 ft	N/A	ug/kg	42	0.880	75.0	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	>10 ft	N/A	ug/kg	6	0.935	1.04	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-1 ft	N/A	ug/kg	31	0.703	65.0	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-3 ft	N/A	ug/kg	39	0.703	65.0	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-10 ft	N/A	ug/kg	42	0.703	65.0	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2-Dichlorobenzene	>10 ft	N/A	ug/kg	6	0.748	0.836	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-1 ft	N/A	ug/kg	31	0.883	80.0	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-3 ft	N/A	ug/kg	39	0.883	80.0	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-10 ft	N/A	ug/kg	42	0.883	80.0	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,3-Dichlorobenzene	>10 ft	N/A	ug/kg	6	0.939	1.05	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	31	0.871	95.0	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-3 ft	N/A	ug/kg	39	0.871	95.0	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-10 ft	N/A	ug/kg	42	0.871	95.0	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,4-Dichlorobenzene	>10 ft	N/A	ug/kg	6	0.927	1.03	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-1 ft	N/A	ug/kg	31	0.804	150	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-3 ft	N/A	ug/kg	39	0.804	150	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-10 ft	N/A	ug/kg	42	0.804	150	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,5-Trichlorophenol	>10 ft	N/A	ug/kg	6	0.855	0.955	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-1 ft	N/A	ug/kg	31	0.819	90.0	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-3 ft	N/A	ug/kg	39	0.819	90.0	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-10 ft	N/A	ug/kg	42	0.819	90.0	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,6-Trichlorophenol	>10 ft	N/A	ug/kg	6	0.872	0.973	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2,4-Dichlorophenol	0-1 ft	N/A	ug/kg	31	0.919	90.0	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dichlorophenol	0-3 ft	N/A	ug/kg	39	0.919	90.0	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dichlorophenol	0-10 ft	N/A	ug/kg	42	0.919	90.0	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dichlorophenol	>10 ft	N/A	ug/kg	6	0.977	1.09	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2,4-Dimethylphenol	0-1 ft	N/A	ug/kg	31	0.793	280	2.07	1,700	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dimethylphenol	0-3 ft	N/A	ug/kg	39	0.793	280	2.07	1,700	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dimethylphenol	0-10 ft	N/A	ug/kg	42	0.793	280	2.07	1,700	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dimethylphenol	>10 ft	N/A	ug/kg	6	0.843	0.941	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2,4-Dinitrophenol	0-1 ft	N/A	ug/kg	31	2.81	1,800	29.3	6,700	31	-	-	-	-	0	0%	No	No

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(6 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	SVOCs	Total	2,4-Dinitrophenol	0-3 ft	N/A	ug/kg	39	2.81	1,800	29.3	6,700	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrophenol	0-10 ft	N/A	ug/kg	42	2.81	1,800	29.3	6,700	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrophenol	>10 ft	N/A	ug/kg	6	7.70	8.60	55.1	61.5	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-1 ft	N/A	ug/kg	31	1.52	140	6.40	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-3 ft	N/A	ug/kg	39	1.52	140	6.40	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-10 ft	N/A	ug/kg	42	1.52	140	6.40	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrotoluene	>10 ft	N/A	ug/kg	6	1.87	2.09	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-1 ft	N/A	ug/kg	31	1.11	140	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-3 ft	N/A	ug/kg	39	1.11	140	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-10 ft	N/A	ug/kg	42	1.11	140	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,6-Dinitrotoluene	>10 ft	N/A	ug/kg	6	1.18	1.32	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2-Chloronaphthalene	0-1 ft	N/A	ug/kg	31	0.351	180	1.17	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chloronaphthalene	0-3 ft	N/A	ug/kg	39	0.351	180	1.17	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chloronaphthalene	0-10 ft	N/A	ug/kg	42	0.351	180	1.17	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chloronaphthalene	>10 ft	N/A	ug/kg	6	0.744	0.831	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2-Chlorophenol	0-1 ft	N/A	ug/kg	31	0.697	85.0	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chlorophenol	0-3 ft	N/A	ug/kg	39	0.697	85.0	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chlorophenol	0-10 ft	N/A	ug/kg	42	0.697	85.0	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chlorophenol	>10 ft	N/A	ug/kg	6	0.742	0.828	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2-Methylphenol	0-1 ft	N/A	ug/kg	31	0.978	170	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Methylphenol	0-3 ft	N/A	ug/kg	39	0.978	170	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Methylphenol	0-10 ft	N/A	ug/kg	42	0.978	170	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Methylphenol	>10 ft	N/A	ug/kg	6	1.04	1.16	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2-Nitroaniline	0-1 ft	N/A	ug/kg	31	0.563	140	2.07	670	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitroaniline	0-3 ft	N/A	ug/kg	39	0.563	140	2.07	670	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitroaniline	0-10 ft	N/A	ug/kg	42	0.563	140	2.07	670	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitroaniline	>10 ft	N/A	ug/kg	6	0.598	0.668	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2-Nitrophenol	0-1 ft	N/A	ug/kg	31	1.18	130	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitrophenol	0-3 ft	N/A	ug/kg	39	1.18	130	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitrophenol	0-10 ft	N/A	ug/kg	42	1.18	130	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitrophenol	>10 ft	N/A	ug/kg	6	1.26	1.40	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-1 ft	N/A	ug/kg	31	1.29	190	11.7	3,400	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-3 ft	N/A	ug/kg	39	1.29	190	11.7	3,400	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-10 ft	N/A	ug/kg	42	1.29	190	11.7	3,400	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	>10 ft	N/A	ug/kg	6	4.78	5.34	22.0	24.6	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	3-Nitroaniline	0-1 ft	N/A	ug/kg	31	1.99	130	10.4	670	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3-Nitroaniline	0-3 ft	N/A	ug/kg	39	1.99	130	10.4	670	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3-Nitroaniline	0-10 ft	N/A	ug/kg	42	1.99	130	10.4	670	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3-Nitroaniline	>10 ft	N/A	ug/kg	6	3.23	3.61	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-1 ft	N/A	ug/kg	31	1.51	85.0	10.4	3,400	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-3 ft	N/A	ug/kg	39	1.51	85.0	10.4	3,400	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-10 ft	N/A	ug/kg	42	1.51	85.0	10.4	3,400	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	>10 ft	N/A	ug/kg	6	1.98	2.22	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-1 ft	N/A	ug/kg	31	1.40	70.0	6.40	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-3 ft	N/A	ug/kg	39	1.40	70.0	6.40	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-10 ft	N/A	ug/kg	42	1.40	70.0	6.40	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	>10 ft	N/A	ug/kg	6	2.03	2.26	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-1 ft	N/A	ug/kg	31	0.925	110	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-3 ft	N/A	ug/kg	39	0.925	110	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-10 ft	N/A	ug/kg	42	0.925	110	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloro-3-methylphenol	>10 ft	N/A	ug/kg	6	0.984	1.10	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	4-Chloroaniline	0-1 ft	N/A	ug/kg	31	0.963	110	6.40	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloroaniline	0-3 ft	N/A	ug/kg	39	0.963	110	6.40	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloroaniline	0-10 ft	N/A	ug/kg	42	0.963	110	6.40	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloroaniline	>10 ft	N/A	ug/kg	6	1.02	1.14	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-1 ft	N/A	ug/kg	31	1.97	100	6.40	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-3 ft	N/A	ug/kg	39	1.97	100	6.40	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-10 ft	N/A	ug/kg	42	1.97	100	6.40	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	>10 ft	N/A	ug/kg	6	2.37	2.65	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	4-Nitroaniline	0-1 ft	N/A	ug/kg	31	1.99	170	11.7	670	31	-	-	-	-	0	0%	No	No

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(7 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	SVOCs	Total	4-Nitroaniline	0-3 ft	N/A	ug/kg	39	1.99	170	11.7	670	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitroaniline	0-10 ft	N/A	ug/kg	42	1.99	170	11.7	670	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitroaniline	>10 ft	N/A	ug/kg	6	4.52	5.05	22.0	24.6	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	4-Nitrophenol	0-1 ft	N/A	ug/kg	31	2.22	1,500	29.3	3,400	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitrophenol	0-3 ft	N/A	ug/kg	39	2.22	1,500	29.3	3,400	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitrophenol	0-10 ft	N/A	ug/kg	42	2.22	1,500	29.3	3,400	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitrophenol	>10 ft	N/A	ug/kg	6	9.02	10.1	55.1	61.5	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Aniline	0-1 ft	N/A	ug/kg	31	1.50	75.0	10.4	670	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Aniline	0-3 ft	N/A	ug/kg	39	1.50	75.0	10.4	670	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Aniline	0-10 ft	N/A	ug/kg	42	1.50	75.0	10.4	670	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Aniline	>10 ft	N/A	ug/kg	6	2.03	2.26	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Benzidine	0-1 ft	N/A	ug/kg	18	2.21	31.8	10.4	366	18	-	-	-	-	0	0%	No	--
Soil	SVOCs	Total	Benzidine	0-3 ft	N/A	ug/kg	21	2.21	31.8	10.4	366	21	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Benzidine	0-10 ft	N/A	ug/kg	24	2.21	31.8	10.4	366	24	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Benzidine	>10 ft	N/A	ug/kg	6	3.11	3.47	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Benzoic Acid	0-1 ft	N/A	ug/kg	31	4.15	4,800	58.5	6,700	19	9	3	15.3	980	12	39%	No	Yes
Soil	SVOCs	Total	Benzoic Acid	0-3 ft	N/A	ug/kg	39	4.15	4,800	58.5	6,700	27	9	3	15.3	980	12	31%	No	Yes
Soil	SVOCs	Total	Benzoic Acid	0-10 ft	N/A	ug/kg	42	4.15	4,800	58.5	6,700	30	9	3	15.3	980	12	29%	No	Yes
Soil	SVOCs	Total	Benzoic Acid	>10 ft	N/A	ug/kg	6	17.6	19.7	66.1	73.8	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Benzyl Alcohol	0-1 ft	N/A	ug/kg	31	2.06	190	5.18	670	30	-	1	7.81	7.81	1	3%	No	No
Soil	SVOCs	Total	Benzyl Alcohol	0-3 ft	N/A	ug/kg	39	2.06	190	5.18	670	38	-	1	7.81	7.81	1	3%	No	No
Soil	SVOCs	Total	Benzyl Alcohol	0-10 ft	N/A	ug/kg	42	2.06	190	5.18	670	41	-	1	7.81	7.81	1	2%	No	No
Soil	SVOCs	Total	Benzyl Alcohol	>10 ft	N/A	ug/kg	6	2.19	2.45	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-1 ft	N/A	ug/kg	31	1.30	65.0	6.40	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-3 ft	N/A	ug/kg	39	1.30	65.0	6.40	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-10 ft	N/A	ug/kg	42	1.30	65.0	6.40	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	>10 ft	N/A	ug/kg	6	2.12	2.36	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-1 ft	N/A	ug/kg	31	1.63	120	6.40	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-3 ft	N/A	ug/kg	39	1.63	120	6.40	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-10 ft	N/A	ug/kg	42	1.63	120	6.40	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	>10 ft	N/A	ug/kg	6	1.73	1.93	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-1 ft	N/A	ug/kg	31	1.20	90.1	6.40	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-3 ft	N/A	ug/kg	39	1.20	90.1	6.40	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-10 ft	N/A	ug/kg	42	1.20	90.1	6.40	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	>10 ft	N/A	ug/kg	6	8.80	9.83	27.5	30.8	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	N/A	ug/kg	31	1.90	366	20.7	366	10	-	21	170	260,000	21	68%	No	Yes
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-3 ft	N/A	ug/kg	40	1.90	366	20.7	366	11	2	27	15.0	260,000	29	73%	No	Yes
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-10 ft	N/A	ug/kg	43	1.90	366	20.7	366	11	3	29	6.67	260,000	32	74%	No	Yes
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	>10 ft	N/A	ug/kg	6	-	-	23.5	23.6	0	2	4	10.9	266	6	100%	Yes	--
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	N/A	ug/kg	31	1.50	75.0	6.40	340	26	4	1	3.67	124	5	16%	No	Yes
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-3 ft	N/A	ug/kg	39	1.50	75.0	6.40	340	33	4	2	3.67	124	6	15%	No	Yes
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-10 ft	N/A	ug/kg	42	1.50	75.0	6.40	340	36	4	2	3.67	124	6	14%	No	Yes
Soil	SVOCs	Total	Butyl Benzyl Phthalate	>10 ft	N/A	ug/kg	6	2.36	2.63	22.0	24.6	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Carbazole	0-1 ft	N/A	ug/kg	31	2.06	57.1	6.40	375	11	8	12	1.40	530	20	65%	No	Yes
Soil	SVOCs	Total	Carbazole	0-3 ft	N/A	ug/kg	39	1.30	57.1	6.40	375	15	10	14	1.40	530	24	62%	No	Yes
Soil	SVOCs	Total	Carbazole	0-10 ft	N/A	ug/kg	42	1.30	57.1	6.40	375	18	10	14	1.40	530	24	57%	No	Yes
Soil	SVOCs	Total	Carbazole	>10 ft	N/A	ug/kg	6	2.19	2.45	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Dibenzofuran	0-1 ft	N/A	ug/kg	31	0.479	65.0	5.18	340	12	16	3	0.996	220	19	61%	No	Yes
Soil	SVOCs	Total	Dibenzofuran	0-3 ft	N/A	ug/kg	40	0.479	65.0	5.18	340	16	19	5	0.996	485	24	60%	No	Yes
Soil	SVOCs	Total	Dibenzofuran	0-10 ft	N/A	ug/kg	43	0.479	65.0	5.18	340	19	19	5	0.996	485	24	56%	No	Yes
Soil	SVOCs	Total	Dibenzofuran	>10 ft	N/A	ug/kg	6	0.509	0.569	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Diethyl Phthalate	0-1 ft	N/A	ug/kg	31	1.99	180	6.40	340	30	1	-	8.80	8.80	1	3%	No	No
Soil	SVOCs	Total	Diethyl Phthalate	0-3 ft	N/A	ug/kg	39	1.99	180	6.40	340	38	1	-	8.80	8.80	1	3%	No	No
Soil	SVOCs	Total	Diethyl Phthalate	0-10 ft	N/A	ug/kg	42	1.99	180	6.40	340	41	1	-	8.80	8.80	1	2%	No	No
Soil	SVOCs	Total	Diethyl Phthalate	>10 ft	N/A	ug/kg	6	3.98	4.44	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Dimethyl Phthalate	0-1 ft	N/A	ug/kg	31	1.29	90.0	6.40	340	28	3	-	30.0	41.0	3	10%	No	Yes
Soil	SVOCs	Total	Dimethyl Phthalate	0-3 ft	N/A	ug/kg	39	1.29	90.0	6.40	340	36	3	-	30.0	41.0	3	8%	No	Yes
Soil	SVOCs	Total	Dimethyl Phthalate	0-10 ft	N/A	ug/kg	42	1.29	90.0	6.40	340	39	3	-	30.0	41.0	3	7%	No	Yes
Soil	SVOCs	Total	Dimethyl Phthalate	>10 ft	N/A	ug/kg	6	2.16	2.41	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	N/A	ug/kg	31	1.89	637	6.40	732	21	5	5	6.10	280	10	32%	No	Yes

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(8 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-3 ft	N/A	ug/kg	39	1.89	637	6.40	732	25	6	8	3.70	280	14	36%	No	Yes
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-10 ft	N/A	ug/kg	42	1.89	637	6.40	732	28	6	8	3.70	280	14	33%	No	Yes
Soil	SVOCs	Total	Di-n-butyl Phthalate	>10 ft	N/A	ug/kg	6	2.14	12.3	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	N/A	ug/kg	31	1.20	60.0	6.40	340	26	2	3	11.3	127	5	16%	No	Yes
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-3 ft	N/A	ug/kg	39	1.20	60.0	6.40	340	33	3	3	11.3	127	6	15%	No	Yes
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-10 ft	N/A	ug/kg	42	1.20	60.0	6.40	340	35	3	4	11.3	127	7	17%	No	Yes
Soil	SVOCs	Total	Di-n-octyl Phthalate	>10 ft	N/A	ug/kg	6	2.03	2.26	22.0	24.9	4	2	-	4.40	7.06	2	33%	Yes	--
Soil	SVOCs	Total	Hexachlorobenzene	0-1 ft	N/A	ug/kg	31	0.548	110	2.07	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobenzene	0-3 ft	N/A	ug/kg	39	0.548	110	2.07	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobenzene	0-10 ft	N/A	ug/kg	42	0.548	110	2.07	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobenzene	>10 ft	N/A	ug/kg	6	0.583	0.651	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Hexachlorobutadiene	0-1 ft	N/A	ug/kg	31	0.757	70.0	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobutadiene	0-3 ft	N/A	ug/kg	39	0.757	70.0	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobutadiene	0-10 ft	N/A	ug/kg	42	0.757	70.0	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobutadiene	>10 ft	N/A	ug/kg	6	0.805	0.900	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-1 ft	N/A	ug/kg	31	0.822	750	5.18	1,700	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-3 ft	N/A	ug/kg	39	0.822	750	5.18	1,700	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-10 ft	N/A	ug/kg	42	0.822	750	5.18	1,700	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorocyclopentadiene	>10 ft	N/A	ug/kg	6	0.874	0.976	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Hexachloroethane	0-1 ft	N/A	ug/kg	31	1.75	110	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachloroethane	0-3 ft	N/A	ug/kg	39	1.75	110	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachloroethane	0-10 ft	N/A	ug/kg	42	1.75	110	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachloroethane	>10 ft	N/A	ug/kg	6	1.86	2.08	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Isophorone	0-1 ft	N/A	ug/kg	31	0.522	80.0	6.40	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Isophorone	0-3 ft	N/A	ug/kg	39	0.522	80.0	6.40	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Isophorone	0-10 ft	N/A	ug/kg	42	0.522	80.0	6.40	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Isophorone	>10 ft	N/A	ug/kg	6	0.555	0.620	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Nitrobenzene	0-1 ft	N/A	ug/kg	31	1.60	100	6.40	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Nitrobenzene	0-3 ft	N/A	ug/kg	39	1.60	100	6.40	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Nitrobenzene	0-10 ft	N/A	ug/kg	42	1.60	100	6.40	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Nitrobenzene	>10 ft	N/A	ug/kg	6	3.32	3.70	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-1 ft	N/A	ug/kg	31	1.05	310	10.4	1,700	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-3 ft	N/A	ug/kg	39	1.05	310	10.4	1,700	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-10 ft	N/A	ug/kg	42	1.05	310	10.4	1,700	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodimethylamine	>10 ft	N/A	ug/kg	6	3.36	3.75	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-1 ft	N/A	ug/kg	31	1.29	160	5.18	340	31	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-3 ft	N/A	ug/kg	39	1.29	160	5.18	340	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-10 ft	N/A	ug/kg	42	1.29	160	5.18	340	42	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	>10 ft	N/A	ug/kg	6	1.48	1.65	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-1 ft	N/A	ug/kg	31	0.593	110	2.07	340	30	1	-	27.0	27.0	1	3%	No	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-3 ft	N/A	ug/kg	39	0.593	110	2.07	340	38	1	-	27.0	27.0	1	3%	No	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-10 ft	N/A	ug/kg	42	0.593	110	2.07	340	41	1	-	27.0	27.0	1	2%	No	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	>10 ft	N/A	ug/kg	6	0.630	0.704	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	N/A	ug/kg	31	1.22	150	5.18	340	30	1	-	2.46	2.46	1	3%	No	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-3 ft	N/A	ug/kg	39	1.22	150	5.18	340	38	1	-	2.46	2.46	1	3%	No	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-10 ft	N/A	ug/kg	42	1.22	150	5.18	340	41	1	-	2.46	2.46	1	2%	No	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	>10 ft	N/A	ug/kg	6	1.30	1.45	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Pentachlorophenol	0-1 ft	N/A	ug/kg	31	2.01	430	10.4	3,400	29	2	-	11.0	32.0	2	6%	No	Yes
Soil	SVOCs	Total	Pentachlorophenol	0-3 ft	N/A	ug/kg	39	2.01	430	10.4	3,400	37	2	-	11.0	32.0	2	5%	No	Yes
Soil	SVOCs	Total	Pentachlorophenol	0-10 ft	N/A	ug/kg	42	2.01	430	10.4	3,400	40	2	-	11.0	32.0	2	5%	No	No
Soil	SVOCs	Total	Pentachlorophenol	>10 ft	N/A	ug/kg	6	2.14	2.39	11.0	12.3	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Phenol	0-1 ft	N/A	ug/kg	31	0.749	95.0	5.18	1,000	29	2	-	2.00	3.70	2	6%	No	Yes
Soil	SVOCs	Total	Phenol	0-3 ft	N/A	ug/kg	39	0.749	95.0	5.18	1,000	34	4	1	2.00	35.0	5	13%	No	Yes
Soil	SVOCs	Total	Phenol	0-10 ft	N/A	ug/kg	42	0.749	95.0	5.18	1,000	37	4	1	2.00	35.0	5	12%	No	Yes
Soil	SVOCs	Total	Phenol	>10 ft	N/A	ug/kg	6	0.797	0.890	5.51	6.15	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	2-Methylnaphthalene	0-1 ft	N/A	ug/kg	31	0.183	60.0	1.17	340	15	9	7	1.29	150	16	52%	No	Yes
Soil	SVOCs	Total	2-Methylnaphthalene	0-3 ft	N/A	ug/kg	40	0.183	60.0	1.17	340	22	10	8	1.29	150	18	45%	No	Yes
Soil	SVOCs	Total	2-Methylnaphthalene	0-10 ft	N/A	ug/kg	43	0.183	60.0	1.17	340	24	10	9	1.29	150	19	44%	No	Yes
Soil	SVOCs	Total	2-Methylnaphthalene	>10 ft	N/A	ug/kg	6	0.573	0.640	2.20	2.46	5	-	1	7.98	7.98	1	17%	Yes	--
Soil	SVOCs	Total	Acenaphthene	0-1 ft	N/A	ug/kg	31	0.531	1.00	1.23	340	6	6	19	1.50	470	25	81%	No	Yes

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(9 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	SVOCs	Total	Acenaphthene	0-3 ft	N/A	ug/kg	40	0.531	1.00	1.23	340	9	9	22	1.10	3,200	31	78%	No	Yes
Soil	SVOCs	Total	Acenaphthene	0-10 ft	N/A	ug/kg	43	0.531	1.00	1.23	340	11	9	23	1.10	3,200	32	74%	No	Yes
Soil	SVOCs	Total	Acenaphthene	>10 ft	N/A	ug/kg	6	0.565	0.631	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Acenaphthylene	0-1 ft	N/A	ug/kg	31	0.510	70.0	1.17	340	17	8	6	1.39	87.7	14	45%	No	Yes
Soil	SVOCs	Total	Acenaphthylene	0-3 ft	N/A	ug/kg	40	0.510	70.0	1.17	340	24	8	8	1.39	295	16	40%	No	Yes
Soil	SVOCs	Total	Acenaphthylene	0-10 ft	N/A	ug/kg	43	0.510	70.0	1.17	340	27	8	8	1.39	295	16	37%	No	Yes
Soil	SVOCs	Total	Acenaphthylene	>10 ft	N/A	ug/kg	6	0.649	0.725	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Anthracene	0-1 ft	N/A	ug/kg	31	0.356	0.394	1.41	340	2	4	25	1.72	832	29	94%	No	Yes
Soil	SVOCs	Total	Anthracene	0-3 ft	N/A	ug/kg	40	0.356	1.40	1.41	340	5	5	30	1.72	2,040	35	88%	No	Yes
Soil	SVOCs	Total	Anthracene	0-10 ft	N/A	ug/kg	43	0.356	1.40	1.41	340	7	5	31	1.72	2,040	36	84%	No	Yes
Soil	SVOCs	Total	Anthracene	>10 ft	N/A	ug/kg	6	0.419	0.468	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Fluorene	0-1 ft	N/A	ug/kg	31	0.573	85.0	1.23	340	8	3	20	1.69	462	23	74%	No	Yes
Soil	SVOCs	Total	Fluorene	0-3 ft	N/A	ug/kg	40	0.573	85.0	1.23	340	12	5	23	1.69	779	28	70%	No	Yes
Soil	SVOCs	Total	Fluorene	0-10 ft	N/A	ug/kg	43	0.573	85.0	1.23	340	15	5	23	1.69	779	28	65%	No	Yes
Soil	SVOCs	Total	Fluorene	>10 ft	N/A	ug/kg	6	0.712	0.795	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Phenanthrene	0-1 ft	N/A	ug/kg	31	-	-	-	-	0	-	31	5.64	4,000	31	100%	No	Yes
Soil	SVOCs	Total	Phenanthrene	0-3 ft	N/A	ug/kg	40	0.750	1.30	2.50	6.50	2	1	37	2.47	6,550	38	95%	No	Yes
Soil	SVOCs	Total	Phenanthrene	0-10 ft	N/A	ug/kg	43	0.713	1.30	2.40	6.50	4	1	38	2.47	6,550	39	91%	No	Yes
Soil	SVOCs	Total	Phenanthrene	>10 ft	N/A	ug/kg	6	0.687	0.731	2.20	2.46	5	1	-	1.82	1.82	1	17%	Yes	--
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	N/A	ug/kg	31	-	-	-	-	-	-	-	8.79	5,687	31	100%	No	Yes
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	N/A	ug/kg	40	4.56	8.10	15.1	39.0	-	-	-	6.41	13,120	38	95%	No	Yes
Soil	SVOCs	Total	Benzo(a)anthracene	0-1 ft	N/A	ug/kg	31	0.749	1.05	2.07	2.45	2	-	29	3.96	6,440	29	94%	No	Yes
Soil	SVOCs	Total	Benzo(a)anthracene	0-3 ft	N/A	ug/kg	40	0.749	1.40	2.07	6.50	5	-	35	3.96	12,300	35	88%	No	Yes
Soil	SVOCs	Total	Benzo(a)anthracene	0-10 ft	N/A	ug/kg	43	0.749	1.40	2.07	6.50	7	-	36	3.96	12,300	36	84%	No	Yes
Soil	SVOCs	Total	Benzo(a)anthracene	>10 ft	N/A	ug/kg	6	1.11	1.24	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Benzo(a)pyrene	0-1 ft	N/A	ug/kg	31	0.656	0.656	2.07	2.07	1	-	30	7.49	6,470	30	97%	No	Yes
Soil	SVOCs	Total	Benzo(a)pyrene	0-3 ft	N/A	ug/kg	40	0.656	1.60	2.07	6.50	4	-	36	7.49	11,700	36	90%	No	Yes
Soil	SVOCs	Total	Benzo(a)pyrene	0-10 ft	N/A	ug/kg	43	0.656	1.60	2.07	6.50	6	-	37	7.49	11,700	37	86%	No	Yes
Soil	SVOCs	Total	Benzo(a)pyrene	>10 ft	N/A	ug/kg	6	0.697	0.779	2.20	2.49	5	1	-	1.32	1.32	1	17%	Yes	--
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	N/A	ug/kg	13	-	-	-	-	0	-	13	25.0	4,100	13	100%	No	--
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-3 ft	N/A	ug/kg	18	2.50	2.50	6.50	6.50	1	-	17	25.0	4,100	17	94%	No	--
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-10 ft	N/A	ug/kg	18	2.50	2.50	6.50	6.50	1	-	17	25.0	4,100	17	94%	No	--
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	N/A	ug/kg	31	0.202	0.498	1.23	2.07	5	-	26	6.89	3,830	26	84%	No	Yes
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-3 ft	N/A	ug/kg	40	0.202	2.30	1.23	6.50	7	-	33	4.33	3,830	33	83%	No	Yes
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-10 ft	N/A	ug/kg	43	0.202	2.30	1.23	6.50	9	-	34	4.33	3,830	34	79%	No	Yes
Soil	SVOCs	Total	Benzo(g,h,i)perylene	>10 ft	N/A	ug/kg	6	0.530	0.592	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	N/A	ug/kg	13	-	-	10.0	10.0	0	1	12	8.30	1,400	13	100%	No	--
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-3 ft	N/A	ug/kg	18	2.50	2.50	6.50	10.0	1	1	16	8.30	1,400	17	94%	No	--
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-10 ft	N/A	ug/kg	18	2.50	2.50	6.50	10.0	1	1	16	8.30	1,400	17	94%	No	--
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-1 ft	N/A	ug/kg	18	0.939	0.939	4.14	4.14	1	-	17	10.2	12,100	17	94%	No	--
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-3 ft	N/A	ug/kg	22	0.939	1.14	4.14	5.05	2	-	20	7.70	16,300	20	91%	No	Yes
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-10 ft	N/A	ug/kg	25	0.939	1.14	4.14	5.05	4	-	21	7.70	16,300	21	84%	No	Yes
Soil	SVOCs	Total	Benzofluoranthenes, Total	>10 ft	N/A	ug/kg	6	1.06	1.11	4.41	4.98	4	2	-	2.72	2.97	2	33%	Yes	--
Soil	SVOCs	Total	Chrysene	0-1 ft	N/A	ug/kg	31	0.741	0.741	2.07	2.07	1	-	30	6.36	7,590	30	97%	No	Yes
Soil	SVOCs	Total	Chrysene	0-3 ft	N/A	ug/kg	40	0.741	0.903	2.07	6.50	3	1	36	1.80	12,000	37	93%	No	Yes
Soil	SVOCs	Total	Chrysene	0-10 ft	N/A	ug/kg	43	0.741	0.903	2.07	6.50	5	1	37	1.80	12,000	38	88%	No	Yes
Soil	SVOCs	Total	Chrysene	>10 ft	N/A	ug/kg	6	0.788	0.880	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	N/A	ug/kg	31	0.273	3.41	1.17	340	11	3	17	1.23	1,430	20	65%	No	Yes
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-3 ft	N/A	ug/kg	40	0.273	3.41	1.17	340	14	4	22	1.23	1,430	26	65%	No	Yes
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-10 ft	N/A	ug/kg	43	0.273	3.41	1.17	340	17	4	22	1.23	1,430	26	60%	No	Yes
Soil	SVOCs	Total	Dibenz(a,h)anthracene	>10 ft	N/A	ug/kg	6	0.684	0.764	2.20	2.46	6	-	-	-	-	0	0%	Yes	--
Soil	SVOCs	Total	Fluoranthene	0-1 ft	N/A	ug/kg	31	1.05	1.05	2.07	2.07	1	-	30	8.47	20,700	30	97%	No	Yes
Soil	SVOCs	Total	Fluoranthene	0-3 ft	N/A	ug/kg	40	1.05	2.20	2.07	6.50	3	-	37	6.29	28,600	37	93%	No	Yes
Soil	SVOCs	Total	Fluoranthene	0-10 ft	N/A	ug/kg	43	1.05	2.20	2.07	6.50	5	-	38	6.29	28,600	38	88%	No	Yes
Soil	SVOCs	Total	Fluoranthene	>10 ft	N/A	ug/kg	6	1.19	1.24	2.35	2.46	4	-	2	3.53	3.90	2	33%	Yes	--
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	N/A	ug/kg	31	0.286	0.472	1.23	2.07	3	-	28	3.68	3,910	28	90%	No	Yes
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-3 ft	N/A	ug/kg	40	0.286	1.90	1.23	6.50	5	-	35	3.52	4,170	35	88%	No	Yes
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-10 ft	N/A	ug/kg	43	0.286	1.90	1.23	6.50	7	-	36	3.52	4,170	36	84%	No	Yes
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	>10 ft	N/A	ug/kg	6	0.527	0.561	2.20	2.46	5	1	-	0.511	0.511	1	17%	Yes	--
Soil	SVOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	31	0.548	65.0	1.17	340	12	9	10	1.70	227	19	61%	No	Yes

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(10 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	SVOCs	Total	Naphthalene	0-3 ft	N/A	ug/kg	40	0.548	65.0	1.17	340	16	13	11	1.70	256	24	60%	No	Yes
Soil	SVOCs	Total	Naphthalene	0-10 ft	N/A	ug/kg	43	0.548	65.0	1.17	340	19	13	11	1.70	256	24	56%	No	Yes
Soil	SVOCs	Total	Naphthalene	>10 ft	N/A	ug/kg	6	0.976	1.09	2.20	2.46	5	-	1	4.24	4.24	1	17%	Yes	--
Soil	SVOCs	Total	Pyrene	0-1 ft	N/A	ug/kg	31	0.352	0.352	2.07	2.07	1	-	30	10.0	21,900	30	97%	No	Yes
Soil	SVOCs	Total	Pyrene	0-3 ft	N/A	ug/kg	40	0.352	0.429	2.07	6.50	2	1	37	2.10	32,000	38	95%	No	Yes
Soil	SVOCs	Total	Pyrene	0-10 ft	N/A	ug/kg	43	0.352	0.429	2.07	6.50	4	1	38	2.10	32,000	39	91%	No	Yes
Soil	SVOCs	Total	Pyrene	>10 ft	N/A	ug/kg	6	0.400	0.418	2.35	2.46	3	-	3	2.60	3.71	3	50%	Yes	--
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	N/A	ug/kg	31	5.46	5.46	16.6	16.6	-	-	-	37.0	72,270	30	97%	No	Yes
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	N/A	ug/kg	40	5.46	6.66	16.6	20.2	-	-	-	16.5	105,200	38	95%	No	Yes
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-1 ft	N/A	ug/kg	37	0.0443	9.40	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-3 ft	N/A	ug/kg	46	0.0443	1,200	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-10 ft	N/A	ug/kg	49	0.0443	1,200	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	>10 ft	N/A	ug/kg	6	0.0444	0.136	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	N/A	ug/kg	37	0.0650	4.30	1.13	27.0	35	2	-	0.490	0.580	2	5%	No	Yes
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-3 ft	N/A	ug/kg	46	0.0650	1,800	1.13	6,200	44	2	-	0.490	0.580	2	4%	No	No
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-10 ft	N/A	ug/kg	49	0.0650	1,800	1.13	6,200	46	3	-	0.0969	0.580	3	6%	No	Yes
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	>10 ft	N/A	ug/kg	6	0.0651	0.199	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-1 ft	N/A	ug/kg	37	0.0638	7.40	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-3 ft	N/A	ug/kg	46	0.0638	2,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-10 ft	N/A	ug/kg	49	0.0638	2,500	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	>10 ft	N/A	ug/kg	6	0.0639	0.195	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,1,2-Trichloroethane	0-1 ft	N/A	ug/kg	37	0.0880	7.90	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2-Trichloroethane	0-3 ft	N/A	ug/kg	46	0.0880	2,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2-Trichloroethane	0-10 ft	N/A	ug/kg	49	0.0880	2,500	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2-Trichloroethane	>10 ft	N/A	ug/kg	6	0.0901	0.275	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,1-Dichloroethane	0-1 ft	N/A	ug/kg	37	0.0480	9.30	1.13	27.0	36	1	-	0.290	0.290	1	3%	No	No
Soil	VOCs	Total	1,1-Dichloroethane	0-3 ft	N/A	ug/kg	46	0.0480	2,500	1.13	6,200	45	1	-	0.290	0.290	1	2%	No	No
Soil	VOCs	Total	1,1-Dichloroethane	0-10 ft	N/A	ug/kg	49	0.0480	2,500	1.13	6,200	48	1	-	0.290	0.290	1	2%	No	No
Soil	VOCs	Total	1,1-Dichloroethane	>10 ft	N/A	ug/kg	6	0.0573	0.175	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,1-Dichloroethene	0-1 ft	N/A	ug/kg	37	0.0700	7.30	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloroethene	0-3 ft	N/A	ug/kg	46	0.0700	3,000	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloroethene	0-10 ft	N/A	ug/kg	49	0.0700	3,000	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloroethene	>10 ft	N/A	ug/kg	6	0.442	1.35	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,1-Dichloropropene	0-1 ft	N/A	ug/kg	37	0.150	9.40	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloropropene	0-3 ft	N/A	ug/kg	46	0.150	2,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloropropene	0-10 ft	N/A	ug/kg	49	0.150	2,500	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloropropene	>10 ft	N/A	ug/kg	6	0.906	2.77	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-1 ft	N/A	ug/kg	37	0.108	12.0	1.13	270	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-3 ft	N/A	ug/kg	46	0.108	2,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-10 ft	N/A	ug/kg	49	0.108	2,800	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichlorobenzene	>10 ft	N/A	ug/kg	6	0.108	0.330	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,2,3-Trichloropropane	0-1 ft	N/A	ug/kg	37	0.0756	17.0	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichloropropane	0-3 ft	N/A	ug/kg	46	0.0756	2,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichloropropane	0-10 ft	N/A	ug/kg	49	0.0756	2,800	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichloropropane	>10 ft	N/A	ug/kg	6	0.0758	0.232	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	N/A	ug/kg	37	0.110	6.50	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	N/A	ug/kg	46	0.110	1,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-10 ft	N/A	ug/kg	49	0.110	1,800	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,4-Trichlorobenzene	>10 ft	N/A	ug/kg	6	0.110	0.337	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	N/A	ug/kg	37	0.0478	3.70	1.13	67.0	22	15	-	0.110	0.523	15	41%	No	Yes
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-3 ft	N/A	ug/kg	46	0.0478	3.70	1.13	67.0	25	18	3	0.0980	14,300	21	46%	No	Yes
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-10 ft	N/A	ug/kg	49	0.0478	3.70	1.13	67.0	28	18	3	0.0980	14,300	21	43%	No	Yes
Soil	VOCs	Total	1,2,4-Trimethylbenzene	>10 ft	N/A	ug/kg	6	0.0479	0.146	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-1 ft	N/A	ug/kg	37	0.135	140	1.13	270	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-3 ft	N/A	ug/kg	46	0.135	3,800	1.13	12,000	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-10 ft	N/A	ug/kg	49	0.135	3,800	1.13	12,000	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	>10 ft	N/A	ug/kg	6	0.135	0.413	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-1 ft	N/A	ug/kg	37	0.0575	6.90	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-3 ft	N/A	ug/kg	46	0.0575	1,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-10 ft	N/A	ug/kg	49	0.0575	1,800	1.13	6,200	49	-	-	-	-	0	0%	No	No

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(11 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	>10 ft	N/A	ug/kg	6	0.0576	0.176	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,2-Dichlorobenzene	0-1 ft	N/A	ug/kg	37	0.0575	6.60	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichlorobenzene	0-3 ft	N/A	ug/kg	46	0.0575	2,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichlorobenzene	0-10 ft	N/A	ug/kg	49	0.0575	2,500	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichlorobenzene	>10 ft	N/A	ug/kg	6	0.0576	0.176	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-1 ft	N/A	ug/kg	37	0.0540	9.70	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-3 ft	N/A	ug/kg	46	0.0540	1,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-10 ft	N/A	ug/kg	49	0.0540	1,800	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	>10 ft	N/A	ug/kg	6	0.0879	0.269	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,2-Dichloropropane	0-1 ft	N/A	ug/kg	37	0.0428	11.0	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloropropane	0-3 ft	N/A	ug/kg	46	0.0428	2,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloropropane	0-10 ft	N/A	ug/kg	49	0.0428	2,500	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloropropane	>10 ft	N/A	ug/kg	6	0.0429	0.131	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	N/A	ug/kg	37	0.0400	6.50	1.13	67.0	32	5	-	0.0435	0.125	5	14%	No	Yes
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-3 ft	N/A	ug/kg	46	0.0400	6.50	1.13	67.0	38	6	2	0.0435	6,500	8	17%	No	Yes
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-10 ft	N/A	ug/kg	49	0.0400	6.50	1.13	67.0	41	6	2	0.0435	6,500	8	16%	No	Yes
Soil	VOCs	Total	1,3,5-Trimethylbenzene	>10 ft	N/A	ug/kg	6	0.0432	0.132	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,3-Dichlorobenzene	0-1 ft	N/A	ug/kg	37	0.0391	6.10	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichlorobenzene	0-3 ft	N/A	ug/kg	46	0.0391	1,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichlorobenzene	0-10 ft	N/A	ug/kg	49	0.0391	1,800	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichlorobenzene	>10 ft	N/A	ug/kg	6	0.0391	0.120	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,3-Dichloropropane	0-1 ft	N/A	ug/kg	37	0.0590	5.30	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichloropropane	0-3 ft	N/A	ug/kg	46	0.0590	2,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichloropropane	0-10 ft	N/A	ug/kg	49	0.0590	2,500	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichloropropane	>10 ft	N/A	ug/kg	6	0.0608	0.186	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	37	0.0551	5.70	1.13	27.0	36	1	-	0.160	0.160	1	3%	No	No
Soil	VOCs	Total	1,4-Dichlorobenzene	0-3 ft	N/A	ug/kg	46	0.0551	2,500	1.13	6,200	44	2	-	0.140	0.160	2	4%	No	No
Soil	VOCs	Total	1,4-Dichlorobenzene	0-10 ft	N/A	ug/kg	49	0.0551	2,500	1.13	6,200	47	2	-	0.140	0.160	2	4%	No	No
Soil	VOCs	Total	1,4-Dichlorobenzene	>10 ft	N/A	ug/kg	6	0.0552	0.169	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	2,2-Dichloropropane	0-1 ft	N/A	ug/kg	37	0.0763	9.50	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2,2-Dichloropropane	0-3 ft	N/A	ug/kg	46	0.0763	1,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2,2-Dichloropropane	0-10 ft	N/A	ug/kg	49	0.0763	1,500	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2,2-Dichloropropane	>10 ft	N/A	ug/kg	6	0.0765	0.234	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	2-Butanone (MEK)	0-1 ft	N/A	ug/kg	37	1.60	290	8.89	540	21	10	6	4.90	50.0	16	43%	No	Yes
Soil	VOCs	Total	2-Butanone (MEK)	0-3 ft	N/A	ug/kg	46	1.60	12,000	7.08	31,000	27	13	6	2.30	50.0	19	41%	No	Yes
Soil	VOCs	Total	2-Butanone (MEK)	0-10 ft	N/A	ug/kg	49	1.60	12,000	7.08	31,000	30	13	6	2.30	50.0	19	39%	No	Yes
Soil	VOCs	Total	2-Butanone (MEK)	>10 ft	N/A	ug/kg	6	2.08	6.34	5.67	17.3	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	2-Chlorotoluene	0-1 ft	N/A	ug/kg	37	0.0490	4.90	1.13	270	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Chlorotoluene	0-3 ft	N/A	ug/kg	46	0.0490	1,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Chlorotoluene	0-10 ft	N/A	ug/kg	49	0.0490	1,800	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Chlorotoluene	>10 ft	N/A	ug/kg	6	0.0491	0.150	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	2-Hexanone	0-1 ft	N/A	ug/kg	37	0.780	170	5.66	2,700	34	3	-	4.70	8.80	3	8%	No	Yes
Soil	VOCs	Total	2-Hexanone	0-3 ft	N/A	ug/kg	46	0.780	7,500	5.66	31,000	43	3	-	4.70	8.80	3	7%	No	Yes
Soil	VOCs	Total	2-Hexanone	0-10 ft	N/A	ug/kg	49	0.780	7,500	5.66	31,000	46	3	-	4.70	8.80	3	6%	No	Yes
Soil	VOCs	Total	2-Hexanone	>10 ft	N/A	ug/kg	6	1.24	3.78	5.67	17.3	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	4-Chlorotoluene	0-1 ft	N/A	ug/kg	37	0.0920	5.50	1.13	270	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	4-Chlorotoluene	0-3 ft	N/A	ug/kg	46	0.0920	1,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	4-Chlorotoluene	0-10 ft	N/A	ug/kg	49	0.0920	1,800	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	4-Chlorotoluene	>10 ft	N/A	ug/kg	6	0.0939	0.287	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	4-Isopropyltoluene	0-1 ft	N/A	ug/kg	37	0.0766	6.10	1.37	270	23	13	1	0.0833	12.0	14	38%	No	Yes
Soil	VOCs	Total	4-Isopropyltoluene	0-3 ft	N/A	ug/kg	46	0.0766	1,800	1.37	6,200	29	15	2	0.0833	161	17	37%	No	Yes
Soil	VOCs	Total	4-Isopropyltoluene	0-10 ft	N/A	ug/kg	49	0.0676	1,800	1.21	6,200	32	15	2	0.0833	161	17	35%	No	Yes
Soil	VOCs	Total	4-Isopropyltoluene	>10 ft	N/A	ug/kg	6	0.0634	0.194	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	N/A	ug/kg	37	0.240	460	5.66	2,700	28	9	-	0.330	1.20	9	24%	No	Yes
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-3 ft	N/A	ug/kg	46	0.240	10,000	5.66	31,000	37	9	-	0.330	1.20	9	20%	No	Yes
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-10 ft	N/A	ug/kg	49	0.240	10,000	5.66	31,000	40	9	-	0.330	1.20	9	18%	No	Yes
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	>10 ft	N/A	ug/kg	6	0.719	2.20	5.67	17.3	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Acetone	0-1 ft	N/A	ug/kg	37	15.0	389	19.0	810	19	1	17	7.90	540	18	49%	No	Yes
Soil	VOCs	Total	Acetone	0-3 ft	N/A	ug/kg	46	15.0	10,000	19.0	31,000	23	4	19	7.90	540	23	50%	No	Yes
Soil	VOCs	Total	Acetone	0-10 ft	N/A	ug/kg	49	7.77	10,000	7.77	31,000	26	4	19	7.90	540	23	47%	No	Yes

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(12 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	VOCs	Total	Acetone	>10 ft	N/A	ug/kg	6	2.93	35.8	5.67	35.8	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Benzene	0-1 ft	N/A	ug/kg	37	0.220	5.70	1.13	27.0	22	15	-	0.160	1.20	15	41%	No	Yes
Soil	VOCs	Total	Benzene	0-3 ft	N/A	ug/kg	46	0.140	2,500	1.13	6,200	29	17	-	0.160	1.20	17	37%	No	Yes
Soil	VOCs	Total	Benzene	0-10 ft	N/A	ug/kg	49	0.140	2,500	1.13	6,200	30	19	-	0.160	1.20	19	39%	No	Yes
Soil	VOCs	Total	Benzene	>10 ft	N/A	ug/kg	6	1.13	3.33	1.13	3.47	5	1	-	0.631	0.631	1	17%	Yes	--
Soil	VOCs	Total	Bromobenzene	0-1 ft	N/A	ug/kg	37	0.0450	8.20	1.13	270	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromobenzene	0-3 ft	N/A	ug/kg	46	0.0450	1,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromobenzene	0-10 ft	N/A	ug/kg	49	0.0450	1,800	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromobenzene	>10 ft	N/A	ug/kg	6	0.0450	0.138	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Bromochloromethane	0-1 ft	N/A	ug/kg	37	0.0519	9.40	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromochloromethane	0-3 ft	N/A	ug/kg	46	0.0519	1,900	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromochloromethane	0-10 ft	N/A	ug/kg	49	0.0519	1,900	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromochloromethane	>10 ft	N/A	ug/kg	6	0.0520	0.159	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Bromodichloromethane	0-1 ft	N/A	ug/kg	37	0.0440	6.20	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromodichloromethane	0-3 ft	N/A	ug/kg	46	0.0440	2,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromodichloromethane	0-10 ft	N/A	ug/kg	49	0.0440	2,500	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromodichloromethane	>10 ft	N/A	ug/kg	6	0.0701	0.214	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Bromoform	0-1 ft	N/A	ug/kg	37	0.0701	13.0	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromoform	0-3 ft	N/A	ug/kg	46	0.0701	2,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromoform	0-10 ft	N/A	ug/kg	49	0.0701	2,500	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromoform	>10 ft	N/A	ug/kg	6	0.0702	0.215	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Bromomethane	0-1 ft	N/A	ug/kg	37	0.397	29.0	1.13	67.0	30	7	-	0.480	5.00	7	19%	No	Yes
Soil	VOCs	Total	Bromomethane	0-3 ft	N/A	ug/kg	46	0.397	6,200	1.13	12,000	38	8	-	0.480	5.00	8	17%	No	Yes
Soil	VOCs	Total	Bromomethane	0-10 ft	N/A	ug/kg	49	0.397	6,200	1.13	12,000	41	8	-	0.480	5.00	8	16%	No	Yes
Soil	VOCs	Total	Bromomethane	>10 ft	N/A	ug/kg	6	0.398	1.22	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Carbon Disulfide	0-1 ft	N/A	ug/kg	37	0.313	7.40	1.13	27.0	18	18	1	0.180	6.90	19	51%	No	Yes
Soil	VOCs	Total	Carbon Disulfide	0-3 ft	N/A	ug/kg	46	0.313	2,500	1.13	6,200	22	23	1	0.180	6.90	24	52%	No	Yes
Soil	VOCs	Total	Carbon Disulfide	0-10 ft	N/A	ug/kg	49	0.313	2,500	1.13	6,200	25	23	1	0.180	6.90	24	49%	No	Yes
Soil	VOCs	Total	Carbon Disulfide	>10 ft	N/A	ug/kg	6	0.313	3.16	1.13	3.47	5	1	-	1.04	1.04	1	17%	Yes	--
Soil	VOCs	Total	Carbon Tetrachloride	0-1 ft	N/A	ug/kg	37	0.0780	11.0	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Carbon Tetrachloride	0-3 ft	N/A	ug/kg	46	0.0780	1,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Carbon Tetrachloride	0-10 ft	N/A	ug/kg	49	0.0780	1,500	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Carbon Tetrachloride	>10 ft	N/A	ug/kg	6	0.0955	0.292	1.13	3.47	5	1	-	0.528	0.528	1	17%	Yes	--
Soil	VOCs	Total	Chlorobenzene	0-1 ft	N/A	ug/kg	37	0.0503	6.60	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chlorobenzene	0-3 ft	N/A	ug/kg	46	0.0503	2,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chlorobenzene	0-10 ft	N/A	ug/kg	49	0.0503	2,500	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chlorobenzene	>10 ft	N/A	ug/kg	6	0.0504	0.154	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Chloroethane	0-1 ft	N/A	ug/kg	37	0.300	24.0	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloroethane	0-3 ft	N/A	ug/kg	46	0.300	6,200	1.13	12,000	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloroethane	0-10 ft	N/A	ug/kg	49	0.300	6,200	1.13	12,000	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloroethane	>10 ft	N/A	ug/kg	6	0.650	1.99	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Chloroform	0-1 ft	N/A	ug/kg	37	0.0480	1.00	1.13	41.0	34	3	-	0.260	19.0	3	8%	No	Yes
Soil	VOCs	Total	Chloroform	0-3 ft	N/A	ug/kg	46	0.0480	1,800	1.13	6,200	43	3	-	0.260	19.0	3	7%	No	Yes
Soil	VOCs	Total	Chloroform	0-10 ft	N/A	ug/kg	49	0.0480	1,800	1.13	6,200	46	3	-	0.260	19.0	3	6%	No	Yes
Soil	VOCs	Total	Chloroform	>10 ft	N/A	ug/kg	6	0.0603	0.184	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Chloromethane	0-1 ft	N/A	ug/kg	37	0.0570	8.70	1.13	67.0	35	2	-	0.230	0.250	2	5%	No	Yes
Soil	VOCs	Total	Chloromethane	0-3 ft	N/A	ug/kg	46	0.0570	5,000	1.13	12,000	44	2	-	0.230	0.250	2	4%	No	No
Soil	VOCs	Total	Chloromethane	0-10 ft	N/A	ug/kg	49	0.0570	5,000	1.13	12,000	47	2	-	0.230	0.250	2	4%	No	No
Soil	VOCs	Total	Chloromethane	>10 ft	N/A	ug/kg	6	0.397	1.21	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	37	0.0810	2.00	1.13	27.0	36	1	-	12.0	12.0	1	3%	No	No
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-3 ft	N/A	ug/kg	46	0.0810	2,500	1.13	6,200	44	1	1	12.0	120	2	4%	No	No
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-10 ft	N/A	ug/kg	49	0.0810	2,500	1.13	6,200	45	1	3	4.95	120	4	8%	No	Yes
Soil	VOCs	Total	cis-1,2-Dichloroethene	>10 ft	N/A	ug/kg	6	0.102	0.300	1.13	3.47	3	3	-	0.410	1.54	3	50%	Yes	--
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-1 ft	N/A	ug/kg	37	0.0310	8.30	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-3 ft	N/A	ug/kg	46	0.0310	2,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-10 ft	N/A	ug/kg	49	0.0310	2,500	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	cis-1,3-Dichloropropene	>10 ft	N/A	ug/kg	6	0.0414	0.127	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Dibromochloromethane	0-1 ft	N/A	ug/kg	37	0.0730	9.10	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromochloromethane	0-3 ft	N/A	ug/kg	46	0.0730	2,500	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromochloromethane	0-10 ft	N/A	ug/kg	49	0.0730	2,500	1.13	6,200	49	-	-	-	-	0	0%	No	No

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(13 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	VOCs	Total	Dibromochloromethane	>10 ft	N/A	ug/kg	6	0.0732	0.224	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Dibromomethane	0-1 ft	N/A	ug/kg	37	0.0734	18.0	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromomethane	0-3 ft	N/A	ug/kg	46	0.0734	2,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromomethane	0-10 ft	N/A	ug/kg	49	0.0734	2,800	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromomethane	>10 ft	N/A	ug/kg	6	0.0735	0.225	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Dichlorodifluoromethane	0-1 ft	N/A	ug/kg	37	0.0463	1.00	1.13	10.0	33	2	2	0.260	94.0	4	11%	No	Yes
Soil	VOCs	Total	Dichlorodifluoromethane	0-3 ft	N/A	ug/kg	46	0.0463	4,200	1.13	12,000	42	2	2	0.260	94.0	4	9%	No	Yes
Soil	VOCs	Total	Dichlorodifluoromethane	0-10 ft	N/A	ug/kg	49	0.0463	4,200	1.13	12,000	44	3	2	0.0850	94.0	5	10%	No	Yes
Soil	VOCs	Total	Dichlorodifluoromethane	>10 ft	N/A	ug/kg	6	0.129	0.142	1.13	3.54	2	4	-	0.0630	0.467	4	67%	Yes	--
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	N/A	ug/kg	37	0.140	5.38	1.47	14.0	25	11	1	0.240	460	12	32%	No	Yes
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-3 ft	N/A	ug/kg	46	0.140	1,200	1.47	6,200	29	16	1	0.240	460	17	37%	No	Yes
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-10 ft	N/A	ug/kg	49	0.140	1,200	1.47	6,200	32	16	1	0.240	460	17	35%	No	Yes
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	>10 ft	N/A	ug/kg	6	0.186	2.50	1.13	3.47	4	1	1	1.14	13.8	2	33%	Yes	--
Soil	VOCs	Total	Ethylbenzene	0-1 ft	N/A	ug/kg	37	0.0410	6.10	1.13	27.0	29	8	-	0.0720	0.320	8	22%	No	Yes
Soil	VOCs	Total	Ethylbenzene	0-3 ft	N/A	ug/kg	46	0.0410	1,800	1.13	6,200	36	9	1	0.0720	37.4	10	22%	No	Yes
Soil	VOCs	Total	Ethylbenzene	0-10 ft	N/A	ug/kg	49	0.0384	1,800	1.13	6,200	39	9	1	0.0720	37.4	10	20%	No	Yes
Soil	VOCs	Total	Ethylbenzene	>10 ft	N/A	ug/kg	6	1.13	3.47	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Hexachlorobutadiene	0-1 ft	N/A	ug/kg	37	0.0664	15.0	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Hexachlorobutadiene	0-3 ft	N/A	ug/kg	46	0.0664	1,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Hexachlorobutadiene	0-10 ft	N/A	ug/kg	49	0.0664	1,800	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Hexachlorobutadiene	>10 ft	N/A	ug/kg	6	0.0665	0.203	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Isopropylbenzene	0-1 ft	N/A	ug/kg	37	0.0310	6.10	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Isopropylbenzene	0-3 ft	N/A	ug/kg	46	0.0310	3,000	1.13	6,200	45	-	1	47.3	47.3	1	2%	No	No
Soil	VOCs	Total	Isopropylbenzene	0-10 ft	N/A	ug/kg	49	0.0310	3,000	1.13	6,200	48	-	1	47.3	47.3	1	2%	No	No
Soil	VOCs	Total	Isopropylbenzene	>10 ft	N/A	ug/kg	6	0.0423	0.129	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	m,p-Xylenes	0-1 ft	N/A	ug/kg	37	0.0930	13.0	2.26	54.0	29	8	-	0.140	0.440	8	22%	No	Yes
Soil	VOCs	Total	m,p-Xylenes	0-3 ft	N/A	ug/kg	46	0.0930	13.0	2.26	54.0	35	9	2	0.140	7,400	11	24%	No	Yes
Soil	VOCs	Total	m,p-Xylenes	0-10 ft	N/A	ug/kg	49	0.0930	13.0	2.26	54.0	38	9	2	0.140	7,400	11	22%	No	Yes
Soil	VOCs	Total	m,p-Xylenes	>10 ft	N/A	ug/kg	6	0.281	6.93	2.27	6.93	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	37	0.320	7.90	1.13	270	29	8	-	0.450	1.50	8	22%	No	Yes
Soil	VOCs	Total	Naphthalene	0-3 ft	N/A	ug/kg	46	0.320	2,500	1.13	6,200	35	10	1	0.450	19.5	11	24%	No	Yes
Soil	VOCs	Total	Naphthalene	0-10 ft	N/A	ug/kg	49	0.320	2,500	1.13	6,200	38	10	1	0.450	19.5	11	22%	No	Yes
Soil	VOCs	Total	Naphthalene	>10 ft	N/A	ug/kg	6	0.467	1.43	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	n-Butylbenzene	0-1 ft	N/A	ug/kg	37	0.0880	6.50	1.13	270	36	1	-	0.0920	0.0920	1	3%	No	No
Soil	VOCs	Total	n-Butylbenzene	0-3 ft	N/A	ug/kg	46	0.0880	1,800	1.13	6,200	45	1	-	0.0920	0.0920	1	2%	No	No
Soil	VOCs	Total	n-Butylbenzene	0-10 ft	N/A	ug/kg	49	0.0880	1,800	1.13	6,200	48	1	-	0.0920	0.0920	1	2%	No	No
Soil	VOCs	Total	n-Butylbenzene	>10 ft	N/A	ug/kg	6	0.105	0.321	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	n-Propylbenzene	0-1 ft	N/A	ug/kg	37	0.0531	5.70	1.13	270	36	1	-	0.150	0.150	1	3%	No	No
Soil	VOCs	Total	n-Propylbenzene	0-3 ft	N/A	ug/kg	46	0.0531	2,800	1.13	6,200	43	2	1	0.150	122	3	7%	No	Yes
Soil	VOCs	Total	n-Propylbenzene	0-10 ft	N/A	ug/kg	49	0.0531	2,800	1.13	6,200	46	2	1	0.150	122	3	6%	No	Yes
Soil	VOCs	Total	n-Propylbenzene	>10 ft	N/A	ug/kg	6	0.0532	0.163	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	o-Xylene	0-1 ft	N/A	ug/kg	37	0.0411	6.90	1.13	27.0	35	2	-	0.170	0.180	2	5%	No	Yes
Soil	VOCs	Total	o-Xylene	0-3 ft	N/A	ug/kg	46	0.0411	6.90	1.13	6,200	41	4	1	0.170	3,200	5	11%	No	Yes
Soil	VOCs	Total	o-Xylene	0-10 ft	N/A	ug/kg	49	0.0411	6.90	1.13	6,200	44	4	1	0.170	3,200	5	10%	No	Yes
Soil	VOCs	Total	o-Xylene	>10 ft	N/A	ug/kg	6	1.13	3.33	1.13	3.47	5	1	-	0.184	0.184	1	17%	Yes	--
Soil	VOCs	Total	sec-Butylbenzene	0-1 ft	N/A	ug/kg	37	0.0442	6.50	1.13	270	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	sec-Butylbenzene	0-3 ft	N/A	ug/kg	46	0.0442	1,800	1.13	6,200	44	1	1	0.435	90.2	2	4%	No	No
Soil	VOCs	Total	sec-Butylbenzene	0-10 ft	N/A	ug/kg	49	0.0442	1,800	1.13	6,200	47	1	1	0.435	90.2	2	4%	No	No
Soil	VOCs	Total	sec-Butylbenzene	>10 ft	N/A	ug/kg	6	0.0442	0.135	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Styrene	0-1 ft	N/A	ug/kg	37	0.0403	6.10	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Styrene	0-3 ft	N/A	ug/kg	46	0.0340	2,500	1.13	12,000	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Styrene	0-10 ft	N/A	ug/kg	49	0.0340	2,500	1.13	12,000	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Styrene	>10 ft	N/A	ug/kg	6	0.0272	2.32	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	tert-Butylbenzene	0-1 ft	N/A	ug/kg	37	0.0273	4.30	1.13	270	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	tert-Butylbenzene	0-3 ft	N/A	ug/kg	46	0.0273	1,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	tert-Butylbenzene	0-10 ft	N/A	ug/kg	49	0.0273	1,800	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	tert-Butylbenzene	>10 ft	N/A	ug/kg	6	0.0273	0.0836	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	N/A	ug/kg	37	0.114	8.30	1.13	67.0	35	2	-	0.162	3.10	2	5%	No	Yes
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-3 ft	N/A	ug/kg	46	0.114	8.30	1.13	67.0	41	2	3	0.162	420,000	5	11%	No	Yes
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-10 ft	N/A	ug/kg	49	0.114	8.30	1.13	67.0	41	3	5	0.162	420,000	8	16%	No	Yes

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(14 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Soil	VOCs	Total	Tetrachloroethene (PCE)	>10 ft	N/A	ug/kg	6	0.234	0.350	1.13	3.47	4	2	-	0.235	0.437	2	33%	Yes	--
Soil	VOCs	Total	Toluene	0-1 ft	N/A	ug/kg	37	0.0440	6.10	1.13	27.0	19	18	-	0.240	5.80	18	49%	No	Yes
Soil	VOCs	Total	Toluene	0-3 ft	N/A	ug/kg	46	0.0440	6.10	1.13	27.0	20	24	2	0.110	39,000	26	57%	No	Yes
Soil	VOCs	Total	Toluene	0-10 ft	N/A	ug/kg	49	0.0440	6.10	1.13	27.0	23	24	2	0.110	39,000	26	53%	No	Yes
Soil	VOCs	Total	Toluene	>10 ft	N/A	ug/kg	6	1.13	3.33	1.13	3.33	5	-	1	5.20	5.20	1	17%	Yes	--
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	37	0.0480	9.90	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-3 ft	N/A	ug/kg	46	0.0480	3,000	1.13	6,200	45	-	1	2.28	2.28	1	2%	No	No
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-10 ft	N/A	ug/kg	49	0.0480	3,000	1.13	6,200	48	-	1	2.28	2.28	1	2%	No	No
Soil	VOCs	Total	trans-1,2-Dichloroethene	>10 ft	N/A	ug/kg	6	0.284	0.867	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-1 ft	N/A	ug/kg	37	0.0513	12.0	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-3 ft	N/A	ug/kg	46	0.0513	1,800	1.13	6,200	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-10 ft	N/A	ug/kg	49	0.0513	1,800	1.13	6,200	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	trans-1,3-Dichloropropene	>10 ft	N/A	ug/kg	6	0.0514	0.157	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Trichloroethene (TCE)	0-1 ft	N/A	ug/kg	37	0.0440	13.0	1.13	27.0	33	4	-	0.0614	0.171	4	11%	No	Yes
Soil	VOCs	Total	Trichloroethene (TCE)	0-3 ft	N/A	ug/kg	46	0.0440	13.0	1.13	6,200	39	6	1	0.0614	6,080	7	15%	No	Yes
Soil	VOCs	Total	Trichloroethene (TCE)	0-10 ft	N/A	ug/kg	49	0.0440	13.0	1.13	6,200	39	7	3	0.0450	6,080	10	20%	No	Yes
Soil	VOCs	Total	Trichloroethene (TCE)	>10 ft	N/A	ug/kg	6	-	-	1.13	3.54	0	6	-	0.0809	0.374	6	100%	Yes	--
Soil	VOCs	Total	Trichlorofluoromethane	0-1 ft	N/A	ug/kg	37	0.0540	11.0	1.13	67.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Trichlorofluoromethane	0-3 ft	N/A	ug/kg	46	0.0540	1,800	1.13	12,000	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Trichlorofluoromethane	0-10 ft	N/A	ug/kg	49	0.0540	1,800	1.13	12,000	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Trichlorofluoromethane	>10 ft	N/A	ug/kg	6	0.397	1.21	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Vinyl Acetate	0-1 ft	N/A	ug/kg	37	0.600	52.0	5.66	670	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Acetate	0-3 ft	N/A	ug/kg	46	0.600	6,200	5.66	12,000	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Acetate	0-10 ft	N/A	ug/kg	49	0.600	6,200	5.66	12,000	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Acetate	>10 ft	N/A	ug/kg	6	1.15	3.50	5.67	17.3	6	-	-	-	-	0	0%	Yes	--
Soil	VOCs	Total	Vinyl Chloride	0-1 ft	N/A	ug/kg	37	0.0570	13.0	1.13	27.0	37	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Chloride	0-3 ft	N/A	ug/kg	46	0.0570	3,800	1.13	12,000	46	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Chloride	0-10 ft	N/A	ug/kg	49	0.0570	3,800	1.13	12,000	49	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Chloride	>10 ft	N/A	ug/kg	6	0.211	0.645	1.13	3.47	6	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Metals	Total	Aluminum	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	8,050	13,000	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Antimony	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	0.220	0.340	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Arsenic	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	5.91	5.94	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Barium	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	75.8	108	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Beryllium	0-1 ft	N/A	mg/kg	2	-	-	0.740	1.23	0	2	-	0.240	0.350	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Cadmium	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	0.458	1.06	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Chromium	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	108	162	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Cobalt	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	10.9	13.4	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Copper	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	46.4	71.6	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Lead	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	302	319	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Manganese	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	369	479	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Mercury	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	0.0330	0.0390	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Nickel	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	57.5	74.9	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Selenium	0-1 ft	N/A	mg/kg	2	-	-	1.50	2.50	0	2	-	0.500	0.650	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Silver	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	0.127	0.175	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Thallium	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	0.0670	0.117	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Vanadium	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	59.3	69.8	2	100%	Yes	--
Erodible Soil Subset	Metals	Total	Zinc	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	123	203	2	100%	Yes	--
Erodible Soil Subset	Butyltins	Total	Dibutyltin	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	6.70	9.10	2	100%	Yes	--
Erodible Soil Subset	Butyltins	Total	Monobutyltin	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	3.20	8.25	2	100%	Yes	--
Erodible Soil Subset	Butyltins	Total	Tributyltin	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	3.20	12.8	2	100%	Yes	--
Erodible Soil Subset	Pesticides	Total	4,4'-DDD	0-1 ft	N/A	ug/kg	2	0.110	0.300	0.630	0.660	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	4,4'-DDE	0-1 ft	N/A	ug/kg	2	-	-	0.660	0.710	0	2	-	0.250	0.440	2	100%	Yes	--
Erodible Soil Subset	Pesticides	Total	4,4'-DDT	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	4.40	10.0	2	100%	Yes	--
Erodible Soil Subset	Pesticides	Total	Aldrin	0-1 ft	N/A	ug/kg	2	0.160	0.160	0.630	0.660	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	BHC (alpha)	0-1 ft	N/A	ug/kg	2	0.110	0.110	0.630	0.660	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	BHC (beta)	0-1 ft	N/A	ug/kg	2	0.180	0.660	0.630	0.660	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	BHC (delta)	0-1 ft	N/A	ug/kg	2	0.140	0.140	0.630	0.660	1	1	-	0.0780	0.0780	1	50%	Yes	--
Erodible Soil Subset	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	N/A	ug/kg	2	0.0800	1.30	0.630	1.30	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	Chlordane (alpha)	0-1 ft	N/A	ug/kg	2	0.100	0.100	0.630	0.660	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	Chlordane (gamma)	0-1 ft	N/A	ug/kg	2	0.630	0.660	0.630	0.660	2	-	-	-	-	0	0%	Yes	--

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(15 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Erodible Soil Subset	Pesticides	Total	Dieldrin	0-1 ft	N/A	ug/kg	2	0.140	0.810	0.630	0.810	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	Endosulfan I	0-1 ft	N/A	ug/kg	2	0.110	0.660	0.630	0.660	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	Endosulfan II	0-1 ft	N/A	ug/kg	2	0.140	0.140	0.630	0.660	1	1	-	0.240	0.240	1	50%	Yes	--
Erodible Soil Subset	Pesticides	Total	Endosulfan Sulfate	0-1 ft	N/A	ug/kg	2	0.110	0.110	0.630	0.630	1	-	1	0.770	0.770	1	50%	Yes	--
Erodible Soil Subset	Pesticides	Total	Endrin Aldehyde	0-1 ft	N/A	ug/kg	2	0.630	0.700	0.630	0.700	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	Endrin Ketone	0-1 ft	N/A	ug/kg	2	0.630	2.90	0.630	2.90	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	Endrin	0-1 ft	N/A	ug/kg	2	0.0940	0.660	0.630	0.660	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	Heptachlor Epoxide	0-1 ft	N/A	ug/kg	2	0.0840	0.180	0.630	0.660	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	Heptachlor	0-1 ft	N/A	ug/kg	2	-	-	0.660	0.710	0	2	-	0.185	0.380	2	100%	Yes	--
Erodible Soil Subset	Pesticides	Total	Methoxychlor	0-1 ft	N/A	ug/kg	2	0.630	1.50	0.630	1.50	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	Pesticides	Total	Toxaphene	0-1 ft	N/A	ug/kg	2	43.0	190	43.0	190	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1016	0-1 ft	N/A	ug/kg	2	2.10	2.10	6.30	6.60	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1221	0-1 ft	N/A	ug/kg	2	2.10	2.10	13.0	14.0	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1232	0-1 ft	N/A	ug/kg	2	2.10	2.10	6.30	6.60	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1242	0-1 ft	N/A	ug/kg	2	2.10	2.10	6.30	6.60	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1248	0-1 ft	N/A	ug/kg	2	2.10	2.10	6.30	6.60	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1254	0-1 ft	N/A	ug/kg	2	2.10	2.10	6.30	6.60	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1260	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	27.0	67.0	2	100%	Yes	--
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1262	0-1 ft	N/A	ug/kg	2	2.10	2.10	6.30	6.60	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1268	0-1 ft	N/A	ug/kg	2	2.10	2.10	6.30	6.60	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	N/A	ug/kg	2	-	-	-	-	-	-	-	29.1	69.1	2	100%	Yes	--
Erodible Soil Subset	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	N/A	mg/kg	2	-	-	36.0	36.0	0	1	1	33.0	69.0	2	100%	Yes	--
Erodible Soil Subset	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	N/A	mg/kg	2	-	-	-	-	0	-	2	400	1,000	2	100%	Yes	--
Erodible Soil Subset	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	N/A	mg/kg	8	1.50	1.50	3.30	5.00	4	4	-	1.80	3.20	4	50%	No	--
Erodible Soil Subset	SVOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	N/A	ug/kg	2	38.0	75.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	1,2-Dichlorobenzene	0-1 ft	N/A	ug/kg	2	33.0	65.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	1,3-Dichlorobenzene	0-1 ft	N/A	ug/kg	2	40.0	80.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	2	48.0	95.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2,4,5-Trichlorophenol	0-1 ft	N/A	ug/kg	2	75.0	150	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2,4,6-Trichlorophenol	0-1 ft	N/A	ug/kg	2	45.0	90.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2,4-Dichlorophenol	0-1 ft	N/A	ug/kg	2	45.0	90.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2,4-Dimethylphenol	0-1 ft	N/A	ug/kg	2	140	280	780	1,700	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2,4-Dinitrophenol	0-1 ft	N/A	ug/kg	2	900	1,800	3,200	6,700	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2,4-Dinitrotoluene	0-1 ft	N/A	ug/kg	2	70.0	140	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2,6-Dinitrotoluene	0-1 ft	N/A	ug/kg	2	70.0	140	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2-Chloronaphthalene	0-1 ft	N/A	ug/kg	2	90.0	180	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2-Chlorophenol	0-1 ft	N/A	ug/kg	2	43.0	85.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2-Methylphenol	0-1 ft	N/A	ug/kg	2	85.0	170	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2-Nitroaniline	0-1 ft	N/A	ug/kg	2	68.0	140	320	670	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2-Nitrophenol	0-1 ft	N/A	ug/kg	2	65.0	130	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	3,3'-Dichlorobenzidine	0-1 ft	N/A	ug/kg	2	93.0	190	1,600	3,400	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	3-Nitroaniline	0-1 ft	N/A	ug/kg	2	65.0	130	320	670	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-1 ft	N/A	ug/kg	2	43.0	85.0	1,600	3,400	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-1 ft	N/A	ug/kg	2	35.0	70.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	4-Chloro-3-methylphenol	0-1 ft	N/A	ug/kg	2	53.0	110	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	4-Chloroaniline	0-1 ft	N/A	ug/kg	2	53.0	110	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-1 ft	N/A	ug/kg	2	50.0	100	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	4-Nitroaniline	0-1 ft	N/A	ug/kg	2	85.0	170	320	670	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	4-Nitrophenol	0-1 ft	N/A	ug/kg	2	750	1,500	1,600	3,400	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Aniline	0-1 ft	N/A	ug/kg	2	38.0	75.0	320	670	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Benzoic Acid	0-1 ft	N/A	ug/kg	2	2,400	4,800	3,200	6,700	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Benzyl Alcohol	0-1 ft	N/A	ug/kg	2	93.0	190	320	670	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Bis(2-chloroethoxy)methane	0-1 ft	N/A	ug/kg	2	33.0	65.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Bis(2-chloroethyl) Ether	0-1 ft	N/A	ug/kg	2	60.0	120	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-1 ft	N/A	ug/kg	2	30.0	60.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	58,000	260,000	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	N/A	ug/kg	2	38.0	75.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Carbazole	0-1 ft	N/A	ug/kg	2	-	-	180	340	0	2	-	37.5	91.0	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Dibenzofuran	0-1 ft	N/A	ug/kg	2	33.0	65.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Diethyl Phthalate	0-1 ft	N/A	ug/kg	2	88.0	180	160	340	2	-	-	-	-	0	0%	Yes	--

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Erodible Soil Subset	SVOCs	Total	Dimethyl Phthalate	0-1 ft	N/A	ug/kg	2	45.0	90.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	N/A	ug/kg	2	65.0	130	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	N/A	ug/kg	2	30.0	60.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Hexachlorobenzene	0-1 ft	N/A	ug/kg	2	53.0	110	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Hexachlorobutadiene	0-1 ft	N/A	ug/kg	2	35.0	70.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Hexachlorocyclopentadiene	0-1 ft	N/A	ug/kg	2	380	750	780	1,700	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Hexachloroethane	0-1 ft	N/A	ug/kg	2	55.0	110	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Isophorone	0-1 ft	N/A	ug/kg	2	40.0	80.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Nitrobenzene	0-1 ft	N/A	ug/kg	2	50.0	100	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	N-Nitrosodimethylamine	0-1 ft	N/A	ug/kg	2	160	310	780	1,700	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	N-Nitrosodi-n-propylamine	0-1 ft	N/A	ug/kg	2	80.0	160	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	N-Nitrosodiphenylamine	0-1 ft	N/A	ug/kg	2	55.0	110	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	N/A	ug/kg	2	73.0	150	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Pentachlorophenol	0-1 ft	N/A	ug/kg	2	220	430	1,600	3,400	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Phenol	0-1 ft	N/A	ug/kg	2	48.0	95.0	470	1,000	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	2-Methylnaphthalene	0-1 ft	N/A	ug/kg	2	30.0	60.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Acenaphthene	0-1 ft	N/A	ug/kg	2	-	-	180	340	0	2	-	34.5	68.0	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Acenaphthylene	0-1 ft	N/A	ug/kg	2	35.0	70.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Anthracene	0-1 ft	N/A	ug/kg	2	-	-	180	340	0	2	-	53.5	150	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Fluorene	0-1 ft	N/A	ug/kg	2	43.0	85.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	2	33.0	65.0	160	340	2	-	-	-	-	0	0%	Yes	--
Erodible Soil Subset	SVOCs	Total	Phenanthrene	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	360	940	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	N/A	ug/kg	2	-	-	-	-	-	-	-	549	1356	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Benzo(a)anthracene	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	455	1,200	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Benzo(a)pyrene	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	435	1,000	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	645	1,600	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	270	590	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	230	570	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Chrysene	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	575	1,500	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	N/A	ug/kg	2	-	-	180	340	0	2	-	95.5	220	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Fluoranthene	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	825	2,100	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	300	690	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Pyrene	0-1 ft	N/A	ug/kg	2	-	-	-	-	0	-	2	775	1,900	2	100%	Yes	--
Erodible Soil Subset	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	N/A	ug/kg	2	-	-	-	-	-	-	-	4606	11370	2	100%	Yes	--
Erodible Soil Subset	VOCs	Total	1,1,1,2-Tetrachloroethane	0-1 ft	N/A	ug/kg	8	0.190	9.40	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	N/A	ug/kg	8	0.160	4.30	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,1,2,2-Tetrachloroethane	0-1 ft	N/A	ug/kg	8	0.0900	7.40	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,1,2-Trichloroethane	0-1 ft	N/A	ug/kg	8	0.0890	7.90	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,1-Dichloroethane	0-1 ft	N/A	ug/kg	8	0.0490	9.30	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,1-Dichloroethene	0-1 ft	N/A	ug/kg	8	0.0710	7.30	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,1-Dichloropropene	0-1 ft	N/A	ug/kg	8	0.160	9.40	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,2,3-Trichlorobenzene	0-1 ft	N/A	ug/kg	8	0.150	12.0	21.0	270	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,2,3-Trichloropropane	0-1 ft	N/A	ug/kg	8	0.280	17.0	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	N/A	ug/kg	8	0.230	6.50	21.0	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	N/A	ug/kg	8	0.110	3.70	21.0	67.0	2	6	-	0.160	0.280	6	75%	No	--
Erodible Soil Subset	VOCs	Total	1,2-Dibromo-3-chloropropane	0-1 ft	N/A	ug/kg	8	0.790	140	21.0	270	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,2-Dibromoethane (EDB)	0-1 ft	N/A	ug/kg	8	0.200	6.90	21.0	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,2-Dichlorobenzene	0-1 ft	N/A	ug/kg	8	0.0640	6.60	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,2-Dichloroethane (EDC)	0-1 ft	N/A	ug/kg	8	0.0550	9.70	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,2-Dichloropropane	0-1 ft	N/A	ug/kg	8	0.0660	11.0	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	N/A	ug/kg	8	0.0410	6.50	21.0	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,3-Dichlorobenzene	0-1 ft	N/A	ug/kg	8	0.0710	6.10	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,3-Dichloropropane	0-1 ft	N/A	ug/kg	8	0.0600	5.30	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	8	0.110	5.70	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	2,2-Dichloropropane	0-1 ft	N/A	ug/kg	8	0.110	9.50	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	2-Butanone (MEK)	0-1 ft	N/A	ug/kg	8	290	290	21.0	540	1	2	5	5.00	50.0	7	88%	No	--
Erodible Soil Subset	VOCs	Total	2-Chlorotoluene	0-1 ft	N/A	ug/kg	8	0.0520	4.90	21.0	270	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	2-Hexanone	0-1 ft	N/A	ug/kg	8	0.820	170	21.0	2,700	5	3	-	4.70	8.80	3	38%	No	--
Erodible Soil Subset	VOCs	Total	4-Chlorotoluene	0-1 ft	N/A	ug/kg	8	0.0930	5.50	21.0	270	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	4-Isopropyltoluene	0-1 ft	N/A	ug/kg	8	0.0840	6.10	21.0	270	5	3	-	0.480	2.50	3	38%	No	--

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(17 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Erodible Soil Subset	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	N/A	ug/kg	8	0.260	460	21.0	2,700	5	3	-	0.770	1.20	3	38%	No	--
Erodible Soil Subset	VOCs	Total	Acetone	0-1 ft	N/A	ug/kg	8	230	230	810	810	1	-	7	47.0	540	7	88%	No	--
Erodible Soil Subset	VOCs	Total	Benzene	0-1 ft	N/A	ug/kg	8	0.230	5.70	5.10	27.0	4	4	-	0.160	1.00	4	50%	No	--
Erodible Soil Subset	VOCs	Total	Bromobenzene	0-1 ft	N/A	ug/kg	8	0.0930	8.20	5.10	270	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Bromochloromethane	0-1 ft	N/A	ug/kg	8	0.260	9.40	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Bromodichloromethane	0-1 ft	N/A	ug/kg	8	0.0450	6.20	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Bromoform	0-1 ft	N/A	ug/kg	8	0.260	13.0	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Bromomethane	0-1 ft	N/A	ug/kg	8	0.430	29.0	5.10	67.0	6	2	-	1.20	5.00	2	25%	No	--
Erodible Soil Subset	VOCs	Total	Carbon Disulfide	0-1 ft	N/A	ug/kg	8	7.40	7.40	5.10	27.0	1	7	-	0.620	1.00	7	88%	No	--
Erodible Soil Subset	VOCs	Total	Carbon Tetrachloride	0-1 ft	N/A	ug/kg	8	0.0790	11.0	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Chlorobenzene	0-1 ft	N/A	ug/kg	8	0.0550	6.60	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Chloroethane	0-1 ft	N/A	ug/kg	8	0.310	24.0	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Chloroform	0-1 ft	N/A	ug/kg	8	0.0490	0.0630	5.10	41.0	5	3	-	0.260	19.0	3	38%	No	--
Erodible Soil Subset	VOCs	Total	Chloromethane	0-1 ft	N/A	ug/kg	8	0.0580	8.70	5.10	67.0	6	2	-	0.230	0.250	2	25%	No	--
Erodible Soil Subset	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	8	0.0820	0.110	5.10	27.0	7	1	-	12.0	12.0	1	13%	No	--
Erodible Soil Subset	VOCs	Total	cis-1,3-Dichloropropene	0-1 ft	N/A	ug/kg	8	0.0320	8.30	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Dibromochloromethane	0-1 ft	N/A	ug/kg	8	0.170	9.10	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Dibromomethane	0-1 ft	N/A	ug/kg	8	0.190	18.0	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Dichlorodifluoromethane	0-1 ft	N/A	ug/kg	8	0.0730	0.0940	5.10	6.60	7	-	1	94.0	94.0	1	13%	No	--
Erodible Soil Subset	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	N/A	ug/kg	8	0.160	0.190	11.0	14.0	4	3	1	0.330	460	4	50%	No	--
Erodible Soil Subset	VOCs	Total	Ethylbenzene	0-1 ft	N/A	ug/kg	8	0.0430	6.10	5.10	27.0	5	3	-	0.100	0.200	3	38%	No	--
Erodible Soil Subset	VOCs	Total	Hexachlorobutadiene	0-1 ft	N/A	ug/kg	8	0.180	15.0	21.0	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Isopropylbenzene	0-1 ft	N/A	ug/kg	8	0.0320	6.10	21.0	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	m,p-Xylenes	0-1 ft	N/A	ug/kg	8	0.0980	13.0	5.10	54.0	5	3	-	0.190	0.360	3	38%	No	--
Erodible Soil Subset	VOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	8	0.340	7.90	21.0	270	6	2	-	0.450	0.540	2	25%	No	--
Erodible Soil Subset	VOCs	Total	n-Butylbenzene	0-1 ft	N/A	ug/kg	8	0.0890	6.50	21.0	270	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	n-Propylbenzene	0-1 ft	N/A	ug/kg	8	0.0630	5.70	21.0	270	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	o-Xylene	0-1 ft	N/A	ug/kg	8	0.0600	6.90	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	sec-Butylbenzene	0-1 ft	N/A	ug/kg	8	0.0660	6.50	21.0	270	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Styrene	0-1 ft	N/A	ug/kg	8	0.0770	6.10	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	tert-Butylbenzene	0-1 ft	N/A	ug/kg	8	0.0550	4.30	21.0	270	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	N/A	ug/kg	8	0.130	8.30	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Toluene	0-1 ft	N/A	ug/kg	8	6.10	6.10	5.10	27.0	1	7	-	0.240	1.30	7	88%	No	--
Erodible Soil Subset	VOCs	Total	trans-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	8	0.0490	9.90	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	trans-1,3-Dichloropropene	0-1 ft	N/A	ug/kg	8	0.110	12.0	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Trichloroethene (TCE)	0-1 ft	N/A	ug/kg	8	0.140	13.0	5.10	27.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Trichlorofluoromethane	0-1 ft	N/A	ug/kg	8	0.0550	11.0	5.10	67.0	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Vinyl Acetate	0-1 ft	N/A	ug/kg	8	0.610	52.0	21.0	670	8	-	-	-	-	0	0%	No	--
Erodible Soil Subset	VOCs	Total	Vinyl Chloride	0-1 ft	N/A	ug/kg	8	0.0580	13.0	5.10	27.0	8	-	-	-	-	0	0%	No	--
Groundwater	Metals	Total	Arsenic	N/A	N/A	ug/L	20	-	-	-	-	0	-	20	0.540	11.6	20	100%	No	Yes
Groundwater	Metals	Total	Iron	N/A	N/A	ug/L	20	20.0	55.6	20.0	55.6	4	2	14	12.9	1,500	16	80%	No	Yes
Groundwater	Metals	Total	Vanadium	N/A	N/A	ug/L	20	0.0700	0.200	0.200	10.0	2	6	12	0.130	5.90	18	90%	No	Yes
Groundwater	Metals	Dissolved	Arsenic	N/A	N/A	ug/L	20	-	-	-	-	0	-	20	0.510	8.99	20	100%	No	Yes
Groundwater	Metals	Dissolved	Calcium	N/A	N/A	ug/L	5	-	-	-	-	0	-	5	6,690	44,300	5	100%	Yes	--
Groundwater	Metals	Dissolved	Iron	N/A	N/A	ug/L	20	4.00	20.0	20.0	20.0	13	3	4	6.40	270	7	35%	No	Yes
Groundwater	Metals	Dissolved	Magnesium	N/A	N/A	ug/L	5	-	-	-	-	0	-	5	883	14,000	5	100%	Yes	--
Groundwater	Metals	Dissolved	Potassium	N/A	N/A	ug/L	5	-	-	2,000	2,000	0	3	2	782	2,610	5	100%	Yes	--
Groundwater	Metals	Dissolved	Sodium	N/A	N/A	ug/L	5	-	-	-	-	0	-	5	6,860	89,400	5	100%	Yes	--
Groundwater	Metals	Dissolved	Vanadium	N/A	N/A	ug/L	20	0.0700	0.800	0.200	10.0	5	5	10	0.145	3.10	15	75%	No	Yes
Groundwater	Butyltins	Total	Monobutyltin	N/A	N/A	ug/L	20	0.0110	0.0290	0.0500	0.0870	18	2	-	0.0140	0.0260	2	10%	No	Yes
Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	N/A	ug/L	20	11.0	120	100	120	18	2	-	17.0	18.0	2	10%	No	Yes
Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	N/A	ug/L	20	19.0	120	100	120	20	-	-	-	-	0	0%	No	No
Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	N/A	ug/L	20	13.0	13.0	250	250	17	3	-	13.5	23.5	3	15%	No	Yes
Groundwater	SVOCs	Total	Benzo(b)fluoranthene	N/A	N/A	ug/L	20	0.0170	0.0200	0.190	0.230	19	1	-	0.0180	0.0180	1	5%	No	No
Groundwater	SVOCs	Total	Benzo(k)fluoranthene	N/A	N/A	ug/L	20	0.0240	0.0280	0.190	0.230	20	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Phenanthrene	N/A	N/A	ug/L	20	0.0220	0.0250	0.190	0.230	19	1	-	0.0840	0.0840	1	5%	No	No
Groundwater	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	N/A	ug/L	5	0.0450	0.0450	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/L	5	0.0620	0.0620	0.500	0.500	3	1	1	0.220	1.90	2	40%	Yes	--
Groundwater	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	N/A	ug/L	5	0.0880	0.0880	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,1,2-Trichloroethane	N/A	N/A	ug/L	5	0.0940	0.0940	0.500	0.500	5	-	-	-	-	0	0%	Yes	--

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(18 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	N/A	ug/L	5	0.0590	0.0590	0.500	0.500	3	1	1	0.320	5.00	2	40%	Yes	--
Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	N/A	ug/L	5	0.100	0.100	0.500	0.500	4	-	1	2.10	2.10	1	20%	Yes	--
Groundwater	VOCs	Total	1,1-Dichloropropene	N/A	N/A	ug/L	5	0.0620	0.0620	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,2,3-Trichlorobenzene	N/A	N/A	ug/L	5	0.0840	0.0840	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,2,3-Trichloropropane	N/A	N/A	ug/L	5	0.240	0.240	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	5	0.180	0.180	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	N/A	ug/L	5	0.0620	0.0620	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	N/A	ug/L	5	0.500	0.500	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	N/A	ug/L	5	0.0720	0.0720	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	5	0.0690	0.0690	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	N/A	ug/L	5	0.0660	0.0660	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,2-Dichloropropane	N/A	N/A	ug/L	5	0.0620	0.0620	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,3,5-Trimethylbenzene	N/A	N/A	ug/L	5	0.0660	0.0660	5.00	5.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	5	0.0820	0.0820	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,3-Dichloropropane	N/A	N/A	ug/L	5	0.0570	0.0570	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	5	0.0840	0.0840	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	N/A	ug/L	20	0.0830	0.420	0.500	2.50	20	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	2-Butanone (MEK)	N/A	N/A	ug/L	5	2.30	2.30	20.0	20.0	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	2-Chlorotoluene	N/A	N/A	ug/L	5	0.0790	0.0790	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	2-Hexanone	N/A	N/A	ug/L	5	2.40	2.40	20.0	20.0	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	4-Chlorotoluene	N/A	N/A	ug/L	5	0.0570	0.0570	4.00	4.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	4-Isopropyltoluene	N/A	N/A	ug/L	5	0.0700	0.0700	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	N/A	ug/L	5	1.40	1.40	20.0	20.0	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Acetone	N/A	N/A	ug/L	5	3.00	3.00	20.0	20.0	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Benzene	N/A	N/A	ug/L	5	0.0620	0.0620	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Bromobenzene	N/A	N/A	ug/L	5	0.0660	0.0660	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Bromochloromethane	N/A	N/A	ug/L	5	0.0990	0.0990	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Bromodichloromethane	N/A	N/A	ug/L	5	0.0550	0.0550	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Bromoform	N/A	N/A	ug/L	5	0.0990	0.0990	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Bromomethane	N/A	N/A	ug/L	5	0.120	0.120	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Carbon Disulfide	N/A	N/A	ug/L	5	-	-	0.500	0.500	0	5	-	0.120	0.255	5	100%	Yes	--
Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	N/A	ug/L	5	0.0480	0.0480	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Chlorobenzene	N/A	N/A	ug/L	5	0.0640	0.0640	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Chloroethane	N/A	N/A	ug/L	5	0.130	0.130	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Chloroform	N/A	N/A	ug/L	20	0.0820	0.410	0.500	2.50	19	1	-	0.180	0.180	1	5%	No	No
Groundwater	VOCs	Total	Chloromethane	N/A	N/A	ug/L	5	0.110	0.110	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/L	20	0.0660	0.0660	0.500	0.500	5	3	12	0.0800	660	15	75%	No	Yes
Groundwater	VOCs	Total	cis-1,3-Dichloropropene	N/A	N/A	ug/L	5	0.0550	0.0550	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Dibromochloromethane	N/A	N/A	ug/L	5	0.0720	0.0720	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Dibromomethane	N/A	N/A	ug/L	5	0.120	0.120	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Dichlorodifluoromethane	N/A	N/A	ug/L	5	0.0750	0.0750	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	N/A	ug/L	5	0.0840	0.0840	2.00	2.00	4	1	-	0.175	0.175	1	20%	Yes	--
Groundwater	VOCs	Total	Ethylbenzene	N/A	N/A	ug/L	5	0.0680	0.0680	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	5	0.150	0.150	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Isopropylbenzene	N/A	N/A	ug/L	5	0.0760	0.0760	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	m,p-Xylenes	N/A	N/A	ug/L	5	0.110	0.110	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Naphthalene	N/A	N/A	ug/L	5	0.0960	0.0960	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	n-Butylbenzene	N/A	N/A	ug/L	5	0.0850	0.0850	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	n-Propylbenzene	N/A	N/A	ug/L	5	0.00590	0.00590	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	o-Xylene	N/A	N/A	ug/L	5	0.0680	0.0680	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	sec-Butylbenzene	N/A	N/A	ug/L	5	0.0710	0.0710	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Styrene	N/A	N/A	ug/L	5	0.0770	0.0770	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	tert-Butylbenzene	N/A	N/A	ug/L	5	0.0590	0.0590	2.00	2.00	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	N/A	ug/L	20	0.0970	0.0970	0.500	0.500	4	3	13	0.360	6.20	16	80%	No	Yes
Groundwater	VOCs	Total	Toluene	N/A	N/A	ug/L	5	-	-	0.500	0.500	0	2	3	0.230	0.640	5	100%	Yes	--
Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	N/A	ug/L	5	0.0690	0.0690	0.500	0.500	3	1	1	0.110	1.70	2	40%	Yes	--
Groundwater	VOCs	Total	trans-1,3-Dichloropropene	N/A	N/A	ug/L	5	0.0750	0.0750	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/L	20	0.0730	0.0730	0.500	0.500	5	4	11	0.140	3.40	15	75%	No	Yes
Groundwater	VOCs	Total	Trichlorofluoromethane	N/A	N/A	ug/L	5	0.0990	0.0990	0.500	0.500	5	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Vinyl Acetate	N/A	N/A	ug/L	5	0.910	0.910	5.00	5.00	5	-	-	-	-	0	0%	Yes	--

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(19 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Groundwater	VOCs	Total	Vinyl Chloride	N/A	N/A	ug/L	20	0.0440	0.0440	0.500	2.50	16	2	2	0.480	4.10	4	20%	No	Yes
DP Groundwater	Metals	Total	Aluminum	N/A	N/A	ug/L	10	-	-	100	100	0	2	8	74.2	17,900	10	100%	No	--
DP Groundwater	Metals	Total	Antimony	N/A	N/A	ug/L	10	0.500	0.500	0.500	0.500	1	5	4	0.233	1.57	9	90%	No	--
DP Groundwater	Metals	Total	Arsenic	N/A	N/A	ug/L	10	0.102	0.102	0.500	0.500	2	2	6	0.114	7.70	8	80%	No	--
DP Groundwater	Metals	Total	Barium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	3.76	97.8	10	100%	No	--
DP Groundwater	Metals	Total	Beryllium	N/A	N/A	ug/L	10	0.0782	0.0782	0.500	0.500	6	3	1	0.157	0.785	4	40%	No	--
DP Groundwater	Metals	Total	Cadmium	N/A	N/A	ug/L	10	0.0247	0.0247	0.500	0.500	10	-	-	-	-	0	0%	No	--
DP Groundwater	Metals	Total	Calcium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	18,300	33,700	10	100%	No	--
DP Groundwater	Metals	Total	Chromium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	2.61	31.8	10	100%	No	--
DP Groundwater	Metals	Total	Cobalt	N/A	N/A	ug/L	10	0.770	0.770	5.00	5.00	4	3	3	1.68	13.1	6	60%	No	--
DP Groundwater	Metals	Total	Copper	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	1.38	204	10	100%	No	--
DP Groundwater	Metals	Total	Iron	N/A	N/A	ug/L	10	14.0	14.0	100	100	1	1	8	84.4	25,900	9	90%	No	--
DP Groundwater	Metals	Total	Lead	N/A	N/A	ug/L	10	0.500	0.500	0.500	0.500	3	1	6	0.0580	13.7	7	70%	No	--
DP Groundwater	Metals	Total	Magnesium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	5,130	15,400	10	100%	No	--
DP Groundwater	Metals	Total	Manganese	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	2.10	708	10	100%	No	--
DP Groundwater	Metals	Total	Mercury	N/A	N/A	ug/L	10	0.0530	0.0530	0.200	0.200	8	2	-	0.0760	0.100	2	20%	No	--
DP Groundwater	Metals	Total	Nickel	N/A	N/A	ug/L	10	0.370	0.370	10.0	10.0	1	7	2	1.02	21.4	9	90%	No	--
DP Groundwater	Metals	Total	Potassium	N/A	N/A	ug/L	10	-	-	1,000	1,000	0	2	8	898	3,210	10	100%	No	--
DP Groundwater	Metals	Total	Selenium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	0.815	2.06	10	100%	No	--
DP Groundwater	Metals	Total	Silver	N/A	N/A	ug/L	10	0.0188	0.0188	0.100	0.100	1	6	3	0.0195	0.376	9	90%	No	--
DP Groundwater	Metals	Total	Sodium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	6,350	42,900	10	100%	No	--
DP Groundwater	Metals	Total	Thallium	N/A	N/A	ug/L	10	0.0292	0.0292	0.500	0.500	3	7	-	0.0430	0.146	7	70%	No	--
DP Groundwater	Metals	Total	Vanadium	N/A	N/A	ug/L	10	-	-	10.0	10.0	0	6	4	1.82	77.6	10	100%	No	--
DP Groundwater	Metals	Total	Zinc	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	2.88	44.4	10	100%	No	--
DP Groundwater	Metals	Dissolved	Aluminum	N/A	N/A	ug/L	10	5.88	5.88	100	100	3	5	2	5.88	1,370	7	70%	No	--
DP Groundwater	Metals	Dissolved	Antimony	N/A	N/A	ug/L	10	-	-	0.500	0.500	0	9	1	0.149	1.67	10	100%	No	--
DP Groundwater	Metals	Dissolved	Arsenic	N/A	N/A	ug/L	10	-	-	0.500	0.500	0	1	9	0.262	1.36	10	100%	No	--
DP Groundwater	Metals	Dissolved	Barium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	3.39	20.6	10	100%	No	--
DP Groundwater	Metals	Dissolved	Beryllium	N/A	N/A	ug/L	10	0.0782	0.0782	0.500	0.500	10	-	-	-	-	0	0%	No	--
DP Groundwater	Metals	Dissolved	Cadmium	N/A	N/A	ug/L	10	0.0247	0.0247	0.500	0.500	9	1	-	0.0300	0.0300	1	10%	No	--
DP Groundwater	Metals	Dissolved	Calcium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	10,800	34,100	10	100%	No	--
DP Groundwater	Metals	Dissolved	Chromium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	0.838	4.29	10	100%	No	--
DP Groundwater	Metals	Dissolved	Cobalt	N/A	N/A	ug/L	10	0.770	0.770	5.00	5.00	2	7	1	1.21	5.08	8	80%	No	--
DP Groundwater	Metals	Dissolved	Copper	N/A	N/A	ug/L	10	0.500	1.23	0.500	1.23	3	-	7	0.752	4.38	7	70%	No	--
DP Groundwater	Metals	Dissolved	Iron	N/A	N/A	ug/L	10	14.0	14.0	100	100	6	1	3	37.3	476	4	40%	No	--
DP Groundwater	Metals	Dissolved	Lead	N/A	N/A	ug/L	10	0.0240	0.500	0.500	0.500	4	6	-	0.0260	0.378	6	60%	No	--
DP Groundwater	Metals	Dissolved	Magnesium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	3,310	12,000	10	100%	No	--
DP Groundwater	Metals	Dissolved	Manganese	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	1.71	587	10	100%	No	--
DP Groundwater	Metals	Dissolved	Mercury	N/A	N/A	ug/L	10	0.0530	0.0530	0.200	0.200	8	2	-	0.0550	0.0600	2	20%	No	--
DP Groundwater	Metals	Dissolved	Nickel	N/A	N/A	ug/L	10	0.370	10.0	10.0	10.0	7	3	-	0.403	2.10	3	30%	No	--
DP Groundwater	Metals	Dissolved	Potassium	N/A	N/A	ug/L	10	-	-	1,000	1,000	0	3	7	527	2,210	10	100%	No	--
DP Groundwater	Metals	Dissolved	Selenium	N/A	N/A	ug/L	10	-	-	0.500	0.500	0	3	7	0.235	1.30	10	100%	No	--
DP Groundwater	Metals	Dissolved	Silver	N/A	N/A	ug/L	10	0.0188	0.0188	0.100	0.100	2	8	-	0.0240	0.0790	8	80%	No	--
DP Groundwater	Metals	Dissolved	Sodium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	6,560	47,700	10	100%	No	--
DP Groundwater	Metals	Dissolved	Thallium	N/A	N/A	ug/L	10	0.0292	0.0292	0.500	0.500	7	3	-	0.0310	0.0855	3	30%	No	--
DP Groundwater	Metals	Dissolved	Vanadium	N/A	N/A	ug/L	10	0.488	10.0	10.0	10.0	4	6	-	0.582	2.61	6	60%	No	--
DP Groundwater	Metals	Dissolved	Zinc	N/A	N/A	ug/L	10	2.00	2.00	2.00	2.00	6	-	4	2.00	3.48	4	40%	No	--
DP Groundwater	Butyltins	Total	Dibutyltin	N/A	N/A	ug/L	4	0.000231	0.000287	0.000793	0.000988	4	-	-	-	-	0	0%	Yes	--
DP Groundwater	Butyltins	Total	Monobutyltin	N/A	N/A	ug/L	4	0.000114	0.000142	0.000396	0.000494	2	-	2	0.00520	0.00671	2	50%	Yes	--
DP Groundwater	Butyltins	Total	Tetrabutyltin	N/A	N/A	ug/L	4	0.000600	0.000748	0.00198	0.00247	4	-	-	-	-	0	0%	Yes	--
DP Groundwater	Butyltins	Total	Tributyltin	N/A	N/A	ug/L	4	0.000454	0.000552	0.00142	0.00173	2	-	2	0.00285	0.00435	2	50%	Yes	--
DP Groundwater	Pesticides	Total	4,4'-DDD	N/A	N/A	ug/L	3	0.000453	0.000575	0.00385	0.00488	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	4,4'-DDE	N/A	N/A	ug/L	3	0.000375	0.000476	0.00385	0.00488	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	4,4'-DDT	N/A	N/A	ug/L	3	0.000480	0.000609	0.00385	0.00488	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Aldrin	N/A	N/A	ug/L	3	0.000110	0.000140	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	BHC (alpha)	N/A	N/A	ug/L	3	0.000354	0.000449	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	BHC (beta)	N/A	N/A	ug/L	3	0.000411	0.000521	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	BHC (delta)	N/A	N/A	ug/L	3	0.000226	0.000286	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	BHC (gamma) Lindane	N/A	N/A	ug/L	3	-	-	0.00111	0.00111	0	1	2	0.000930	0.00249	3	100%	Yes	--
DP Groundwater	Pesticides	Total	Chlordane (alpha)	N/A	N/A	ug/L	3	0.000339	0.000429	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(20 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
DP Groundwater	Pesticides	Total	Chlordane (gamma)	N/A	N/A	ug/L	3	0.000461	0.000584	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Dieldrin	N/A	N/A	ug/L	3	0.000290	0.000368	0.00192	0.00244	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Endosulfan I	N/A	N/A	ug/L	3	0.000480	0.000608	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Endosulfan II	N/A	N/A	ug/L	3	0.000411	0.00192	0.00192	0.00244	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Endosulfan Sulfate	N/A	N/A	ug/L	3	0.000517	0.000655	0.00192	0.00244	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Endrin Aldehyde	N/A	N/A	ug/L	3	0.000936	0.00119	0.00192	0.00244	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Endrin Ketone	N/A	N/A	ug/L	3	0.000332	0.000421	0.00192	0.00244	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Endrin	N/A	N/A	ug/L	3	0.000298	0.000378	0.00192	0.00244	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Heptachlor Epoxide	N/A	N/A	ug/L	3	0.000360	0.000456	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Heptachlor	N/A	N/A	ug/L	3	0.000724	0.000919	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Methoxychlor	N/A	N/A	ug/L	3	0.000584	0.000584	0.0109	0.0122	1	2	-	0.000983	0.00521	2	67%	Yes	--
DP Groundwater	Pesticides	Total	Toxaphene	N/A	N/A	ug/L	3	0.0112	0.0142	0.0962	0.122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1016	N/A	N/A	ug/L	7	0.00206	0.00244	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1221	N/A	N/A	ug/L	7	0.00206	0.00244	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1232	N/A	N/A	ug/L	7	0.00206	0.00244	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1242	N/A	N/A	ug/L	7	0.00206	0.00244	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1248	N/A	N/A	ug/L	7	0.00206	0.00244	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1254	N/A	N/A	ug/L	7	0.00227	0.00269	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1260	N/A	N/A	ug/L	7	0.00227	0.00269	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	N/A	N/A	ug/L	7	-	-	-	-	-	-	-	-	-	0	0%	Yes	--
DP Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	N/A	ug/L	4	74.7	89.7	244	293	4	-	-	-	-	0	0%	Yes	--
DP Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	N/A	ug/L	4	92.5	111	487	585	3	1	-	113	113	1	25%	Yes	--
DP Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	N/A	ug/L	6	13.0	13.0	100	100	4	2	-	14.7	20.9	2	33%	Yes	--
DP Groundwater	SVOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	9	0.0117	0.0151	0.190	1.00	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	9	0.0264	0.0340	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	9	0.0349	0.0449	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	9	0.0300	0.0387	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	2,4,5-Trichlorophenol	N/A	N/A	ug/L	6	0.0421	0.0542	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2,4,6-Trichlorophenol	N/A	N/A	ug/L	6	0.0305	0.0393	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2,4-Dichlorophenol	N/A	N/A	ug/L	6	0.0177	0.0228	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2,4-Dimethylphenol	N/A	N/A	ug/L	6	0.174	0.224	0.950	1.22	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2,4-Dinitrophenol	N/A	N/A	ug/L	6	0.197	0.253	0.950	1.22	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2,4-Dinitrotoluene	N/A	N/A	ug/L	9	0.0545	0.0703	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	2,6-Dinitrotoluene	N/A	N/A	ug/L	9	0.0361	0.0465	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	2-Chloronaphthalene	N/A	N/A	ug/L	9	0.00456	0.00588	0.0190	0.0245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	2-Chlorophenol	N/A	N/A	ug/L	6	0.0400	0.0515	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2-Methylnaphthalene	N/A	N/A	ug/L	9	0.0142	0.0149	0.0475	0.0553	3	3	3	0.0195	0.153	6	67%	No	--
DP Groundwater	SVOCs	Total	2-Methylphenol	N/A	N/A	ug/L	6	0.0371	0.0479	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2-Nitroaniline	N/A	N/A	ug/L	9	0.0284	0.0366	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	2-Nitrophenol	N/A	N/A	ug/L	6	0.0406	0.0524	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	3,3'-Dichlorobenzidine	N/A	N/A	ug/L	9	0.178	0.229	0.950	1.22	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	3-Nitroaniline	N/A	N/A	ug/L	9	0.0537	0.0692	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	4,6-Dinitro-2-methylphenol	N/A	N/A	ug/L	6	0.294	0.379	0.950	1.22	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	4-Bromophenyl Phenyl Ether	N/A	N/A	ug/L	9	0.0208	0.0268	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	4-Chloro-3-methylphenol	N/A	N/A	ug/L	6	0.0232	0.0299	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	4-Chloroaniline	N/A	N/A	ug/L	9	0.0687	0.0885	0.285	0.367	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	4-Chlorophenyl Phenyl Ether	N/A	N/A	ug/L	9	0.0306	0.0394	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	4-Nitroaniline	N/A	N/A	ug/L	9	0.0368	0.0475	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	4-Nitrophenol	N/A	N/A	ug/L	6	0.112	0.144	0.950	1.22	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	Acenaphthene	N/A	N/A	ug/L	9	0.00323	0.00356	0.0190	0.0245	4	5	-	0.00547	0.0230	5	56%	No	--
DP Groundwater	SVOCs	Total	Acenaphthylene	N/A	N/A	ug/L	9	0.00228	0.00294	0.0190	0.0245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Aniline	N/A	N/A	ug/L	9	0.0310	0.367	0.285	0.367	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Anthracene	N/A	N/A	ug/L	9	0.00180	0.00209	0.0190	0.0245	8	1	-	0.0126	0.0126	1	11%	No	--
DP Groundwater	SVOCs	Total	Benzidine	N/A	N/A	ug/L	9	0.950	1.22	0.950	1.22	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Benzo(a)anthracene	N/A	N/A	ug/L	9	0.00494	0.00636	0.0190	0.0245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Benzo(a)pyrene	N/A	N/A	ug/L	9	0.00313	0.00363	0.0190	0.0245	8	1	-	0.00895	0.00895	1	11%	No	--
DP Groundwater	SVOCs	Total	Benzo(g,h,i)perylene	N/A	N/A	ug/L	9	0.00484	0.00624	0.0190	0.0245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Benzofluoranthenes, Total	N/A	N/A	ug/L	9	0.0113	0.0131	0.0950	0.122	8	1	-	0.0173	0.0173	1	11%	No	--
DP Groundwater	SVOCs	Total	Benzoic Acid	N/A	N/A	ug/L	6	0.127	0.164	0.950	1.22	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	Benzyl Alcohol	N/A	N/A	ug/L	7	0.0404	0.0520	0.190	0.245	5	2	-	0.0500	0.0523	2	29%	Yes	--

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(21 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
DP Groundwater	SVOCs	Total	Bis(2-chloroethoxy)methane	N/A	N/A	ug/L	9	0.0172	0.0222	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Bis(2-chloroethyl) Ether	N/A	N/A	ug/L	9	0.0308	0.0397	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Bis(2-chloroisopropyl) Ether	N/A	N/A	ug/L	9	0.0407	0.0525	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	N/A	ug/L	9	0.362	0.466	1.42	1.84	8	1	-	0.408	0.408	1	11%	No	--
DP Groundwater	SVOCs	Total	Butyl Benzyl Phthalate	N/A	N/A	ug/L	9	0.102	0.285	0.285	0.367	3	6	-	0.120	0.228	6	67%	No	--
DP Groundwater	SVOCs	Total	Carbazole	N/A	N/A	ug/L	9	0.0206	0.0266	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Chrysene	N/A	N/A	ug/L	9	0.00798	0.0103	0.0190	0.0245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Dibenz(a,h)anthracene	N/A	N/A	ug/L	9	0.00294	0.00341	0.0190	0.0245	8	1	-	0.00671	0.00671	1	11%	No	--
DP Groundwater	SVOCs	Total	Dibenzofuran	N/A	N/A	ug/L	9	0.0195	0.0215	0.190	0.245	7	2	-	0.0237	0.0421	2	22%	No	--
DP Groundwater	SVOCs	Total	Diethyl Phthalate	N/A	N/A	ug/L	9	0.0529	0.0682	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Dimethyl Phthalate	N/A	N/A	ug/L	9	0.0370	0.0477	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Di-n-butyl Phthalate	N/A	N/A	ug/L	9	0.190	0.608	0.190	0.608	3	5	1	0.100	0.239	6	67%	No	--
DP Groundwater	SVOCs	Total	Di-n-octyl Phthalate	N/A	N/A	ug/L	9	0.0259	0.0334	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Fluoranthene	N/A	N/A	ug/L	9	0.00541	0.00626	0.0190	0.0220	8	-	1	0.0311	0.0311	1	11%	No	--
DP Groundwater	SVOCs	Total	Fluorene	N/A	N/A	ug/L	9	0.00161	0.00178	0.0190	0.0221	3	5	1	0.00584	0.0351	6	67%	No	--
DP Groundwater	SVOCs	Total	Hexachlorobenzene	N/A	N/A	ug/L	9	0.0237	0.0306	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	9	0.0140	0.0180	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Hexachlorocyclopentadiene	N/A	N/A	ug/L	9	0.294	0.379	0.950	1.22	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Hexachloroethane	N/A	N/A	ug/L	9	0.0362	0.0466	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Indeno(1,2,3-cd)pyrene	N/A	N/A	ug/L	9	0.00266	0.00308	0.0190	0.0245	8	1	-	0.00797	0.00797	1	11%	No	--
DP Groundwater	SVOCs	Total	Isophorone	N/A	N/A	ug/L	9	0.0278	0.0311	0.190	0.245	7	2	-	0.0486	0.0842	2	22%	No	--
DP Groundwater	SVOCs	Total	Naphthalene	N/A	N/A	ug/L	9	0.0165	0.0191	0.0475	1.00	5	4	-	0.0222	0.0452	4	44%	No	--
DP Groundwater	SVOCs	Total	Nitrobenzene	N/A	N/A	ug/L	9	0.0494	0.0636	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	N-Nitrosodimethylamine	N/A	N/A	ug/L	9	0.950	1.22	0.950	1.22	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	N-Nitrosodi-n-propylamine	N/A	N/A	ug/L	9	0.0350	0.0452	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	N-Nitrosodiphenylamine	N/A	N/A	ug/L	9	0.00807	0.0104	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	N/A	ug/L	6	0.0419	0.0540	0.380	0.490	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	Pentachlorophenol	N/A	N/A	ug/L	6	0.190	0.245	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	Phenanthrene	N/A	N/A	ug/L	9	0.00351	0.00351	0.0190	0.0221	1	7	1	0.00759	0.144	8	89%	No	--
DP Groundwater	SVOCs	Total	Phenol	N/A	N/A	ug/L	8	0.00437	0.00563	0.190	0.245	3	5	-	0.0111	0.0291	5	63%	No	--
DP Groundwater	SVOCs	Total	Pyrene	N/A	N/A	ug/L	9	0.00275	0.00319	0.0190	0.0220	6	2	1	0.00317	0.0261	3	33%	No	--
DP Groundwater	SVOCs	Dissolved	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	8	0.0120	0.0139	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	1,2-Dichlorobenzene	N/A	N/A	ug/L	8	0.0272	0.0313	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	1,3-Dichlorobenzene	N/A	N/A	ug/L	8	0.0359	0.0413	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	1,4-Dichlorobenzene	N/A	N/A	ug/L	8	0.0310	0.0356	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	2,4,5-Trichlorophenol	N/A	N/A	ug/L	3	0.0457	0.0499	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2,4,6-Trichlorophenol	N/A	N/A	ug/L	3	0.0331	0.0361	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2,4-Dichlorophenol	N/A	N/A	ug/L	3	0.0192	0.0209	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2,4-Dimethylphenol	N/A	N/A	ug/L	3	0.189	0.206	1.03	1.13	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2,4-Dinitrophenol	N/A	N/A	ug/L	3	0.214	0.233	1.03	1.13	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2,4-Dinitrotoluene	N/A	N/A	ug/L	8	0.0562	0.0646	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	2,6-Dinitrotoluene	N/A	N/A	ug/L	8	0.0372	0.0428	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	2-Chloronaphthalene	N/A	N/A	ug/L	8	0.00470	0.00541	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	2-Chlorophenol	N/A	N/A	ug/L	3	0.0434	0.0474	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2-Methylnaphthalene	N/A	N/A	ug/L	8	0.0147	0.0168	0.0490	0.0563	2	4	2	0.0158	0.280	6	75%	No	--
DP Groundwater	SVOCs	Dissolved	2-Methylphenol	N/A	N/A	ug/L	3	0.0404	0.0440	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2-Nitroaniline	N/A	N/A	ug/L	8	0.0293	0.0337	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	2-Nitrophenol	N/A	N/A	ug/L	3	0.0442	0.0482	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	3,3'-Dichlorobenzidine	N/A	N/A	ug/L	8	0.183	0.211	0.979	1.13	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	3-Nitroaniline	N/A	N/A	ug/L	8	0.0553	0.0636	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	4,6-Dinitro-2-methylphenol	N/A	N/A	ug/L	3	0.320	0.349	1.03	1.13	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	4-Bromophenyl Phenyl Ether	N/A	N/A	ug/L	8	0.0214	0.0247	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	4-Chloro-3-methylphenol	N/A	N/A	ug/L	3	0.0252	0.0275	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	4-Chloroaniline	N/A	N/A	ug/L	8	0.0708	0.0814	0.294	0.338	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	4-Chlorophenyl Phenyl Ether	N/A	N/A	ug/L	8	0.0315	0.0363	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	4-Nitroaniline	N/A	N/A	ug/L	8	0.0380	0.0437	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	4-Nitrophenol	N/A	N/A	ug/L	3	0.122	0.133	1.03	1.13	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	Acenaphthene	N/A	N/A	ug/L	8	0.00333	0.00345	0.0196	0.0225	3	4	1	0.00491	0.0348	5	63%	No	--
DP Groundwater	SVOCs	Dissolved	Acenaphthylene	N/A	N/A	ug/L	8	0.00235	0.00270	0.0196	0.0225	7	1	-	0.00361	0.00361	1	13%	No	--
DP Groundwater	SVOCs	Dissolved	Anthracene	N/A	N/A	ug/L	8	0.00186	0.00214	0.0196	0.0225	8	-	-	-	-	0	0%	No	--

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(22 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%? [1]
DP Groundwater	SVOCs	Dissolved	Benzidine	N/A	N/A	ug/L	8	0.979	1.13	0.979	1.13	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Benzo(a)anthracene	N/A	N/A	ug/L	8	0.00509	0.00586	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Benzo(a)pyrene	N/A	N/A	ug/L	8	0.00323	0.00372	0.0196	0.0225	7	1	-	0.00714	0.00714	1	13%	No	--
DP Groundwater	SVOCs	Dissolved	Benzo(g,h,i)perylene	N/A	N/A	ug/L	8	0.00500	0.00574	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Benzofluoranthenes, Total	N/A	N/A	ug/L	8	0.0117	0.0134	0.0979	0.113	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Benzoic Acid	N/A	N/A	ug/L	4	0.138	0.151	1.03	1.21	3	1	-	0.317	0.317	1	25%	Yes	--
DP Groundwater	SVOCs	Dissolved	Benzyl Alcohol	N/A	N/A	ug/L	3	0.0439	0.0479	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	Bis(2-chloroethoxy)methane	N/A	N/A	ug/L	8	0.0177	0.0204	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Bis(2-chloroethyl) Ether	N/A	N/A	ug/L	8	0.0317	0.0365	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Bis(2-chloroisopropyl) Ether	N/A	N/A	ug/L	8	0.0420	0.0483	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Bis(2-ethylhexyl) Phthalate	N/A	N/A	ug/L	8	0.373	0.429	1.47	1.69	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Butyl Benzyl Phthalate	N/A	N/A	ug/L	8	0.327	0.338	0.294	0.363	2	6	-	0.108	0.155	6	75%	No	--
DP Groundwater	SVOCs	Dissolved	Carbazole	N/A	N/A	ug/L	8	0.0213	0.0244	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Chrysene	N/A	N/A	ug/L	8	0.00823	0.00946	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Dibenz(a,h)anthracene	N/A	N/A	ug/L	8	0.00304	0.00349	0.0196	0.0225	7	1	-	0.00381	0.00381	1	13%	No	--
DP Groundwater	SVOCs	Dissolved	Dibenzofuran	N/A	N/A	ug/L	8	0.0201	0.0231	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Diethyl Phthalate	N/A	N/A	ug/L	8	0.0546	0.0584	0.196	0.225	5	3	-	0.0585	0.101	3	38%	No	--
DP Groundwater	SVOCs	Dissolved	Dimethyl Phthalate	N/A	N/A	ug/L	8	0.0382	0.0439	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Di-n-butyl Phthalate	N/A	N/A	ug/L	8	0.218	0.275	0.196	0.275	2	6	-	0.124	0.207	6	75%	No	--
DP Groundwater	SVOCs	Dissolved	Di-n-octyl Phthalate	N/A	N/A	ug/L	8	0.0267	0.0307	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Fluoranthene	N/A	N/A	ug/L	8	0.00558	0.00642	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Fluorene	N/A	N/A	ug/L	8	0.00167	0.00191	0.0196	0.0225	3	5	-	0.00654	0.0116	5	63%	No	--
DP Groundwater	SVOCs	Dissolved	Hexachlorobenzene	N/A	N/A	ug/L	8	0.0245	0.0282	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Hexachlorobutadiene	N/A	N/A	ug/L	8	0.0144	0.0166	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Hexachlorocyclopentadiene	N/A	N/A	ug/L	8	0.304	0.349	0.979	1.13	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Hexachloroethane	N/A	N/A	ug/L	8	0.0373	0.0429	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Indeno(1,2,3-cd)pyrene	N/A	N/A	ug/L	8	0.00274	0.00315	0.0196	0.0225	7	1	-	0.00630	0.00630	1	13%	No	--
DP Groundwater	SVOCs	Dissolved	Isophorone	N/A	N/A	ug/L	8	0.0277	0.0297	0.196	0.225	6	2	-	0.0483	0.0782	2	25%	No	--
DP Groundwater	SVOCs	Dissolved	Naphthalene	N/A	N/A	ug/L	8	0.0190	0.0196	0.0502	0.0605	2	3	3	0.0289	0.200	6	75%	No	--
DP Groundwater	SVOCs	Dissolved	Nitrobenzene	N/A	N/A	ug/L	8	0.0509	0.0586	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	N-Nitrosodimethylamine	N/A	N/A	ug/L	8	0.979	1.13	0.979	1.13	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	N-Nitrosodi-n-propylamine	N/A	N/A	ug/L	8	0.0361	0.0416	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	N-Nitrosodiphenylamine	N/A	N/A	ug/L	8	0.00833	0.00957	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	p-cresol (4-Methylphenol)	N/A	N/A	ug/L	3	0.0455	0.0497	0.413	0.450	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	Pentachlorophenol	N/A	N/A	ug/L	3	0.206	0.225	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	Phenanthrene	N/A	N/A	ug/L	8	0.00403	0.00417	0.0196	0.0225	2	6	-	0.00427	0.0190	6	75%	No	--
DP Groundwater	SVOCs	Dissolved	Phenol	N/A	N/A	ug/L	4	0.00483	0.00483	0.196	0.225	1	3	-	0.00999	0.0248	3	75%	Yes	--
DP Groundwater	SVOCs	Dissolved	Pyrene	N/A	N/A	ug/L	8	0.00284	0.00327	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	N/A	ug/L	10	0.0528	0.0528	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/L	10	0.0477	0.0477	1.00	1.00	3	6	1	0.0701	2.22	7	70%	No	--
DP Groundwater	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	N/A	ug/L	10	0.0680	0.0680	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,1,2-Trichloroethane	N/A	N/A	ug/L	10	0.0627	0.0627	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	N/A	ug/L	10	0.0360	0.0360	1.00	1.00	5	4	1	0.0555	2.52	5	50%	No	--
DP Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	N/A	ug/L	10	0.0595	0.0595	1.00	1.00	8	1	1	0.0624	1.16	2	20%	No	--
DP Groundwater	VOCs	Total	1,1-Dichloropropene	N/A	N/A	ug/L	10	0.0695	0.0695	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2,3-Trichlorobenzene	N/A	N/A	ug/L	10	0.0605	0.0605	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2,3-Trichloropropane	N/A	N/A	ug/L	10	0.123	0.123	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	10	0.0513	1.00	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	N/A	ug/L	10	0.0283	0.0283	1.00	1.00	7	3	-	0.0317	0.0485	3	30%	No	--
DP Groundwater	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	N/A	ug/L	10	0.222	0.222	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	N/A	ug/L	10	0.0637	0.0637	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	10	0.0383	0.0383	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	N/A	ug/L	10	0.0533	0.0533	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2-Dichloropropane	N/A	N/A	ug/L	10	0.0380	0.0380	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,3,5-Trimethylbenzene	N/A	N/A	ug/L	10	0.0249	0.0249	1.00	1.00	9	1	-	0.0297	0.0297	1	10%	No	--
DP Groundwater	VOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	10	0.0599	0.0599	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,3-Dichloropropane	N/A	N/A	ug/L	10	0.0738	0.0738	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	10	0.0180	0.0180	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	N/A	ug/L	10	0.0487	0.0487	1.00	1.00	7	3	-	0.117	0.179	3	30%	No	--
DP Groundwater	VOCs	Total	2-Butanone (MEK)	N/A	N/A	ug/L	10	1.71	1.71	5.00	5.00	10	-	-	-	-	0	0%	No	--

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(23 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
DP Groundwater	VOCs	Total	2-Chlorotoluene	N/A	N/A	ug/L	10	0.0857	0.0857	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	2-Hexanone	N/A	N/A	ug/L	10	0.993	0.993	5.00	5.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	4-Chlorotoluene	N/A	N/A	ug/L	10	0.0491	0.0491	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	4-Isopropyltoluene	N/A	N/A	ug/L	10	0.0397	0.0397	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	N/A	ug/L	10	0.309	0.309	5.00	5.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Acetone	N/A	N/A	ug/L	10	1.20	1.20	5.00	5.00	7	3	-	1.22	3.88	3	30%	No	--
DP Groundwater	VOCs	Total	Benzene	N/A	N/A	ug/L	10	0.0417	0.0417	1.00	1.00	4	6	-	0.0545	0.137	6	60%	No	--
DP Groundwater	VOCs	Total	Bromobenzene	N/A	N/A	ug/L	10	0.0475	0.0475	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Bromochloromethane	N/A	N/A	ug/L	10	0.0573	0.0573	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Bromodichloromethane	N/A	N/A	ug/L	10	0.0785	0.0785	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Bromoform	N/A	N/A	ug/L	10	0.0830	0.0830	1.00	1.00	9	1	-	0.151	0.151	1	10%	No	--
DP Groundwater	VOCs	Total	Bromomethane	N/A	N/A	ug/L	10	0.0748	1.00	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Carbon Disulfide	N/A	N/A	ug/L	10	0.0494	1.00	1.00	1.00	9	1	-	0.0619	0.0619	1	10%	No	--
DP Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	N/A	ug/L	10	0.0970	0.0970	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Chlorobenzene	N/A	N/A	ug/L	10	0.0376	0.0376	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Chloroethane	N/A	N/A	ug/L	10	0.187	0.187	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Chloroform	N/A	N/A	ug/L	10	0.0717	0.0717	1.00	1.00	8	2	-	0.0907	0.174	2	20%	No	--
DP Groundwater	VOCs	Total	Chloromethane	N/A	N/A	ug/L	10	0.110	0.110	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/L	10	0.0433	0.0433	1.00	1.00	1	3	6	0.0948	341	9	90%	No	--
DP Groundwater	VOCs	Total	cis-1,3-Dichloropropene	N/A	N/A	ug/L	10	0.0301	0.0301	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Dibromochloromethane	N/A	N/A	ug/L	10	0.0539	0.0539	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Dibromomethane	N/A	N/A	ug/L	10	0.0864	0.0864	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Dichlorodifluoromethane	N/A	N/A	ug/L	10	0.0575	0.0575	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	N/A	ug/L	10	0.0752	1.00	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Ethylbenzene	N/A	N/A	ug/L	10	0.0226	1.00	1.00	1.00	6	4	-	0.0357	0.0447	4	40%	No	--
DP Groundwater	VOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	10	0.152	0.152	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Isopropylbenzene	N/A	N/A	ug/L	10	0.0165	0.0165	1.00	1.00	9	1	-	0.0197	0.0197	1	10%	No	--
DP Groundwater	VOCs	Total	m,p-Xylenes	N/A	N/A	ug/L	10	0.0718	0.0718	2.00	2.00	6	4	-	0.0823	0.132	4	40%	No	--
DP Groundwater	VOCs	Total	Naphthalene	N/A	N/A	ug/L	10	0.0317	1.00	1.00	1.00	8	2	-	0.0359	0.0452	2	20%	No	--
DP Groundwater	VOCs	Total	n-Butylbenzene	N/A	N/A	ug/L	10	0.0603	0.0603	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	n-Propylbenzene	N/A	N/A	ug/L	10	0.0356	0.0356	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	o-Xylene	N/A	N/A	ug/L	10	0.0265	0.0265	1.00	1.00	6	4	-	0.0304	0.0735	4	40%	No	--
DP Groundwater	VOCs	Total	sec-Butylbenzene	N/A	N/A	ug/L	10	0.0358	0.0358	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Styrene	N/A	N/A	ug/L	10	0.0279	0.0279	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	tert-Butylbenzene	N/A	N/A	ug/L	10	0.0535	0.0535	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	N/A	ug/L	10	-	-	1.00	1.00	0	3	7	0.336	54.5	10	100%	No	--
DP Groundwater	VOCs	Total	Toluene	N/A	N/A	ug/L	10	0.0588	1.00	1.00	1.00	4	6	-	0.0917	0.299	6	60%	No	--
DP Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	N/A	ug/L	10	0.0584	0.0584	1.00	1.00	7	1	2	0.0955	1.80	3	30%	No	--
DP Groundwater	VOCs	Total	trans-1,3-Dichloropropene	N/A	N/A	ug/L	10	0.0539	0.0539	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/L	10	0.0641	0.0641	1.00	1.00	1	5	4	0.0904	43.7	9	90%	No	--
DP Groundwater	VOCs	Total	Trichlorofluoromethane	N/A	N/A	ug/L	10	0.0620	0.0620	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Vinyl Acetate	N/A	N/A	ug/L	10	0.320	1.01	5.00	5.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Vinyl Chloride	N/A	N/A	ug/L	10	0.0604	0.0604	1.00	1.00	8	2	-	0.132	0.611	2	20%	No	--
Soil Gas	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/m^3	5	-	-	8.30	690	0	4	1	5.20	98.0	5	100%	Yes	--
Soil Gas	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	N/A	ug/m^3	5	1.90	110	10.0	590	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	1,1,2-Trichloroethane	N/A	N/A	ug/m^3	5	2.00	110	8.30	470	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	1,1-Dichloroethane	N/A	N/A	ug/m^3	5	0.980	56.0	6.10	350	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	1,1-Dichloroethene	N/A	N/A	ug/m^3	5	0.840	48.0	6.00	340	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/m^3	5	12.0	660	45.0	2,600	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	1,2,4-Trimethylbenzene	N/A	N/A	ug/m^3	5	-	-	-	-	0	-	5	95.0	18,500	5	100%	Yes	--
Soil Gas	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	N/A	ug/m^3	5	1.20	66.0	12.0	660	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/m^3	5	1.60	93.0	9.10	520	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	N/A	ug/m^3	5	0.860	49.0	6.10	350	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	1,2-Dichloropropane	N/A	N/A	ug/m^3	5	0.980	56.0	7.00	400	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	1,3,5-Trimethylbenzene	N/A	N/A	ug/m^3	5	-	-	-	-	0	-	5	30.0	6,250	5	100%	Yes	--
Soil Gas	VOCs	Total	1,3-Butadiene	N/A	N/A	ug/m^3	5	23.0	23.0	4.90	190	1	1	3	2.20	210	4	80%	Yes	--
Soil Gas	VOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/m^3	5	1.80	100	9.10	520	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/m^3	5	1.80	100	9.10	520	5	-	-	-	-	0	0%	Yes	--

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(24 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil Gas	VOCs	Total	1,4-Dioxane	N/A	N/A	ug/m^3	5	1.10	43.0	22.0	1,200	4	1	-	1.10	1.10	1	20%	Yes	--
Soil Gas	VOCs	Total	2,2,4-Trimethylpentane	N/A	N/A	ug/m^3	5	1.20	48.0	7.10	400	4	1	-	1.80	1.80	1	20%	Yes	--
Soil Gas	VOCs	Total	2-Butanone (MEK)	N/A	N/A	ug/m^3	5	1.70	66.0	6.50	250	3	-	2	16.0	31.0	2	40%	Yes	--
Soil Gas	VOCs	Total	2-Hexanone	N/A	N/A	ug/m^3	5	2.40	130	25.0	1,400	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	2-Propanol	N/A	N/A	ug/m^3	5	1.50	84.0	15.0	840	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	3-Chloropropene	N/A	N/A	ug/m^3	5	2.60	150	19.0	1,100	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	4-Ethyltoluene	N/A	N/A	ug/m^3	5	-	-	-	-	0	-	5	74.0	9,150	5	100%	Yes	--
Soil Gas	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	N/A	ug/m^3	5	1.10	42.0	6.20	350	4	1	-	2.10	2.10	1	20%	Yes	--
Soil Gas	VOCs	Total	Acetone	N/A	N/A	ug/m^3	5	4.70	86.0	21.0	820	3	-	2	83.0	97.0	2	40%	Yes	--
Soil Gas	VOCs	Total	alpha-Chlorotoluene	N/A	N/A	ug/m^3	5	1.60	89.0	7.80	440	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Benzene	N/A	N/A	ug/m^3	5	27.0	27.0	7.10	270	1	2	2	2.10	85.0	4	80%	Yes	--
Soil Gas	VOCs	Total	Bromodichloromethane	N/A	N/A	ug/m^3	5	0.610	34.0	10.0	580	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Bromoform	N/A	N/A	ug/m^3	5	3.10	180	16.0	890	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Bromomethane	N/A	N/A	ug/m^3	5	1.40	80.0	5.90	330	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Carbon Disulfide	N/A	N/A	ug/m^3	5	4.70	27.0	4.70	270	2	2	1	1.80	42.0	3	60%	Yes	--
Soil Gas	VOCs	Total	Carbon Tetrachloride	N/A	N/A	ug/m^3	5	1.10	65.0	9.50	540	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Chlorobenzene	N/A	N/A	ug/m^3	5	1.10	63.0	7.00	400	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Chloroethane	N/A	N/A	ug/m^3	5	0.640	36.0	4.00	230	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Chloroform	N/A	N/A	ug/m^3	5	1.10	42.0	7.40	420	4	1	-	0.750	0.750	1	20%	Yes	--
Soil Gas	VOCs	Total	Chloromethane	N/A	N/A	ug/m^3	5	0.940	53.0	12.0	710	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/m^3	5	-	-	19.0	500	0	2	3	8.60	330	5	100%	Yes	--
Soil Gas	VOCs	Total	cis-1,3-Dichloropropene	N/A	N/A	ug/m^3	5	0.550	31.0	6.90	390	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Cyclohexane	N/A	N/A	ug/m^3	5	0.760	30.0	5.20	300	2	2	1	1.80	24.0	3	60%	Yes	--
Soil Gas	VOCs	Total	Dibromochloromethane	N/A	N/A	ug/m^3	5	1.80	100	13.0	730	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Dichlorodifluoromethane	N/A	N/A	ug/m^3	5	4.20	76.0	7.50	420	3	2	-	3.00	3.20	2	40%	Yes	--
Soil Gas	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	N/A	ug/m^3	5	1.50	60.0	5.30	300	4	1	-	1.80	1.80	1	20%	Yes	--
Soil Gas	VOCs	Total	Ethanol	N/A	N/A	ug/m^3	5	5.70	100	17.0	650	3	1	1	13.0	13.0	2	40%	Yes	--
Soil Gas	VOCs	Total	Ethylbenzene	N/A	N/A	ug/m^3	5	-	-	-	-	0	-	5	25.0	1,550	5	100%	Yes	--
Soil Gas	VOCs	Total	Freon 113	N/A	N/A	ug/m^3	5	1.20	66.0	12.0	660	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Freon 114	N/A	N/A	ug/m^3	5	1.50	84.0	10.0	600	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Heptane	N/A	N/A	ug/m^3	5	9.00	9.00	9.00	520	1	2	2	7.60	87.0	4	80%	Yes	--
Soil Gas	VOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/m^3	5	17.0	970	65.0	3,700	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Hexane	N/A	N/A	ug/m^3	5	42.0	42.0	7.80	300	1	2	2	1.30	110	4	80%	Yes	--
Soil Gas	VOCs	Total	Isopropylbenzene	N/A	N/A	ug/m^3	5	-	-	7.40	24.0	0	2	3	4.30	675	5	100%	Yes	--
Soil Gas	VOCs	Total	m,p-Xylenes	N/A	N/A	ug/m^3	5	-	-	-	-	0	-	5	61.0	5,850	5	100%	Yes	--
Soil Gas	VOCs	Total	Methyl tert-butyl ether	N/A	N/A	ug/m^3	5	1.40	81.0	5.50	310	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	n-Propylbenzene	N/A	N/A	ug/m^3	5	-	-	24.0	24.0	0	1	4	16.0	2,300	5	100%	Yes	--
Soil Gas	VOCs	Total	o-Xylene	N/A	N/A	ug/m^3	5	-	-	-	-	0	-	5	28.0	2,800	5	100%	Yes	--
Soil Gas	VOCs	Total	Styrene	N/A	N/A	ug/m^3	5	1.30	73.0	6.40	370	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Tetrachloroethene (PCE)	N/A	N/A	ug/m^3	5	-	-	-	-	0	-	5	610	34,000	5	100%	Yes	--
Soil Gas	VOCs	Total	Tetrahydrofuran	N/A	N/A	ug/m^3	5	1.10	61.0	4.50	250	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Toluene	N/A	N/A	ug/m^3	5	-	-	-	-	0	-	5	300	47,500	5	100%	Yes	--
Soil Gas	VOCs	Total	trans-1,2-Dichloroethene	N/A	N/A	ug/m^3	5	2.60	100	6.00	340	4	1	-	4.00	4.00	1	20%	Yes	--
Soil Gas	VOCs	Total	trans-1,3-Dichloropropene	N/A	N/A	ug/m^3	5	0.960	55.0	6.90	390	5	-	-	-	-	0	0%	Yes	--
Soil Gas	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/m^3	5	-	-	680	680	0	1	4	27.0	610	5	100%	Yes	--
Soil Gas	VOCs	Total	Trichlorofluoromethane	N/A	N/A	ug/m^3	5	1.70	68.0	8.50	480	4	1	-	2.20	2.20	1	20%	Yes	--
Soil Gas	VOCs	Total	Vinyl Chloride	N/A	N/A	ug/m^3	5	0.930	53.0	3.90	220	5	-	-	-	-	0	0%	Yes	--

Notes
(1) Only evaluated for analytes with a sample size of 20 or more.
If all samples were NDs (detection rate=0%), or if there was only one distinct detected result, or if there were four or fewer samples and the data set contained NDs, the mean and standard deviation are not shown.
If there were two or more distinct detected results, but not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.
Minimum and maximum detected values are not shown if all samples were NDs.
Minimum and maximum MDLs/MRLs for NDs are not shown if all samples had detected results.
The erodible soil subset is comprised of the following samples: SB-EUA, SB-EUB, SB-EUA-02, SB-EUA-04, SB-EUA-06, SB-EUA-08, SB-EUB-02, SB-EUB-03, SB-EUB-12, SB-EUB-15, and SB-04.

Table I-2
Data Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(25 of 25)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]

'--' = Not evaluated
% = percent
DP = Direct Push
Max = maximum
MDL = method detection limit
mg/kg = milligrams per kilogram
Min = minimum
MRL = methode reporting limit
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SVOC = semi-volatile organic carbon
VOC = volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
ug/m^3 = micrograms per cubic meter

Table I-3
Data Summary for Pistol Range AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 1)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	Metals	Total	Antimony	0-1 ft	mg/kg	5	5.00	6.00	5.00	6.00	5	-	-	-	-	0	0%	Yes	--
Soil	Metals	Total	Arsenic	0-1 ft	mg/kg	5	5.00	6.00	5.00	6.00	5	-	-	-	-	0	0%	Yes	--
Soil	Metals	Total	Copper	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	15.6	53.1	14	100%	No	--
Soil	Metals	Total	Lead	0-1 ft	mg/kg	63	-	-	-	-	0	-	63	7.50	1,110	63	100%	No	Yes
Soil	Metals	Total	Mercury	0-1 ft	mg/kg	14	0.0400	0.0600	0.0400	0.0600	14	-	-	-	-	0	0%	No	--
Soil	Metals	Total	Nickel	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	19.0	32.0	10	100%	No	--
Soil	Metals	Total	Zinc	0-1 ft	mg/kg	10	-	-	-	-	0	-	10	74.0	199	10	100%	No	--
Lagoon Sediment	Metals	Total	Copper	N/A	mg/kg	5	-	-	-	-	0	-	5	20.2	25.4	5	100%	Yes	--
Lagoon Sediment	Metals	Total	Lead	N/A	mg/kg	5	-	-	-	-	0	-	5	20.0	33.0	5	100%	Yes	--
Lagoon Sediment	Metals	Total	Nickel	N/A	mg/kg	5	-	-	-	-	0	-	5	12.9	15.4	5	100%	Yes	--
Lagoon Sediment	Metals	Total	Zinc	N/A	mg/kg	5	-	-	-	-	0	-	5	128	174	5	100%	Yes	--
DP Groundwater	Metals	Total	Copper	N/A	ug/L	2	-	-	-	-	0	-	2	40.0	54.8	2	100%	Yes	--
DP Groundwater	Metals	Total	Lead	N/A	ug/L	2	-	-	-	-	0	-	2	10.5	12.6	2	100%	Yes	--
DP Groundwater	Metals	Total	Nickel	N/A	ug/L	2	-	-	40.0	40.0	0	1	1	21.4	50.1	2	100%	Yes	--
DP Groundwater	Metals	Total	Zinc	N/A	ug/L	2	-	-	-	-	0	-	2	78.1	149	2	100%	Yes	--
DP Groundwater	Metals	Dissolved	Copper	N/A	ug/L	2	-	-	-	-	0	-	2	0.665	0.800	2	100%	Yes	--
DP Groundwater	Metals	Dissolved	Lead	N/A	ug/L	2	0.0200	0.0200	0.0200	0.0200	2	-	-	-	-	0	0%	Yes	--
DP Groundwater	Metals	Dissolved	Nickel	N/A	ug/L	2	2.00	2.00	20.0	20.0	1	1	-	3.90	3.90	1	50%	Yes	--
DP Groundwater	Metals	Dissolved	Zinc	N/A	ug/L	2	-	-	10.0	10.0	0	2	-	2.10	4.10	2	100%	Yes	--

Notes
(1) Only evaluated for analytes with a sample size of 20 or more.
If all samples were NDs (detection rate=0%), or if there was only one distinct detected result, or if there were four or fewer samples and the data set contained NDs, the mean and standard deviation are not shown.
If there were two or more distinct detected results, but not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.
Minimum and maximum detected values are not shown if all samples were NDs.
Minimum and maximum MDLs for NDs are not shown if all samples had detected results.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.
All concentrations are totals.

'--' = Not evaluated
% = percent
DP = Direct Push
Max = maximum
MDL = method detection limit
mg/kg = milligrams per kilogram
Min = minimum
MRL = methode reporting limit
ND = non-detect
ug/kg = micrograms per kilogram
ug/L = micrograms per liter

Table I-4
Data Summary for Bulb Slope AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 1)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	Metals	Total	Lead	0-1 ft	mg/kg	12	-	-	-		0	-	12	25.0	597	12	100%	No	--
Soil	Metals	Total	Mercury	0-1 ft	mg/kg	12	-	-	-		0	-	12	0.0500	1.54	12	100%	No	--
Soil	PCB Aroclors	Total	Aroclor 1016	0-1 ft	ug/kg	12	19.0	67.0	19.0	67.0	12	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1221	0-1 ft	ug/kg	12	38.0	134	38.0	134.0	12	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1232	0-1 ft	ug/kg	12	19.0	67.0	19.0	67.0	12	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1242	0-1 ft	ug/kg	12	19.0	67.0	19.0	67.0	12	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1248	0-1 ft	ug/kg	12	19.0	67.0	19.0	67.0	12	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1254	0-1 ft	ug/kg	12	19.0	67.0	19.0	67.0	12	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1260	0-1 ft	ug/kg	12	19.0	67.0	19.0	67.0	4	-	8	27.0	251	8	67%	No	--
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	ug/kg	12	19.0	67.0	19.0	67.0	-	-	-	27.0	251	8	67%	No	--
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	mg/kg	8	-	-	-		0	-	8	8.30	170	8	100%	No	--
Soil	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	mg/kg	8	-	-	-		0	-	8	44.0	410	8	100%	No	--

Notes
(1) Only evaluated for analytes with a sample size of 20 or more.
If all samples were NDs (detection rate=0%), or if there was only one distinct detected result, or if there were four or fewer samples and the data set contained NDs, the mean and standard deviation are not shown.
If there were two or more distinct detected results, but not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.
Minimum and maximum detected values are not shown if all samples were NDs.
Minimum and maximum MDLs for NDs are not shown if all samples had detected results.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.
All concentrations are totals.

'--' = Not evaluated
% = percent
Max = maximum
MDL = method detection limit
mg/kg = milligrams per kilogram
Min = minimum
MRL = methode reporting limit
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
PCB = polychlorinated biphenyl
ug/kg = micrograms per kilogram

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(1 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Soil	Metals	Total	Aluminum	0-1 ft	N/A	mg/kg	68	-	-	-	-	0	-	68	1,530	24,300	68	100%	No	Yes
Soil	Metals	Total	Aluminum	0-3 ft	N/A	mg/kg	87	-	-	-	-	0	-	87	1,530	24,300	87	100%	No	Yes
Soil	Metals	Total	Aluminum	0-10 ft	N/A	mg/kg	104	-	-	-	-	0	-	104	1,530	24,300	104	100%	No	Yes
Soil	Metals	Total	Antimony	0-1 ft	N/A	mg/kg	83	0.160	6.00	0.160	6.00	38	25	20	0.0895	13.7	45	54%	No	Yes
Soil	Metals	Total	Antimony	0-3 ft	N/A	mg/kg	102	0.160	6.00	0.160	6.00	41	37	24	0.0700	13.7	61	60%	No	Yes
Soil	Metals	Total	Antimony	0-10 ft	N/A	mg/kg	119	0.160	6.00	0.160	6.00	41	40	38	0.0700	13.7	78	66%	No	Yes
Soil	Metals	Total	Arsenic	0-1 ft	N/A	mg/kg	84	0.159	6.00	0.907	6.00	6	3	75	0.613	80.9	78	93%	No	Yes
Soil	Metals	Total	Arsenic	0-3 ft	N/A	mg/kg	103	0.159	6.00	0.907	6.00	6	3	94	0.613	80.9	97	94%	No	Yes
Soil	Metals	Total	Arsenic	0-10 ft	N/A	mg/kg	120	0.159	6.00	0.907	6.00	6	3	111	0.613	80.9	114	95%	No	Yes
Soil	Metals	Total	Barium	0-1 ft	N/A	mg/kg	79	-	-	-	-	0	-	79	10.7	242	79	100%	No	Yes
Soil	Metals	Total	Barium	0-3 ft	N/A	mg/kg	98	-	-	-	-	0	-	98	10.7	242	98	100%	No	Yes
Soil	Metals	Total	Barium	0-10 ft	N/A	mg/kg	115	-	-	-	-	0	-	115	10.7	242	115	100%	No	Yes
Soil	Metals	Total	Beryllium	0-1 ft	N/A	mg/kg	79	0.147	0.280	0.248	1.23	35	24	20	0.0587	0.630	44	56%	No	Yes
Soil	Metals	Total	Beryllium	0-3 ft	N/A	mg/kg	98	0.147	0.280	0.248	1.23	37	36	25	0.0587	0.630	61	62%	No	Yes
Soil	Metals	Total	Beryllium	0-10 ft	N/A	mg/kg	115	0.147	0.280	0.248	1.23	42	45	28	0.0587	0.630	73	63%	No	Yes
Soil	Metals	Total	Cadmium	0-1 ft	N/A	mg/kg	79	0.0122	0.290	0.248	0.540	11	4	64	0.0561	17.3	68	86%	No	Yes
Soil	Metals	Total	Cadmium	0-3 ft	N/A	mg/kg	98	0.0122	0.290	0.248	0.540	14	4	80	0.0561	17.3	84	86%	No	Yes
Soil	Metals	Total	Cadmium	0-10 ft	N/A	mg/kg	115	0.0122	0.290	0.248	0.540	17	4	94	0.0561	17.3	98	85%	No	Yes
Soil	Metals	Total	Chromium	0-1 ft	N/A	mg/kg	82	-	-	-	-	0	-	82	5.27	2,650	82	100%	No	Yes
Soil	Metals	Total	Chromium	0-3 ft	N/A	mg/kg	101	-	-	-	-	0	-	101	5.27	2,650	101	100%	No	Yes
Soil	Metals	Total	Chromium	0-10 ft	N/A	mg/kg	118	-	-	-	-	0	-	118	5.27	2,650	118	100%	No	Yes
Soil	Metals	Total	Cobalt	0-1 ft	N/A	mg/kg	68	-	-	-	-	0	-	68	2.52	25.0	68	100%	No	Yes
Soil	Metals	Total	Cobalt	0-3 ft	N/A	mg/kg	87	-	-	-	-	0	-	87	2.52	41.0	87	100%	No	Yes
Soil	Metals	Total	Cobalt	0-10 ft	N/A	mg/kg	104	-	-	-	-	0	-	104	2.52	42.3	104	100%	No	Yes
Soil	Metals	Total	Copper	0-1 ft	N/A	mg/kg	93	-	-	-	-	0	-	93	13.2	494	93	100%	No	Yes
Soil	Metals	Total	Copper	0-3 ft	N/A	mg/kg	112	-	-	-	-	0	-	112	13.2	494	112	100%	No	Yes
Soil	Metals	Total	Copper	0-10 ft	N/A	mg/kg	129	-	-	-	-	0	-	129	13.2	494	129	100%	No	Yes
Soil	Metals	Total	Lead	0-1 ft	N/A	mg/kg	157	-	-	-	-	0	-	157	5.34	3,260	157	100%	No	Yes
Soil	Metals	Total	Lead	0-3 ft	N/A	mg/kg	182	-	-	-	-	0	-	182	5.34	3,260	182	100%	No	Yes
Soil	Metals	Total	Lead	0-10 ft	N/A	mg/kg	199	-	-	-	-	0	-	199	5.24	3,260	199	100%	No	Yes
Soil	Metals	Total	Manganese	0-1 ft	N/A	mg/kg	79	-	-	-	-	0	-	79	167	789	79	100%	No	Yes
Soil	Metals	Total	Manganese	0-3 ft	N/A	mg/kg	98	-	-	-	-	0	-	98	167	1,710	98	100%	No	Yes
Soil	Metals	Total	Manganese	0-10 ft	N/A	mg/kg	115	-	-	-	-	0	-	115	146	1,710	115	100%	No	Yes
Soil	Metals	Total	Mercury	0-1 ft	N/A	mg/kg	107	0.00528	0.110	0.0196	0.110	34	15	58	0.0114	4.15	73	68%	No	Yes
Soil	Metals	Total	Mercury	0-3 ft	N/A	mg/kg	126	0.00528	0.110	0.0196	0.110	36	19	71	0.0114	4.15	90	71%	No	Yes
Soil	Metals	Total	Mercury	0-10 ft	N/A	mg/kg	143	0.00528	0.110	0.0192	0.110	36	21	86	0.0114	4.15	107	75%	No	Yes
Soil	Metals	Total	Nickel	0-1 ft	N/A	mg/kg	89	-	-	-	-	0	-	89	4.79	1,060	89	100%	No	Yes
Soil	Metals	Total	Nickel	0-3 ft	N/A	mg/kg	108	-	-	-	-	0	-	108	4.79	1,610	108	100%	No	Yes
Soil	Metals	Total	Nickel	0-10 ft	N/A	mg/kg	125	-	-	-	-	0	-	125	4.79	1,760	125	100%	No	Yes
Soil	Metals	Total	Selenium	0-1 ft	N/A	mg/kg	79	0.0781	1.50	0.200	4.12	46	28	5	0.175	0.900	33	42%	No	Yes
Soil	Metals	Total	Selenium	0-3 ft	N/A	mg/kg	98	0.0781	1.50	0.200	4.12	50	41	7	0.175	0.900	48	49%	No	Yes
Soil	Metals	Total	Selenium	0-10 ft	N/A	mg/kg	115	0.0774	1.50	0.200	4.12	58	47	10	0.106	0.900	57	50%	No	Yes
Soil	Metals	Total	Silver	0-1 ft	N/A	mg/kg	79	0.0440	0.570	0.200	0.687	17	36	26	0.0571	1.50	62	78%	No	Yes
Soil	Metals	Total	Silver	0-3 ft	N/A	mg/kg	98	0.0440	0.570	0.0680	2.02	17	51	30	0.0450	1.50	81	83%	No	Yes
Soil	Metals	Total	Silver	0-10 ft	N/A	mg/kg	115	0.0440	0.570	0.0680	2.02	17	63	35	0.0450	1.52	98	85%	No	Yes
Soil	Metals	Total	Thallium	0-1 ft	N/A	mg/kg	79	0.0429	0.300	0.117	0.687	31	34	14	0.0288	0.378	48	61%	No	Yes
Soil	Metals	Total	Thallium	0-3 ft	N/A	mg/kg	98	0.0429	0.300	0.0970	0.687	31	48	19	0.0288	0.378	67	68%	No	Yes
Soil	Metals	Total	Thallium	0-10 ft	N/A	mg/kg	115	0.0429	0.300	0.0970	0.951	31	58	26	0.0288	0.378	84	73%	No	Yes
Soil	Metals	Total	Vanadium	0-1 ft	N/A	mg/kg	68	-	-	-	-	0	-	68	6.89	84.7	68	100%	No	Yes
Soil	Metals	Total	Vanadium	0-3 ft	N/A	mg/kg	87	-	-	-	-	0	-	87	6.89	89.1	87	100%	No	Yes
Soil	Metals	Total	Vanadium	0-10 ft	N/A	mg/kg	104	-	-	-	-	0	-	104	6.89	93.4	104	100%	No	Yes
Soil	Metals	Total	Zinc	0-1 ft	N/A	mg/kg	89	-	-	-	-	0	-	89	30.3	1,160	89	100%	No	Yes
Soil	Metals	Total	Zinc	0-3 ft	N/A	mg/kg	108	-	-	-	-	0	-	108	30.3	1,160	108	100%	No	Yes
Soil	Metals	Total	Zinc	0-10 ft	N/A	mg/kg	125	-	-	-	-	0	-	125	30.3	1,160	125	100%	No	Yes
Soil	Butyltins	Total	Dibutyltin	0-1 ft	N/A	ug/kg	54	0.270	0.899	1.20	2.79	34	1	19	0.800	210	20	37%	No	Yes
Soil	Butyltins	Total	Dibutyltin	0-3 ft	N/A	ug/kg	71	0.270	0.899	1.20	2.79	51	1	19	0.800	210	20	28%	No	Yes
Soil	Butyltins	Total	Dibutyltin	0-10 ft	N/A	ug/kg	84	0.270	7.62	1.20	23.7	64	1	19	0.800	210	20	24%	No	Yes
Soil	Butyltins	Total	Monobutyltin	0-1 ft	N/A	ug/kg	54	0.240	1.98	1.20	3.73	30	4	20	0.420	108	24	44%	No	Yes
Soil	Butyltins	Total	Monobutyltin	0-3 ft	N/A	ug/kg	71	0.240	1.98	1.20	3.73	47	4	20	0.420	108	24	34%	No	Yes
Soil	Butyltins	Total	Monobutyltin	0-10 ft	N/A	ug/kg	84	0.240	16.8	1.20	31.6	60	4	20	0.420	108	24	29%	No	Yes
Soil	Butyltins	Total	Tetrabutyltin	0-1 ft	N/A	ug/kg	41	0.445	0.853	1.20	2.27	40	-	1	3.99	3.99	1	2%	No	No
Soil	Butyltins	Total	Tetrabutyltin	0-3 ft	N/A	ug/kg	53	0.445	0.910	1.20	2.42	52	-	1	3.99	3.99	1	2%	No	No
Soil	Butyltins	Total	Tetrabutyltin	0-10 ft	N/A	ug/kg	66	0.438	5.89	1.18	15.8	65	-	1	3.99	3.99	1	2%	No	No

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(2 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Soil	Butyltins	Total	Tributyltin	0-1 ft	N/A	ug/kg	54	0.340	1.53	1.20	3.73	35	2	17	1.65	1,860	19	35%	No	Yes
Soil	Butyltins	Total	Tributyltin	0-3 ft	N/A	ug/kg	71	0.340	1.53	1.20	3.73	51	2	18	1.65	1,860	20	28%	No	Yes
Soil	Butyltins	Total	Tributyltin	0-10 ft	N/A	ug/kg	84	0.340	12.1	1.20	31.6	64	2	18	1.65	1,860	20	24%	No	Yes
Soil	Herbicides	Total	2,4,5-T	0-1 ft	N/A	ug/kg	24	1.26	50.0	3.10	50.0	22	-	2	63.0	93.0	2	8%	No	Yes
Soil	Herbicides	Total	2,4,5-T	0-3 ft	N/A	ug/kg	26	1.26	50.0	3.10	50.0	24	-	2	63.0	93.0	2	8%	No	Yes
Soil	Herbicides	Total	2,4,5-T	0-10 ft	N/A	ug/kg	33	1.26	50.0	3.10	50.0	31	-	2	63.0	93.0	2	6%	No	Yes
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-1 ft	N/A	ug/kg	24	1.84	50.0	2.50	50.0	24	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-3 ft	N/A	ug/kg	26	1.84	50.0	2.50	50.0	26	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-10 ft	N/A	ug/kg	33	1.84	50.0	2.50	50.0	33	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	2,4-D	0-1 ft	N/A	ug/kg	24	0.476	50.0	5.77	50.0	24	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	2,4-D	0-3 ft	N/A	ug/kg	26	0.476	50.0	5.77	50.0	26	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	2,4-D	0-10 ft	N/A	ug/kg	33	0.476	50.0	5.77	50.0	33	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	2,4-DB	0-1 ft	N/A	ug/kg	24	0.568	50.0	5.00	50.0	24	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	2,4-DB	0-3 ft	N/A	ug/kg	26	0.568	50.0	5.00	50.0	26	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	2,4-DB	0-10 ft	N/A	ug/kg	33	0.568	50.0	5.00	50.0	33	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	4-Nitrophenol	0-1 ft	N/A	ug/kg	13	1.27	1.81	5.77	8.18	13	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	4-Nitrophenol	0-3 ft	N/A	ug/kg	15	1.27	1.81	5.77	8.18	15	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	4-Nitrophenol	0-10 ft	N/A	ug/kg	22	1.27	1.81	5.77	8.18	22	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	Dalapon	0-1 ft	N/A	ug/kg	24	1.76	50.0	5.77	50.0	24	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	Dalapon	0-3 ft	N/A	ug/kg	26	1.76	50.0	5.77	50.0	26	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	Dalapon	0-10 ft	N/A	ug/kg	33	1.76	50.0	5.77	50.0	33	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	Dicamba	0-1 ft	N/A	ug/kg	24	1.40	50.0	2.10	50.0	24	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	Dicamba	0-3 ft	N/A	ug/kg	26	1.40	50.0	2.10	50.0	26	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	Dicamba	0-10 ft	N/A	ug/kg	33	1.40	50.0	2.10	50.0	33	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	Dichloroprop	0-1 ft	N/A	ug/kg	24	0.614	400	5.77	400	22	-	2	170	180	2	8%	No	Yes
Soil	Herbicides	Total	Dichloroprop	0-3 ft	N/A	ug/kg	26	0.614	400	5.77	400	24	-	2	170	180	2	8%	No	Yes
Soil	Herbicides	Total	Dichloroprop	0-10 ft	N/A	ug/kg	33	0.614	400	5.77	400	31	-	2	170	180	2	6%	No	Yes
Soil	Herbicides	Total	Dinoseb	0-1 ft	N/A	ug/kg	24	0.476	50.0	5.77	50.0	24	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	Dinoseb	0-3 ft	N/A	ug/kg	26	0.476	50.0	5.77	50.0	26	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	Dinoseb	0-10 ft	N/A	ug/kg	33	0.476	50.0	5.77	50.0	33	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	MCPA	0-1 ft	N/A	ug/kg	24	0.868	25,000	5.77	25,000	24	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	MCPA	0-3 ft	N/A	ug/kg	26	0.868	25,000	5.77	25,000	26	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	MCPA	0-10 ft	N/A	ug/kg	33	0.868	25,000	5.77	25,000	33	-	-	-	-	0	0%	No	No
Soil	Herbicides	Total	MCPP	0-1 ft	N/A	ug/kg	24	1.58	38,000	5.77	38,000	22	-	2	9,500	14,000	2	8%	No	Yes
Soil	Herbicides	Total	MCPP	0-3 ft	N/A	ug/kg	26	1.58	38,000	5.77	38,000	24	-	2	9,500	14,000	2	8%	No	Yes
Soil	Herbicides	Total	MCPP	0-10 ft	N/A	ug/kg	33	1.58	38,000	5.77	38,000	31	-	2	9,500	14,000	2	6%	No	Yes
Soil	Herbicides	Total	Pentachlorophenol	0-1 ft	N/A	ug/kg	13	0.673	0.955	5.77	8.18	13	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Pentachlorophenol	0-3 ft	N/A	ug/kg	15	0.673	0.955	5.77	8.18	15	-	-	-	-	0	0%	No	--
Soil	Herbicides	Total	Pentachlorophenol	0-10 ft	N/A	ug/kg	22	0.673	0.955	5.77	8.18	22	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	4,4'-DDD	0-1 ft	N/A	ug/kg	52	0.110	25.0	0.630	25.0	50	2	-	0.690	0.990	2	4%	No	No
Soil	Pesticides	Total	4,4'-DDD	0-3 ft	N/A	ug/kg	60	0.110	25.0	0.630	25.0	58	2	-	0.690	0.990	2	3%	No	No
Soil	Pesticides	Total	4,4'-DDD	0-10 ft	N/A	ug/kg	67	0.110	25.0	0.630	25.0	65	2	-	0.690	0.990	2	3%	No	No
Soil	Pesticides	Total	4,4'-DDE	0-1 ft	N/A	ug/kg	52	0.110	9.40	0.660	9.40	44	6	2	0.250	17.0	8	15%	No	Yes
Soil	Pesticides	Total	4,4'-DDE	0-3 ft	N/A	ug/kg	60	0.110	9.40	0.660	9.40	52	6	2	0.250	17.0	8	13%	No	Yes
Soil	Pesticides	Total	4,4'-DDE	0-10 ft	N/A	ug/kg	67	0.110	9.40	0.660	9.40	59	6	2	0.250	17.0	8	12%	No	Yes
Soil	Pesticides	Total	4,4'-DDT	0-1 ft	N/A	ug/kg	52	0.230	78.0	1.00	78.0	27	3	22	0.436	140	25	48%	No	Yes
Soil	Pesticides	Total	4,4'-DDT	0-3 ft	N/A	ug/kg	60	0.170	78.0	0.990	78.0	31	3	26	0.436	140	29	48%	No	Yes
Soil	Pesticides	Total	4,4'-DDT	0-10 ft	N/A	ug/kg	67	0.170	78.0	0.990	78.0	38	3	26	0.436	140	29	43%	No	Yes
Soil	Pesticides	Total	Aldrin	0-1 ft	N/A	ug/kg	52	0.101	5.00	0.630	5.00	51	1	-	4.40	4.40	1	2%	No	No
Soil	Pesticides	Total	Aldrin	0-3 ft	N/A	ug/kg	60	0.101	5.00	0.630	5.00	59	1	-	4.40	4.40	1	2%	No	No
Soil	Pesticides	Total	Aldrin	0-10 ft	N/A	ug/kg	67	0.101	5.00	0.630	5.00	66	1	-	4.40	4.40	1	1%	No	No
Soil	Pesticides	Total	BHC (alpha)	0-1 ft	N/A	ug/kg	52	0.0981	1.90	0.500	5.00	52	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	BHC (alpha)	0-3 ft	N/A	ug/kg	60	0.0981	1.90	0.500	5.00	59	-	1	2.02	2.02	1	2%	No	No
Soil	Pesticides	Total	BHC (alpha)	0-10 ft	N/A	ug/kg	67	0.0981	1.90	0.500	5.00	66	-	1	2.02	2.02	1	1%	No	No
Soil	Pesticides	Total	BHC (beta)	0-1 ft	N/A	ug/kg	52	0.109	12.0	0.630	12.0	50	1	1	0.952	2.60	2	4%	No	No
Soil	Pesticides	Total	BHC (beta)	0-3 ft	N/A	ug/kg	60	0.109	12.0	0.630	12.0	58	1	1	0.952	2.60	2	3%	No	No
Soil	Pesticides	Total	BHC (beta)	0-10 ft	N/A	ug/kg	67	0.109	12.0	0.630	12.0	65	1	1	0.952	2.60	2	3%	No	No
Soil	Pesticides	Total	BHC (delta)	0-1 ft	N/A	ug/kg	52	0.0740	5.00	0.600	5.00	50	1	1	0.0780	3.03	2	4%	No	No
Soil	Pesticides	Total	BHC (delta)	0-3 ft	N/A	ug/kg	60	0.0740	5.00	0.600	5.00	58	1	1	0.0780	3.03	2	3%	No	No
Soil	Pesticides	Total	BHC (delta)	0-10 ft	N/A	ug/kg	67	0.0740	5.00	0.600	5.00	65	1	1	0.0780	3.03	2	3%	No	No
Soil	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	N/A	ug/kg	52	0.0800	37.0	0.630	37.0	50	-	2	2.17	9.68	2	4%	No	No
Soil	Pesticides	Total	BHC (gamma) Lindane	0-3 ft	N/A	ug/kg	60	0.0800	37.0	0.630	37.0	57	1	2	0.200	9.68	3	5%	No	No
Soil	Pesticides	Total	BHC (gamma) Lindane	0-10 ft	N/A	ug/kg	67	0.0800	37.0	0.630	37.0	64	1	2	0.200	9.68	3	4%	No	No

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(3 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Soil	Pesticides	Total	Chlordane (alpha)	0-1 ft	N/A	ug/kg	39	0.100	19.0	0.630	19.0	35	3	1	0.660	4.00	4	10%	No	Yes
Soil	Pesticides	Total	Chlordane (alpha)	0-3 ft	N/A	ug/kg	45	0.100	19.0	0.630	19.0	41	3	1	0.660	4.00	4	9%	No	Yes
Soil	Pesticides	Total	Chlordane (alpha)	0-10 ft	N/A	ug/kg	45	0.100	19.0	0.630	19.0	41	3	1	0.660	4.00	4	9%	No	Yes
Soil	Pesticides	Total	Chlordane (gamma)	0-1 ft	N/A	ug/kg	39	0.0900	14.0	0.630	14.0	33	-	6	7.60	97.0	6	15%	No	Yes
Soil	Pesticides	Total	Chlordane (gamma)	0-3 ft	N/A	ug/kg	45	0.0900	14.0	0.630	14.0	35	3	7	0.610	97.0	10	22%	No	Yes
Soil	Pesticides	Total	Chlordane (gamma)	0-10 ft	N/A	ug/kg	45	0.0900	14.0	0.630	14.0	35	3	7	0.610	97.0	10	22%	No	Yes
Soil	Pesticides	Total	Chlordane (technical)	0-1 ft	N/A	ug/kg	13	1.34	11.2	9.50	19.8	12	-	1	1,560	1,560	1	8%	No	--
Soil	Pesticides	Total	Chlordane (technical)	0-3 ft	N/A	ug/kg	15	1.34	11.2	9.50	19.8	12	-	3	65.6	1,560	3	20%	No	--
Soil	Pesticides	Total	Chlordane (technical)	0-10 ft	N/A	ug/kg	22	1.34	11.8	9.50	19.8	16	-	6	49.4	1,560	6	27%	No	Yes
Soil	Pesticides	Total	Dieldrin	0-1 ft	N/A	ug/kg	52	0.140	31.0	0.630	31.0	49	2	1	0.428	2.10	3	6%	No	Yes
Soil	Pesticides	Total	Dieldrin	0-3 ft	N/A	ug/kg	60	0.140	31.0	0.630	31.0	57	2	1	0.428	2.10	3	5%	No	No
Soil	Pesticides	Total	Dieldrin	0-10 ft	N/A	ug/kg	67	0.140	31.0	0.630	31.0	64	2	1	0.428	2.10	3	4%	No	No
Soil	Pesticides	Total	Endosulfan I	0-1 ft	N/A	ug/kg	52	0.0630	9.50	0.630	9.50	50	-	2	2.20	6.45	2	4%	No	No
Soil	Pesticides	Total	Endosulfan I	0-3 ft	N/A	ug/kg	60	0.0630	9.50	0.630	9.50	55	2	3	0.140	6.45	5	8%	No	Yes
Soil	Pesticides	Total	Endosulfan I	0-10 ft	N/A	ug/kg	67	0.0630	9.50	0.630	9.50	62	2	3	0.140	6.45	5	7%	No	Yes
Soil	Pesticides	Total	Endosulfan II	0-1 ft	N/A	ug/kg	52	0.140	8.40	0.630	8.40	48	3	1	0.240	8.84	4	8%	No	Yes
Soil	Pesticides	Total	Endosulfan II	0-3 ft	N/A	ug/kg	60	0.140	8.40	0.630	8.40	56	3	1	0.240	8.84	4	7%	No	Yes
Soil	Pesticides	Total	Endosulfan II	0-10 ft	N/A	ug/kg	67	0.140	8.40	0.630	8.40	63	3	1	0.240	8.84	4	6%	No	Yes
Soil	Pesticides	Total	Endosulfan Sulfate	0-1 ft	N/A	ug/kg	52	0.110	8.00	0.630	8.00	45	4	3	0.577	5.97	7	13%	No	Yes
Soil	Pesticides	Total	Endosulfan Sulfate	0-3 ft	N/A	ug/kg	60	0.110	8.00	0.630	8.00	53	4	3	0.577	5.97	7	12%	No	Yes
Soil	Pesticides	Total	Endosulfan Sulfate	0-10 ft	N/A	ug/kg	67	0.110	8.00	0.630	8.00	60	4	3	0.577	5.97	7	10%	No	Yes
Soil	Pesticides	Total	Endrin Aldehyde	0-1 ft	N/A	ug/kg	52	0.120	13.0	0.630	13.0	48	2	2	2.02	16.0	4	8%	No	Yes
Soil	Pesticides	Total	Endrin Aldehyde	0-3 ft	N/A	ug/kg	60	0.120	13.0	0.630	13.0	55	2	3	1.90	16.0	5	8%	No	Yes
Soil	Pesticides	Total	Endrin Aldehyde	0-10 ft	N/A	ug/kg	67	0.120	13.0	0.630	13.0	62	2	3	1.90	16.0	5	7%	No	Yes
Soil	Pesticides	Total	Endrin Ketone	0-1 ft	N/A	ug/kg	51	0.0930	21.0	0.630	21.0	47	2	2	1.87	13.0	4	8%	No	Yes
Soil	Pesticides	Total	Endrin Ketone	0-3 ft	N/A	ug/kg	59	0.0930	21.0	0.630	21.0	55	2	2	1.87	13.0	4	7%	No	Yes
Soil	Pesticides	Total	Endrin Ketone	0-10 ft	N/A	ug/kg	66	0.0930	21.0	0.630	21.0	62	2	2	1.87	13.0	4	6%	No	Yes
Soil	Pesticides	Total	Endrin	0-1 ft	N/A	ug/kg	52	0.0940	10.0	0.630	10.0	49	1	2	3.00	17.0	3	6%	No	Yes
Soil	Pesticides	Total	Endrin	0-3 ft	N/A	ug/kg	60	0.0940	10.0	0.630	10.0	56	1	3	2.10	17.0	4	7%	No	Yes
Soil	Pesticides	Total	Endrin	0-10 ft	N/A	ug/kg	67	0.0940	10.0	0.630	10.0	63	1	3	2.10	17.0	4	6%	No	Yes
Soil	Pesticides	Total	Heptachlor Epoxide	0-1 ft	N/A	ug/kg	52	0.0840	7.10	0.630	7.10	51	-	1	14.4	14.4	1	2%	No	No
Soil	Pesticides	Total	Heptachlor Epoxide	0-3 ft	N/A	ug/kg	60	0.0840	7.10	0.630	7.10	58	1	1	0.634	14.4	2	3%	No	No
Soil	Pesticides	Total	Heptachlor Epoxide	0-10 ft	N/A	ug/kg	67	0.0840	7.10	0.630	7.10	65	1	1	0.634	14.4	2	3%	No	No
Soil	Pesticides	Total	Heptachlor	0-1 ft	N/A	ug/kg	52	0.0981	5.00	0.660	5.00	47	4	1	0.180	2.90	5	10%	No	Yes
Soil	Pesticides	Total	Heptachlor	0-3 ft	N/A	ug/kg	60	0.0981	5.00	0.660	5.00	54	4	2	0.180	3.07	6	10%	No	Yes
Soil	Pesticides	Total	Heptachlor	0-10 ft	N/A	ug/kg	67	0.0981	5.00	0.660	5.00	61	4	2	0.180	3.07	6	9%	No	Yes
Soil	Pesticides	Total	Methoxychlor	0-1 ft	N/A	ug/kg	52	0.141	19.0	0.630	19.8	50	-	2	1.00	1.20	2	4%	No	No
Soil	Pesticides	Total	Methoxychlor	0-3 ft	N/A	ug/kg	60	0.141	19.0	0.630	19.8	58	-	2	1.00	1.20	2	3%	No	No
Soil	Pesticides	Total	Methoxychlor	0-10 ft	N/A	ug/kg	67	0.141	19.0	0.630	19.8	65	-	2	1.00	1.20	2	3%	No	No
Soil	Pesticides	Total	Toxaphene	0-1 ft	N/A	ug/kg	52	4.80	2,900	34.0	2,900	52	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Toxaphene	0-3 ft	N/A	ug/kg	60	4.80	2,900	34.0	2,900	60	-	-	-	-	0	0%	No	No
Soil	Pesticides	Total	Toxaphene	0-10 ft	N/A	ug/kg	67	4.80	2,900	34.0	2,900	67	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1016	0-1 ft	N/A	ug/kg	97	1.08	67.0	3.80	67.0	97	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1016	0-3 ft	N/A	ug/kg	114	1.08	67.0	3.80	67.0	114	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1016	0-10 ft	N/A	ug/kg	128	1.08	67.0	3.80	67.0	128	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1221	0-1 ft	N/A	ug/kg	97	2.10	134	3.80	134	97	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1221	0-3 ft	N/A	ug/kg	114	2.10	134	3.80	134	114	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1221	0-10 ft	N/A	ug/kg	128	2.10	134	3.80	134	128	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1232	0-1 ft	N/A	ug/kg	97	2.10	67.0	3.80	67.0	97	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1232	0-3 ft	N/A	ug/kg	114	2.10	67.0	3.80	67.0	114	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1232	0-10 ft	N/A	ug/kg	128	2.10	67.0	3.80	67.0	128	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1242	0-1 ft	N/A	ug/kg	97	1.97	67.0	3.80	67.0	97	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1242	0-3 ft	N/A	ug/kg	114	1.97	67.0	3.80	67.0	114	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1242	0-10 ft	N/A	ug/kg	128	1.97	67.0	3.80	67.0	128	-	-	-	-	0	0%	No	No
Soil	PCB Aroclors	Total	Aroclor 1248	0-1 ft	N/A	ug/kg	97	2.10	67.0	3.80	67.0	95	-	2	61.5	968	2	2%	No	No
Soil	PCB Aroclors	Total	Aroclor 1248	0-3 ft	N/A	ug/kg	114	2.10	67.0	3.80	67.0	112	-	2	61.5	968	2	2%	No	No
Soil	PCB Aroclors	Total	Aroclor 1248	0-10 ft	N/A	ug/kg	128	2.10	67.0	3.80	67.0	126	-	2	61.5	968	2	2%	No	No
Soil	PCB Aroclors	Total	Aroclor 1254	0-1 ft	N/A	ug/kg	97	1.53	67.0	4.00	67.0	82	-	15	5.50	1,700	15	15%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1254	0-3 ft	N/A	ug/kg	114	1.53	67.0	4.00	67.0	93	-	21	5.50	1,700	21	18%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1254	0-10 ft	N/A	ug/kg	128	1.53	67.0	4.00	67.0	102	-	26	5.50	1,700	26	20%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1260	0-1 ft	N/A	ug/kg	97	1.54	67.0	9.82	67.0	15	15	67	2.00	690	82	85%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1260	0-3 ft	N/A	ug/kg	114	1.54	67.0	9.82	67.0	21	19	74	2.00	690	93	82%	No	Yes
Soil	PCB Aroclors	Total	Aroclor 1260	0-10 ft	N/A	ug/kg	128	1.54	67.0	9.82	67.0	23	21	84	2.00	690	105	82%	No	Yes

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(4 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Soil	PCB Aroclors	Total	Aroclor 1262	0-1 ft	N/A	ug/kg	13	2.10	11.0	6.30	50.0	13	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1262	0-3 ft	N/A	ug/kg	18	2.10	11.0	6.30	50.0	18	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1262	0-10 ft	N/A	ug/kg	18	2.10	11.0	6.30	50.0	18	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1268	0-1 ft	N/A	ug/kg	13	2.10	11.0	6.30	50.0	13	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1268	0-3 ft	N/A	ug/kg	18	2.10	11.0	6.30	50.0	18	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Aroclor 1268	0-10 ft	N/A	ug/kg	18	2.10	11.0	6.30	50.0	18	-	-	-	-	0	0%	No	--
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	N/A	ug/kg	97	3.08	150	19.0	150	-	-	-	3.70	2140	82	85%	No	Yes
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-3 ft	N/A	ug/kg	114	3.08	150	19.0	150	-	-	-	3.70	2140	93	82%	No	Yes
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-10 ft	N/A	ug/kg	128	3.08	150	19.0	150	-	-	-	3.70	2140	105	82%	No	Yes
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	N/A	mg/kg	83	5.02	25.0	24.9	36.0	8	13	62	3.60	5,100	75	90%	No	Yes
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-3 ft	N/A	mg/kg	102	5.02	25.0	24.9	36.0	12	21	69	3.60	5,100	90	88%	No	Yes
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-10 ft	N/A	mg/kg	119	5.02	25.0	24.9	36.0	18	22	79	3.60	9,740	101	85%	No	Yes
Soil	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	N/A	mg/kg	83	10.0	100	49.9	140	6	6	71	21.0	23,900	77	93%	No	Yes
Soil	NWTPH-Dx	Total	Residual Range Organics	0-3 ft	N/A	mg/kg	102	10.0	100	49.9	140	9	14	79	16.0	23,900	93	91%	No	Yes
Soil	NWTPH-Dx	Total	Residual Range Organics	0-10 ft	N/A	mg/kg	119	10.0	100	49.9	140	13	15	91	16.0	41,900	106	89%	No	Yes
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	N/A	mg/kg	49	0.121	20.0	2.60	20.0	38	8	3	1.60	586	11	22%	No	Yes
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-3 ft	N/A	mg/kg	59	0.121	20.0	2.60	20.0	45	9	5	1.60	3,960	14	24%	No	Yes
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-10 ft	N/A	mg/kg	69	0.121	20.0	2.60	20.0	53	11	5	1.60	3,960	16	23%	No	Yes
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	N/A	ug/kg	57	0.880	190	5.18	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	N/A	ug/kg	67	0.880	190	5.18	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-10 ft	N/A	ug/kg	77	0.880	190	5.18	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-1 ft	N/A	ug/kg	57	0.703	190	5.18	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-3 ft	N/A	ug/kg	67	0.703	190	5.18	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-10 ft	N/A	ug/kg	77	0.703	190	5.18	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-1 ft	N/A	ug/kg	57	0.883	236	5.18	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-3 ft	N/A	ug/kg	67	0.883	236	5.18	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-10 ft	N/A	ug/kg	77	0.883	236	5.18	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	57	0.871	269	5.18	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-3 ft	N/A	ug/kg	67	0.871	269	5.18	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-10 ft	N/A	ug/kg	77	0.871	269	5.18	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-1 ft	N/A	ug/kg	58	0.804	930	5.18	1,680	58	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-3 ft	N/A	ug/kg	68	0.804	930	5.18	1,680	68	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-10 ft	N/A	ug/kg	78	0.804	930	5.18	1,680	78	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-1 ft	N/A	ug/kg	58	0.819	300	5.18	1,680	58	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-3 ft	N/A	ug/kg	68	0.819	300	5.18	1,680	68	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-10 ft	N/A	ug/kg	78	0.819	300	5.18	1,680	78	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dichlorophenol	0-1 ft	N/A	ug/kg	58	0.919	300	5.18	1,680	58	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dichlorophenol	0-3 ft	N/A	ug/kg	68	0.919	300	5.18	1,680	68	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dichlorophenol	0-10 ft	N/A	ug/kg	78	0.919	300	5.18	1,680	78	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dimethylphenol	0-1 ft	N/A	ug/kg	58	0.793	280	2.07	1,700	58	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dimethylphenol	0-3 ft	N/A	ug/kg	68	0.793	280	2.07	1,700	68	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dimethylphenol	0-10 ft	N/A	ug/kg	78	0.793	280	2.07	1,700	78	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrophenol	0-1 ft	N/A	ug/kg	54	2.81	1,800	29.3	6,700	54	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrophenol	0-3 ft	N/A	ug/kg	64	2.81	1,800	29.3	6,700	64	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrophenol	0-10 ft	N/A	ug/kg	74	2.81	1,800	29.3	6,700	74	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-1 ft	N/A	ug/kg	57	1.52	366	6.40	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-3 ft	N/A	ug/kg	67	1.52	366	6.40	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-10 ft	N/A	ug/kg	77	1.52	366	6.40	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-1 ft	N/A	ug/kg	57	1.11	303	5.18	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-3 ft	N/A	ug/kg	67	1.11	303	5.18	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-10 ft	N/A	ug/kg	77	1.11	303	5.18	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chloronaphthalene	0-1 ft	N/A	ug/kg	57	0.351	190	1.17	340	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chloronaphthalene	0-3 ft	N/A	ug/kg	67	0.351	190	1.17	340	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chloronaphthalene	0-10 ft	N/A	ug/kg	77	0.351	190	1.17	340	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chlorophenol	0-1 ft	N/A	ug/kg	58	0.697	252	5.18	1,680	58	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chlorophenol	0-3 ft	N/A	ug/kg	68	0.697	252	5.18	1,680	68	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Chlorophenol	0-10 ft	N/A	ug/kg	78	0.697	252	5.18	1,680	78	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Methylphenol	0-1 ft	N/A	ug/kg	58	0.978	202	5.18	1,680	58	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Methylphenol	0-3 ft	N/A	ug/kg	68	0.978	202	5.18	1,680	68	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Methylphenol	0-10 ft	N/A	ug/kg	78	0.978	202	5.18	1,680	78	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitroaniline	0-1 ft	N/A	ug/kg	57	0.563	930	2.07	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitroaniline	0-3 ft	N/A	ug/kg	67	0.563	930	2.07	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitroaniline	0-10 ft	N/A	ug/kg	77	0.563	930	2.07	1,680	77	-	-	-	-	0	0%	No	No

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(5 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Soil	SVOCs	Total	2-Nitrophenol	0-1 ft	N/A	ug/kg	58	1.18	300	5.18	1,680	58	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitrophenol	0-3 ft	N/A	ug/kg	68	1.18	300	5.18	1,680	68	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	2-Nitrophenol	0-10 ft	N/A	ug/kg	78	1.18	300	5.18	1,680	78	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-1 ft	N/A	ug/kg	57	1.29	2,490	11.7	3,400	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-3 ft	N/A	ug/kg	67	1.29	2,490	11.7	3,400	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-10 ft	N/A	ug/kg	77	1.29	2,490	11.7	3,400	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3-Nitroaniline	0-1 ft	N/A	ug/kg	57	1.99	930	10.4	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3-Nitroaniline	0-3 ft	N/A	ug/kg	67	1.99	930	10.4	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	3-Nitroaniline	0-10 ft	N/A	ug/kg	77	1.99	930	10.4	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-1 ft	N/A	ug/kg	54	1.51	930	10.4	4,210	54	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-3 ft	N/A	ug/kg	64	1.51	930	10.4	4,210	64	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-10 ft	N/A	ug/kg	74	1.51	930	10.4	4,210	74	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-1 ft	N/A	ug/kg	57	1.40	224	6.40	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-3 ft	N/A	ug/kg	67	1.40	224	6.40	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-10 ft	N/A	ug/kg	77	1.40	224	6.40	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-1 ft	N/A	ug/kg	58	0.925	300	5.18	1,680	58	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-3 ft	N/A	ug/kg	68	0.925	300	5.18	1,680	68	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-10 ft	N/A	ug/kg	78	0.925	300	5.18	1,680	78	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloroaniline	0-1 ft	N/A	ug/kg	57	0.963	300	6.40	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloroaniline	0-3 ft	N/A	ug/kg	67	0.963	300	6.40	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chloroaniline	0-10 ft	N/A	ug/kg	77	0.963	300	6.40	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-1 ft	N/A	ug/kg	57	1.97	283	6.40	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-3 ft	N/A	ug/kg	67	1.97	283	6.40	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-10 ft	N/A	ug/kg	77	1.97	283	6.40	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitroaniline	0-1 ft	N/A	ug/kg	57	1.99	930	11.7	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitroaniline	0-3 ft	N/A	ug/kg	67	1.99	930	11.7	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitroaniline	0-10 ft	N/A	ug/kg	77	1.99	930	11.7	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitrophenol	0-1 ft	N/A	ug/kg	58	2.22	1,500	29.3	4,210	58	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitrophenol	0-3 ft	N/A	ug/kg	68	2.22	1,500	29.3	4,210	68	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	4-Nitrophenol	0-10 ft	N/A	ug/kg	78	2.22	1,500	29.3	4,210	78	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Aniline	0-1 ft	N/A	ug/kg	48	1.50	454	10.4	1,680	48	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Aniline	0-3 ft	N/A	ug/kg	58	1.50	454	10.4	1,680	58	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Aniline	0-10 ft	N/A	ug/kg	68	1.50	454	10.4	1,680	68	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Benzidine	0-1 ft	N/A	ug/kg	34	2.21	1,800	10.4	4,210	34	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Benzidine	0-3 ft	N/A	ug/kg	39	2.21	1,800	10.4	4,210	39	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Benzidine	0-10 ft	N/A	ug/kg	49	2.21	1,800	10.4	4,210	49	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Benzoic Acid	0-1 ft	N/A	ug/kg	54	4.15	4,800	58.5	6,700	35	11	8	15.3	980	19	35%	No	Yes
Soil	SVOCs	Total	Benzoic Acid	0-3 ft	N/A	ug/kg	64	4.15	4,800	58.5	6,700	43	13	8	15.3	980	21	33%	No	Yes
Soil	SVOCs	Total	Benzoic Acid	0-10 ft	N/A	ug/kg	74	4.15	4,800	58.5	6,700	52	14	8	15.3	980	22	30%	No	Yes
Soil	SVOCs	Total	Benzyl Alcohol	0-1 ft	N/A	ug/kg	58	2.06	353	5.18	1,680	56	1	1	7.81	14.0	2	3%	No	No
Soil	SVOCs	Total	Benzyl Alcohol	0-3 ft	N/A	ug/kg	68	2.06	353	5.18	1,680	66	1	1	7.81	14.0	2	3%	No	No
Soil	SVOCs	Total	Benzyl Alcohol	0-10 ft	N/A	ug/kg	78	2.06	353	5.18	1,680	76	1	1	7.81	14.0	2	3%	No	No
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-1 ft	N/A	ug/kg	57	1.30	202	6.40	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-3 ft	N/A	ug/kg	67	1.30	202	6.40	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-10 ft	N/A	ug/kg	77	1.30	202	6.40	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-1 ft	N/A	ug/kg	57	1.63	321	6.40	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-3 ft	N/A	ug/kg	67	1.63	321	6.40	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-10 ft	N/A	ug/kg	77	1.63	321	6.40	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-1 ft	N/A	ug/kg	57	1.20	438	6.40	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-3 ft	N/A	ug/kg	67	1.20	438	6.40	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-10 ft	N/A	ug/kg	77	1.20	438	6.40	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	N/A	ug/kg	58	1.90	690	20.7	4,210	13	-	45	92.0	260,000	45	78%	No	Yes
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-3 ft	N/A	ug/kg	69	1.90	690	20.7	4,210	14	2	53	15.0	260,000	55	80%	No	Yes
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-10 ft	N/A	ug/kg	79	1.90	690	20.7	4,210	14	5	60	6.67	260,000	65	82%	No	Yes
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	N/A	ug/kg	57	1.50	320	6.40	1,680	49	6	2	3.67	124	8	14%	No	Yes
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-3 ft	N/A	ug/kg	67	1.50	320	6.40	1,680	58	6	3	3.67	124	9	13%	No	Yes
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-10 ft	N/A	ug/kg	77	1.50	320	6.40	1,680	66	7	4	3.67	152	11	14%	No	Yes
Soil	SVOCs	Total	Carbazole	0-1 ft	N/A	ug/kg	58	2.06	180	6.40	375	19	11	28	1.40	2,650	39	67%	No	Yes
Soil	SVOCs	Total	Carbazole	0-3 ft	N/A	ug/kg	68	1.30	180	6.40	375	23	13	32	1.40	2,840	45	66%	No	Yes
Soil	SVOCs	Total	Carbazole	0-10 ft	N/A	ug/kg	78	1.30	180	6.40	375	28	13	37	1.40	2,840	50	64%	No	Yes
Soil	SVOCs	Total	Dibenzofuran	0-1 ft	N/A	ug/kg	58	0.479	195	5.18	1,680	28	21	9	0.996	810	30	52%	No	Yes
Soil	SVOCs	Total	Dibenzofuran	0-3 ft	N/A	ug/kg	69	0.479	195	5.18	1,680	32	25	12	0.996	810	37	54%	No	Yes
Soil	SVOCs	Total	Dibenzofuran	0-10 ft	N/A	ug/kg	79	0.479	195	5.18	1,680	37	28	14	0.996	810	42	53%	No	Yes

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Soil	SVOCs	Total	Diethyl Phthalate	0-1 ft	N/A	ug/kg	57	1.99	286	6.40	1,680	53	2	2	8.80	73.4	4	7%	No	Yes
Soil	SVOCs	Total	Diethyl Phthalate	0-3 ft	N/A	ug/kg	67	1.99	286	6.40	1,680	61	4	2	8.80	73.4	6	9%	No	Yes
Soil	SVOCs	Total	Diethyl Phthalate	0-10 ft	N/A	ug/kg	77	1.99	286	6.40	1,680	70	5	2	8.80	73.4	7	9%	No	Yes
Soil	SVOCs	Total	Dimethyl Phthalate	0-1 ft	N/A	ug/kg	57	1.29	190	6.40	1,680	54	3	-	30.0	41.0	3	5%	No	Yes
Soil	SVOCs	Total	Dimethyl Phthalate	0-3 ft	N/A	ug/kg	67	1.29	190	6.40	1,680	64	3	-	30.0	41.0	3	4%	No	No
Soil	SVOCs	Total	Dimethyl Phthalate	0-10 ft	N/A	ug/kg	77	1.29	190	6.40	1,680	74	3	-	30.0	41.0	3	4%	No	No
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	N/A	ug/kg	57	1.89	1,460	6.40	8,420	43	6	8	6.10	1,800	14	25%	No	Yes
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-3 ft	N/A	ug/kg	67	1.89	1,460	6.40	8,420	49	7	11	3.70	1,800	18	27%	No	Yes
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-10 ft	N/A	ug/kg	77	1.89	1,460	6.40	8,420	59	7	11	3.70	1,800	18	23%	No	Yes
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	N/A	ug/kg	57	1.20	730	6.40	1,680	52	2	3	11.3	127	5	9%	No	Yes
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-3 ft	N/A	ug/kg	67	1.20	730	6.40	1,680	61	3	3	11.3	127	6	9%	No	Yes
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-10 ft	N/A	ug/kg	77	1.20	730	6.40	1,680	70	3	4	11.3	127	7	9%	No	Yes
Soil	SVOCs	Total	Hexachlorobenzene	0-1 ft	N/A	ug/kg	57	0.548	190	2.07	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobenzene	0-3 ft	N/A	ug/kg	67	0.548	190	2.07	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobenzene	0-10 ft	N/A	ug/kg	77	0.548	190	2.07	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobutadiene	0-1 ft	N/A	ug/kg	57	0.757	190	5.18	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobutadiene	0-3 ft	N/A	ug/kg	67	0.757	190	5.18	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorobutadiene	0-10 ft	N/A	ug/kg	77	0.757	190	5.18	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-1 ft	N/A	ug/kg	57	0.822	750	5.18	1,700	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-3 ft	N/A	ug/kg	67	0.822	750	5.18	1,700	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-10 ft	N/A	ug/kg	77	0.822	750	5.18	1,700	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachloroethane	0-1 ft	N/A	ug/kg	57	1.75	320	5.18	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachloroethane	0-3 ft	N/A	ug/kg	67	1.75	320	5.18	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Hexachloroethane	0-10 ft	N/A	ug/kg	77	1.75	320	5.18	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Isophorone	0-1 ft	N/A	ug/kg	57	0.522	236	6.40	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Isophorone	0-3 ft	N/A	ug/kg	67	0.522	236	6.40	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Isophorone	0-10 ft	N/A	ug/kg	77	0.522	236	6.40	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Nitrobenzene	0-1 ft	N/A	ug/kg	57	1.60	231	6.40	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Nitrobenzene	0-3 ft	N/A	ug/kg	67	1.60	231	6.40	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	Nitrobenzene	0-10 ft	N/A	ug/kg	77	1.60	231	6.40	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-1 ft	N/A	ug/kg	53	1.05	310	10.4	4,210	53	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-3 ft	N/A	ug/kg	63	1.05	310	10.4	4,210	63	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-10 ft	N/A	ug/kg	73	1.05	310	10.4	4,210	73	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-1 ft	N/A	ug/kg	57	1.29	300	5.18	1,680	57	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-3 ft	N/A	ug/kg	67	1.29	300	5.18	1,680	67	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-10 ft	N/A	ug/kg	77	1.29	300	5.18	1,680	77	-	-	-	-	0	0%	No	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-1 ft	N/A	ug/kg	54	0.593	190	2.07	1,680	53	1	-	27.0	27.0	1	2%	No	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-3 ft	N/A	ug/kg	64	0.593	190	2.07	1,680	63	1	-	27.0	27.0	1	2%	No	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-10 ft	N/A	ug/kg	74	0.593	190	2.07	1,680	73	1	-	27.0	27.0	1	1%	No	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	N/A	ug/kg	58	1.22	249	5.18	1,680	56	2	-	2.46	64.0	2	3%	No	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-3 ft	N/A	ug/kg	68	1.22	249	5.18	1,680	66	2	-	2.46	64.0	2	3%	No	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-10 ft	N/A	ug/kg	78	1.22	249	5.18	1,680	76	2	-	2.46	64.0	2	3%	No	No
Soil	SVOCs	Total	Pentachlorophenol	0-1 ft	N/A	ug/kg	58	2.01	900	10.4	3,400	54	2	2	11.0	201	4	7%	No	Yes
Soil	SVOCs	Total	Pentachlorophenol	0-3 ft	N/A	ug/kg	68	2.01	900	10.4	3,400	64	2	2	11.0	201	4	6%	No	Yes
Soil	SVOCs	Total	Pentachlorophenol	0-10 ft	N/A	ug/kg	78	2.01	900	10.4	3,400	74	2	2	11.0	201	4	5%	No	Yes
Soil	SVOCs	Total	Phenol	0-1 ft	N/A	ug/kg	58	0.749	337	5.18	1,680	56	2	-	2.00	3.70	2	3%	No	No
Soil	SVOCs	Total	Phenol	0-3 ft	N/A	ug/kg	68	0.749	337	5.18	1,680	63	4	1	2.00	35.0	5	7%	No	Yes
Soil	SVOCs	Total	Phenol	0-10 ft	N/A	ug/kg	78	0.749	337	5.18	1,680	73	4	1	2.00	35.0	5	6%	No	Yes
Soil	SVOCs	Total	2-Methylnaphthalene	0-1 ft	N/A	ug/kg	58	0.183	190	1.17	340	34	10	14	1.29	1,530	24	41%	No	Yes
Soil	SVOCs	Total	2-Methylnaphthalene	0-3 ft	N/A	ug/kg	69	0.183	190	1.17	340	42	11	16	1.29	1,530	27	39%	No	Yes
Soil	SVOCs	Total	2-Methylnaphthalene	0-10 ft	N/A	ug/kg	79	0.183	190	1.17	340	48	11	20	1.29	1,530	31	39%	No	Yes
Soil	SVOCs	Total	Acenaphthene	0-1 ft	N/A	ug/kg	58	0.531	180	1.23	340	14	8	36	1.50	2,600	44	76%	No	Yes
Soil	SVOCs	Total	Acenaphthene	0-3 ft	N/A	ug/kg	73	0.531	180	1.23	340	17	11	45	1.10	3,200	56	77%	No	Yes
Soil	SVOCs	Total	Acenaphthene	0-10 ft	N/A	ug/kg	87	0.531	180	1.23	1,440	21	11	55	1.10	3,200	66	76%	No	Yes
Soil	SVOCs	Total	Acenaphthylene	0-1 ft	N/A	ug/kg	58	0.510	190	1.17	340	37	8	13	1.39	87.7	21	36%	No	Yes
Soil	SVOCs	Total	Acenaphthylene	0-3 ft	N/A	ug/kg	73	0.510	190	1.17	340	44	8	21	1.39	295	29	40%	No	Yes
Soil	SVOCs	Total	Acenaphthylene	0-10 ft	N/A	ug/kg	87	0.510	190	1.17	340	52	8	27	1.39	295	35	40%	No	Yes
Soil	SVOCs	Total	Anthracene	0-1 ft	N/A	ug/kg	58	0.356	180	1.41	340	6	5	47	1.72	2,700	52	90%	No	Yes
Soil	SVOCs	Total	Anthracene	0-3 ft	N/A	ug/kg	73	0.356	180	1.41	340	9	6	58	1.72	8,440	64	88%	No	Yes
Soil	SVOCs	Total	Anthracene	0-10 ft	N/A	ug/kg	87	0.356	180	1.41	340	12	6	69	1.72	8,440	75	86%	No	Yes
Soil	SVOCs	Total	Fluorene	0-1 ft	N/A	ug/kg	58	0.573	180	1.23	340	19	6	33	1.69	1,200	39	67%	No	Yes
Soil	SVOCs	Total	Fluorene	0-3 ft	N/A	ug/kg	73	0.573	180	1.23	340	23	8	42	1.69	1,610	50	68%	No	Yes
Soil	SVOCs	Total	Fluorene	0-10 ft	N/A	ug/kg	87	0.573	180	1.23	340	27	8	52	1.69	1,610	60	69%	No	Yes

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(7 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Soil	SVOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	58	0.548	190	1.17	340	28	9	21	1.70	823	30	52%	No	Yes
Soil	SVOCs	Total	Naphthalene	0-3 ft	N/A	ug/kg	73	0.548	190	1.17	340	32	13	28	1.70	823	41	56%	No	Yes
Soil	SVOCs	Total	Naphthalene	0-10 ft	N/A	ug/kg	87	0.548	190	1.17	340	39	13	35	1.70	1,710	48	55%	No	Yes
Soil	SVOCs	Total	Phenanthrene	0-1 ft	N/A	ug/kg	58	49.8	49.8	49.8	49.8	1	-	57	5.64	12,000	57	98%	No	Yes
Soil	SVOCs	Total	Phenanthrene	0-3 ft	N/A	ug/kg	73	0.750	49.8	2.50	49.8	3	1	69	2.47	21,900	70	96%	No	Yes
Soil	SVOCs	Total	Phenanthrene	0-10 ft	N/A	ug/kg	87	0.713	49.8	2.40	11,400	6	1	80	2.47	21,900	81	93%	No	Yes
Soil	SVOCs	Total	Total LPAHs (KM, capped; Nds at MDL)	0-1 ft	N/A	ug/kg	58	299	299	299	299	-	-	-	8.79	18,674	57	98%	No	Yes
Soil	SVOCs	Total	Total LPAHs (KM, capped; Nds at MDL)	0-3 ft	N/A	ug/kg	73	4.56	299	15.1	299	-	-	-	6.41	34,767	70	96%	No	Yes
Soil	SVOCs	Total	Benzo(a)anthracene	0-1 ft	N/A	ug/kg	58	0.749	92.9	2.07	305	4	-	54	3.96	32,000	54	93%	No	Yes
Soil	SVOCs	Total	Benzo(a)anthracene	0-3 ft	N/A	ug/kg	73	0.749	92.9	2.07	305	7	-	66	3.96	32,000	66	90%	No	Yes
Soil	SVOCs	Total	Benzo(a)anthracene	0-10 ft	N/A	ug/kg	87	0.749	92.9	2.07	305	9	-	78	3.96	32,000	78	90%	No	Yes
Soil	SVOCs	Total	Benzo(a)pyrene	0-1 ft	N/A	ug/kg	58	0.656	49.8	2.07	152	3	-	55	7.49	33,000	55	95%	No	Yes
Soil	SVOCs	Total	Benzo(a)pyrene	0-3 ft	N/A	ug/kg	73	0.656	49.8	2.07	152	6	-	67	7.49	34,000	67	92%	No	Yes
Soil	SVOCs	Total	Benzo(a)pyrene	0-10 ft	N/A	ug/kg	87	0.656	49.8	2.07	152	8	-	79	7.49	34,000	79	91%	No	Yes
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	N/A	ug/kg	37	49.8	49.8	49.8	49.8	1	-	36	25.0	65,000	36	97%	No	Yes
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-3 ft	N/A	ug/kg	46	2.50	49.8	6.50	49.8	2	-	44	25.0	65,000	44	96%	No	Yes
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-10 ft	N/A	ug/kg	46	2.50	49.8	6.50	49.8	2	-	44	25.0	65,000	44	96%	No	Yes
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	N/A	ug/kg	58	0.202	49.8	1.23	168	8	-	50	6.89	18,000	50	86%	No	Yes
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-3 ft	N/A	ug/kg	73	0.202	49.8	1.23	168	10	-	63	4.33	18,000	63	86%	No	Yes
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-10 ft	N/A	ug/kg	87	0.202	49.8	1.23	168	12	-	75	4.33	18,000	75	86%	No	Yes
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	N/A	ug/kg	37	49.8	49.8	10.0	49.8	1	1	35	8.30	65,000	36	97%	No	Yes
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-3 ft	N/A	ug/kg	46	2.50	49.8	6.50	49.8	2	1	43	8.30	65,000	44	96%	No	Yes
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-10 ft	N/A	ug/kg	46	2.50	49.8	6.50	49.8	2	1	43	8.30	65,000	44	96%	No	Yes
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-1 ft	N/A	ug/kg	21	0.939	0.939	4.14	4.14	1	-	20	10.2	14,700	20	95%	No	Yes
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-3 ft	N/A	ug/kg	27	0.939	1.14	4.14	5.05	2	-	25	7.70	31,300	25	93%	No	Yes
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-10 ft	N/A	ug/kg	41	0.939	1.14	4.14	5.05	4	-	37	7.70	31,300	37	90%	No	Yes
Soil	SVOCs	Total	Chrysene	0-1 ft	N/A	ug/kg	58	0.741	49.8	2.07	49.8	2	-	56	6.36	32,000	56	97%	No	Yes
Soil	SVOCs	Total	Chrysene	0-3 ft	N/A	ug/kg	73	0.741	49.8	2.07	49.8	4	1	68	1.80	35,300	69	95%	No	Yes
Soil	SVOCs	Total	Chrysene	0-10 ft	N/A	ug/kg	87	0.741	49.8	2.07	49.8	6	1	80	1.80	35,300	81	93%	No	Yes
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	N/A	ug/kg	58	0.273	1,800	1.17	1,800	16	4	38	1.23	9,900	42	72%	No	Yes
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-3 ft	N/A	ug/kg	73	0.273	1,800	1.17	1,800	19	5	49	1.23	9,900	54	74%	No	Yes
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-10 ft	N/A	ug/kg	87	0.273	1,800	1.17	1,800	25	5	57	1.23	9,900	62	71%	No	Yes
Soil	SVOCs	Total	Fluoranthene	0-1 ft	N/A	ug/kg	58	1.05	71.1	2.07	152	3	-	55	8.47	54,000	55	95%	No	Yes
Soil	SVOCs	Total	Fluoranthene	0-3 ft	N/A	ug/kg	73	1.05	71.1	2.07	152	5	-	68	6.29	54,000	68	93%	No	Yes
Soil	SVOCs	Total	Fluoranthene	0-10 ft	N/A	ug/kg	87	1.05	71.1	2.07	152	7	-	80	6.29	54,000	80	92%	No	Yes
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	N/A	ug/kg	58	0.286	49.8	1.23	168	6	-	52	3.68	19,000	52	90%	No	Yes
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-3 ft	N/A	ug/kg	73	0.286	49.8	1.23	168	8	-	65	3.52	20,000	65	89%	No	Yes
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-10 ft	N/A	ug/kg	87	0.286	49.8	1.23	168	10	-	77	3.52	20,000	77	89%	No	Yes
Soil	SVOCs	Total	Pyrene	0-1 ft	N/A	ug/kg	58	0.352	49.8	2.07	49.8	2	-	56	10.0	40,000	56	97%	No	Yes
Soil	SVOCs	Total	Pyrene	0-3 ft	N/A	ug/kg	73	0.352	49.8	2.07	49.8	3	1	69	2.10	67,100	70	96%	No	Yes
Soil	SVOCs	Total	Pyrene	0-10 ft	N/A	ug/kg	87	0.352	49.8	2.07	49.8	5	1	81	2.10	67,100	82	94%	No	Yes
Soil	SVOCs	Total	Total HPAHs (KM, capped; Nds at MDL)	0-1 ft	N/A	ug/kg	58	5.46	498	16.6	498	-	-	-	37.0	367,900	56	97%	No	Yes
Soil	SVOCs	Total	Total HPAHs (KM, capped; Nds at MDL)	0-3 ft	N/A	ug/kg	73	5.46	498	16.6	498	-	-	-	16.5	367,900	70	96%	No	Yes
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-1 ft	N/A	ug/kg	55	0.0443	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-3 ft	N/A	ug/kg	66	0.0443	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-10 ft	N/A	ug/kg	76	0.0443	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	N/A	ug/kg	55	0.0650	2,300	0.437	4,600	53	2	-	0.490	0.580	2	4%	No	No
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-3 ft	N/A	ug/kg	66	0.0650	2,300	0.424	6,200	64	2	-	0.490	0.580	2	3%	No	No
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-10 ft	N/A	ug/kg	76	0.0650	2,300	0.349	6,200	73	3	-	0.0969	0.580	3	4%	No	No
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-1 ft	N/A	ug/kg	55	0.0638	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-3 ft	N/A	ug/kg	66	0.0638	2,500	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-10 ft	N/A	ug/kg	76	0.0638	2,500	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2-Trichloroethane	0-1 ft	N/A	ug/kg	55	0.0880	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2-Trichloroethane	0-3 ft	N/A	ug/kg	66	0.0880	2,500	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1,2-Trichloroethane	0-10 ft	N/A	ug/kg	76	0.0880	2,500	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloroethane	0-1 ft	N/A	ug/kg	55	0.0480	2,300	0.437	4,600	54	1	-	0.290	0.290	1	2%	No	No
Soil	VOCs	Total	1,1-Dichloroethane	0-3 ft	N/A	ug/kg	66	0.0480	2,500	0.424	6,200	65	1	-	0.290	0.290	1	2%	No	No
Soil	VOCs	Total	1,1-Dichloroethane	0-10 ft	N/A	ug/kg	76	0.0480	2,500	0.349	6,200	75	1	-	0.290	0.290	1	1%	No	No
Soil	VOCs	Total	1,1-Dichloroethene	0-1 ft	N/A	ug/kg	55	0.0700	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloroethene	0-3 ft	N/A	ug/kg	66	0.0700	3,000	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloroethene	0-10 ft	N/A	ug/kg	76	0.0700	3,000	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloropropene	0-1 ft	N/A	ug/kg	55	0.150	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,1-Dichloropropene	0-3 ft	N/A	ug/kg	66	0.150	2,500	0.424	6,200	66	-	-	-	-	0	0%	No	No

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(8 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Soil	VOCs	Total	1,1-Dichloropropene	0-10 ft	N/A	ug/kg	76	0.150	2,500	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-1 ft	N/A	ug/kg	55	0.108	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-3 ft	N/A	ug/kg	66	0.108	2,800	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-10 ft	N/A	ug/kg	76	0.108	2,800	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichloropropane	0-1 ft	N/A	ug/kg	55	0.0756	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichloropropane	0-3 ft	N/A	ug/kg	66	0.0756	2,800	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,3-Trichloropropane	0-10 ft	N/A	ug/kg	76	0.0756	2,800	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	N/A	ug/kg	55	0.110	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	N/A	ug/kg	66	0.110	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-10 ft	N/A	ug/kg	76	0.110	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	N/A	ug/kg	55	0.0478	100	0.437	100	37	15	3	0.110	14,300	18	33%	No	Yes
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-3 ft	N/A	ug/kg	66	0.0478	100	0.424	100	42	18	6	0.0980	14,300	24	36%	No	Yes
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-10 ft	N/A	ug/kg	76	0.0478	100	0.349	100	51	19	6	0.0980	14,300	25	33%	No	Yes
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-1 ft	N/A	ug/kg	55	0.135	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-3 ft	N/A	ug/kg	66	0.135	3,800	0.424	12,000	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-10 ft	N/A	ug/kg	76	0.135	3,800	0.349	12,000	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-1 ft	N/A	ug/kg	55	0.0575	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-3 ft	N/A	ug/kg	66	0.0575	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-10 ft	N/A	ug/kg	76	0.0575	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichlorobenzene	0-1 ft	N/A	ug/kg	55	0.0575	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichlorobenzene	0-3 ft	N/A	ug/kg	66	0.0575	2,500	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichlorobenzene	0-10 ft	N/A	ug/kg	76	0.0575	2,500	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-1 ft	N/A	ug/kg	55	0.0540	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-3 ft	N/A	ug/kg	66	0.0540	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-10 ft	N/A	ug/kg	76	0.0540	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloropropane	0-1 ft	N/A	ug/kg	55	0.0428	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloropropane	0-3 ft	N/A	ug/kg	66	0.0428	2,500	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,2-Dichloropropane	0-10 ft	N/A	ug/kg	76	0.0428	2,500	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	N/A	ug/kg	55	0.0400	100	0.437	509	47	7	1	0.0435	5,410	8	15%	No	Yes
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-3 ft	N/A	ug/kg	66	0.0400	100	0.424	509	55	8	3	0.0435	6,500	11	17%	No	Yes
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-10 ft	N/A	ug/kg	76	0.0400	100	0.349	509	65	8	3	0.0435	6,500	11	14%	No	Yes
Soil	VOCs	Total	1,3-Dichlorobenzene	0-1 ft	N/A	ug/kg	55	0.0391	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichlorobenzene	0-3 ft	N/A	ug/kg	66	0.0391	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichlorobenzene	0-10 ft	N/A	ug/kg	76	0.0391	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichloropropane	0-1 ft	N/A	ug/kg	55	0.0590	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichloropropane	0-3 ft	N/A	ug/kg	66	0.0590	2,500	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,3-Dichloropropane	0-10 ft	N/A	ug/kg	76	0.0590	2,500	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	55	0.0551	2,300	0.437	4,600	54	1	-	0.160	0.160	1	2%	No	No
Soil	VOCs	Total	1,4-Dichlorobenzene	0-3 ft	N/A	ug/kg	66	0.0551	2,500	0.424	6,200	64	2	-	0.140	0.160	2	3%	No	No
Soil	VOCs	Total	1,4-Dichlorobenzene	0-10 ft	N/A	ug/kg	76	0.0551	2,500	0.349	6,200	74	2	-	0.140	0.160	2	3%	No	No
Soil	VOCs	Total	2,2-Dichloropropane	0-1 ft	N/A	ug/kg	55	0.0763	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2,2-Dichloropropane	0-3 ft	N/A	ug/kg	66	0.0763	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2,2-Dichloropropane	0-10 ft	N/A	ug/kg	76	0.0763	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Butanone (MEK)	0-1 ft	N/A	ug/kg	55	1.09	11,500	2.18	23,000	39	10	6	4.90	50.0	16	29%	No	Yes
Soil	VOCs	Total	2-Butanone (MEK)	0-3 ft	N/A	ug/kg	66	1.06	12,000	2.12	31,000	47	13	6	2.30	50.0	19	29%	No	Yes
Soil	VOCs	Total	2-Butanone (MEK)	0-10 ft	N/A	ug/kg	76	0.872	12,000	1.74	31,000	57	13	6	2.30	50.0	19	25%	No	Yes
Soil	VOCs	Total	2-Chlorotoluene	0-1 ft	N/A	ug/kg	55	0.0490	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Chlorotoluene	0-3 ft	N/A	ug/kg	66	0.0490	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Chlorotoluene	0-10 ft	N/A	ug/kg	76	0.0490	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	2-Hexanone	0-1 ft	N/A	ug/kg	55	0.780	11,500	2.18	23,000	52	3	-	4.70	8.80	3	5%	No	Yes
Soil	VOCs	Total	2-Hexanone	0-3 ft	N/A	ug/kg	66	0.780	11,500	2.12	31,000	63	3	-	4.70	8.80	3	5%	No	No
Soil	VOCs	Total	2-Hexanone	0-10 ft	N/A	ug/kg	76	0.780	11,500	1.74	31,000	73	3	-	4.70	8.80	3	4%	No	No
Soil	VOCs	Total	4-Chlorotoluene	0-1 ft	N/A	ug/kg	55	0.0920	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	4-Chlorotoluene	0-3 ft	N/A	ug/kg	66	0.0920	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	4-Chlorotoluene	0-10 ft	N/A	ug/kg	76	0.0920	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	4-Isopropyltoluene	0-1 ft	N/A	ug/kg	55	0.0766	2,300	0.437	4,600	41	13	1	0.0833	12.0	14	25%	No	Yes
Soil	VOCs	Total	4-Isopropyltoluene	0-3 ft	N/A	ug/kg	66	0.0766	2,300	0.424	6,200	49	15	2	0.0833	161	17	26%	No	Yes
Soil	VOCs	Total	4-Isopropyltoluene	0-10 ft	N/A	ug/kg	76	0.0676	2,300	0.349	6,200	58	15	3	0.0833	161	18	24%	No	Yes
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	N/A	ug/kg	55	0.240	11,500	2.18	23,000	46	9	-	0.330	1.20	9	16%	No	Yes
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-3 ft	N/A	ug/kg	66	0.240	11,500	2.12	31,000	57	9	-	0.330	1.20	9	14%	No	Yes
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-10 ft	N/A	ug/kg	76	0.240	11,500	1.74	31,000	67	9	-	0.330	1.20	9	12%	No	Yes
Soil	VOCs	Total	Acetone	0-1 ft	N/A	ug/kg	55	1.09	11,500	2.18	23,000	37	1	17	7.90	540	18	33%	No	Yes
Soil	VOCs	Total	Acetone	0-3 ft	N/A	ug/kg	66	1.06	11,500	2.12	31,000	43	4	19	7.90	540	23	35%	No	Yes

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(9 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Soil	VOCs	Total	Acetone	0-10 ft	N/A	ug/kg	76	0.872	11,500	1.74	31,000	53	4	19	7.90	540	23	30%	No	Yes
Soil	VOCs	Total	Benzene	0-1 ft	N/A	ug/kg	55	0.218	2,300	0.437	4,600	40	15	-	0.160	1.20	15	27%	No	Yes
Soil	VOCs	Total	Benzene	0-3 ft	N/A	ug/kg	66	0.140	2,500	0.424	6,200	49	17	-	0.160	1.20	17	26%	No	Yes
Soil	VOCs	Total	Benzene	0-10 ft	N/A	ug/kg	76	0.140	2,500	0.349	6,200	57	19	-	0.160	1.20	19	25%	No	Yes
Soil	VOCs	Total	Bromobenzene	0-1 ft	N/A	ug/kg	55	0.0450	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromobenzene	0-3 ft	N/A	ug/kg	66	0.0450	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromobenzene	0-10 ft	N/A	ug/kg	76	0.0450	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromochloromethane	0-1 ft	N/A	ug/kg	55	0.0519	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromochloromethane	0-3 ft	N/A	ug/kg	66	0.0519	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromochloromethane	0-10 ft	N/A	ug/kg	76	0.0519	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromodichloromethane	0-1 ft	N/A	ug/kg	55	0.0440	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromodichloromethane	0-3 ft	N/A	ug/kg	66	0.0440	2,500	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromodichloromethane	0-10 ft	N/A	ug/kg	76	0.0440	2,500	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromoform	0-1 ft	N/A	ug/kg	55	0.0701	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromoform	0-3 ft	N/A	ug/kg	66	0.0701	2,500	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromoform	0-10 ft	N/A	ug/kg	76	0.0701	2,500	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Bromomethane	0-1 ft	N/A	ug/kg	55	0.218	2,300	0.437	4,600	48	7	-	0.480	5.00	7	13%	No	Yes
Soil	VOCs	Total	Bromomethane	0-3 ft	N/A	ug/kg	66	0.212	6,200	0.424	12,000	58	8	-	0.480	5.00	8	12%	No	Yes
Soil	VOCs	Total	Bromomethane	0-10 ft	N/A	ug/kg	76	0.174	6,200	0.349	12,000	68	8	-	0.480	5.00	8	11%	No	Yes
Soil	VOCs	Total	Carbon Disulfide	0-1 ft	N/A	ug/kg	55	0.218	2,300	0.437	4,600	36	18	1	0.180	6.90	19	35%	No	Yes
Soil	VOCs	Total	Carbon Disulfide	0-3 ft	N/A	ug/kg	66	0.212	2,500	0.424	6,200	42	23	1	0.180	6.90	24	36%	No	Yes
Soil	VOCs	Total	Carbon Disulfide	0-10 ft	N/A	ug/kg	76	0.174	2,500	0.349	6,200	52	23	1	0.180	6.90	24	32%	No	Yes
Soil	VOCs	Total	Carbon Tetrachloride	0-1 ft	N/A	ug/kg	55	0.0780	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Carbon Tetrachloride	0-3 ft	N/A	ug/kg	66	0.0780	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Carbon Tetrachloride	0-10 ft	N/A	ug/kg	76	0.0780	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chlorobenzene	0-1 ft	N/A	ug/kg	55	0.0503	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chlorobenzene	0-3 ft	N/A	ug/kg	66	0.0503	2,500	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chlorobenzene	0-10 ft	N/A	ug/kg	76	0.0503	2,500	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloroethane	0-1 ft	N/A	ug/kg	55	0.218	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloroethane	0-3 ft	N/A	ug/kg	66	0.212	6,200	0.424	12,000	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloroethane	0-10 ft	N/A	ug/kg	76	0.174	6,200	0.349	12,000	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Chloroform	0-1 ft	N/A	ug/kg	55	0.0480	2,300	0.437	4,600	52	3	-	0.260	19.0	3	5%	No	Yes
Soil	VOCs	Total	Chloroform	0-3 ft	N/A	ug/kg	66	0.0480	2,300	0.424	6,200	63	3	-	0.260	19.0	3	5%	No	No
Soil	VOCs	Total	Chloroform	0-10 ft	N/A	ug/kg	76	0.0480	2,300	0.349	6,200	73	3	-	0.260	19.0	3	4%	No	No
Soil	VOCs	Total	Chloromethane	0-1 ft	N/A	ug/kg	55	0.0570	2,300	0.437	4,600	53	2	-	0.230	0.250	2	4%	No	No
Soil	VOCs	Total	Chloromethane	0-3 ft	N/A	ug/kg	66	0.0570	5,000	0.424	12,000	64	2	-	0.230	0.250	2	3%	No	No
Soil	VOCs	Total	Chloromethane	0-10 ft	N/A	ug/kg	76	0.0570	5,000	0.349	12,000	74	2	-	0.230	0.250	2	3%	No	No
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	55	0.0810	2,300	0.437	4,600	54	1	-	12.0	12.0	1	2%	No	No
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-3 ft	N/A	ug/kg	66	0.0810	2,500	0.424	6,200	64	1	1	12.0	120	2	3%	No	No
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-10 ft	N/A	ug/kg	76	0.0810	2,500	0.349	6,200	72	1	3	4.95	120	4	5%	No	Yes
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-1 ft	N/A	ug/kg	55	0.0310	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-3 ft	N/A	ug/kg	66	0.0310	2,500	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-10 ft	N/A	ug/kg	76	0.0310	2,500	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromochloromethane	0-1 ft	N/A	ug/kg	55	0.0730	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromochloromethane	0-3 ft	N/A	ug/kg	66	0.0730	2,500	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromochloromethane	0-10 ft	N/A	ug/kg	76	0.0730	2,500	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromomethane	0-1 ft	N/A	ug/kg	55	0.0734	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromomethane	0-3 ft	N/A	ug/kg	66	0.0734	2,800	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dibromomethane	0-10 ft	N/A	ug/kg	76	0.0734	2,800	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Dichlorodifluoromethane	0-1 ft	N/A	ug/kg	55	0.0463	2,300	0.437	4,600	51	2	2	0.260	94.0	4	7%	No	Yes
Soil	VOCs	Total	Dichlorodifluoromethane	0-3 ft	N/A	ug/kg	66	0.0463	4,200	0.424	12,000	62	2	2	0.260	94.0	4	6%	No	Yes
Soil	VOCs	Total	Dichlorodifluoromethane	0-10 ft	N/A	ug/kg	76	0.0463	4,200	0.349	12,000	70	4	2	0.0850	94.0	6	8%	No	Yes
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	N/A	ug/kg	55	0.140	2,300	0.674	4,600	42	11	2	0.240	460	13	24%	No	Yes
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-3 ft	N/A	ug/kg	66	0.140	2,300	0.674	6,200	48	16	2	0.240	460	18	27%	No	Yes
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-10 ft	N/A	ug/kg	76	0.140	2,300	0.349	6,200	58	16	2	0.240	460	18	24%	No	Yes
Soil	VOCs	Total	Ethylbenzene	0-1 ft	N/A	ug/kg	55	0.0410	255	0.437	4,600	46	9	-	0.0720	2,700	9	16%	No	Yes
Soil	VOCs	Total	Ethylbenzene	0-3 ft	N/A	ug/kg	66	0.0410	1,800	0.424	6,200	55	10	1	0.0720	2,700	11	17%	No	Yes
Soil	VOCs	Total	Ethylbenzene	0-10 ft	N/A	ug/kg	76	0.0384	1,800	0.349	6,200	64	11	1	0.0720	2,700	12	16%	No	Yes
Soil	VOCs	Total	Hexachlorobutadiene	0-1 ft	N/A	ug/kg	55	0.0664	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Hexachlorobutadiene	0-3 ft	N/A	ug/kg	66	0.0664	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Hexachlorobutadiene	0-10 ft	N/A	ug/kg	76	0.0664	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Isopropylbenzene	0-1 ft	N/A	ug/kg	55	0.0310	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Isopropylbenzene	0-3 ft	N/A	ug/kg	66	0.0310	3,000	0.424	6,200	65	-	1	47.3	47.3	1	2%	No	No

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(10 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Soil	VOCs	Total	Isopropylbenzene	0-10 ft	N/A	ug/kg	76	0.0310	3,000	0.349	6,200	75	-	1	47.3	47.3	1	1%	No	No
Soil	VOCs	Total	m,p-Xylenes	0-1 ft	N/A	ug/kg	55	0.0930	509	0.873	1,020	46	8	1	0.140	9,800	9	16%	No	Yes
Soil	VOCs	Total	m,p-Xylenes	0-3 ft	N/A	ug/kg	66	0.0930	509	0.849	1,020	54	9	3	0.140	9,800	12	18%	No	Yes
Soil	VOCs	Total	m,p-Xylenes	0-10 ft	N/A	ug/kg	76	0.0930	509	0.698	1,020	63	10	3	0.140	9,800	13	17%	No	Yes
Soil	VOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	55	0.218	100	0.437	270	44	8	3	0.450	8,360	11	20%	No	Yes
Soil	VOCs	Total	Naphthalene	0-3 ft	N/A	ug/kg	66	0.212	2,500	0.424	6,200	52	10	4	0.450	8,360	14	21%	No	Yes
Soil	VOCs	Total	Naphthalene	0-10 ft	N/A	ug/kg	76	0.192	2,500	0.383	6,200	62	10	4	0.450	8,360	14	18%	No	Yes
Soil	VOCs	Total	n-Butylbenzene	0-1 ft	N/A	ug/kg	55	0.0880	2,300	0.437	4,600	54	1	-	0.0920	0.0920	1	2%	No	No
Soil	VOCs	Total	n-Butylbenzene	0-3 ft	N/A	ug/kg	66	0.0880	2,300	0.424	6,200	65	1	-	0.0920	0.0920	1	2%	No	No
Soil	VOCs	Total	n-Butylbenzene	0-10 ft	N/A	ug/kg	76	0.0880	2,300	0.349	6,200	75	1	-	0.0920	0.0920	1	1%	No	No
Soil	VOCs	Total	n-Propylbenzene	0-1 ft	N/A	ug/kg	55	0.0531	2,300	0.437	4,600	54	1	-	0.150	0.150	1	2%	No	No
Soil	VOCs	Total	n-Propylbenzene	0-3 ft	N/A	ug/kg	66	0.0531	2,800	0.424	6,200	63	2	1	0.150	122	3	5%	No	No
Soil	VOCs	Total	n-Propylbenzene	0-10 ft	N/A	ug/kg	76	0.0531	2,800	0.349	6,200	73	2	1	0.150	122	3	4%	No	No
Soil	VOCs	Total	o-Xylene	0-1 ft	N/A	ug/kg	55	0.0411	255	0.437	509	53	2	-	0.170	0.180	2	4%	No	No
Soil	VOCs	Total	o-Xylene	0-3 ft	N/A	ug/kg	70	0.0411	255	0.424	6,200	65	4	1	0.170	3,200	5	7%	No	Yes
Soil	VOCs	Total	o-Xylene	0-10 ft	N/A	ug/kg	84	0.0411	255	0.349	6,200	76	6	2	0.170	4,260	8	10%	No	Yes
Soil	VOCs	Total	sec-Butylbenzene	0-1 ft	N/A	ug/kg	55	0.0442	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	sec-Butylbenzene	0-3 ft	N/A	ug/kg	66	0.0442	2,300	0.424	6,200	64	1	1	0.435	90.2	2	3%	No	No
Soil	VOCs	Total	sec-Butylbenzene	0-10 ft	N/A	ug/kg	76	0.0442	2,300	0.349	6,200	74	1	1	0.435	90.2	2	3%	No	No
Soil	VOCs	Total	Styrene	0-1 ft	N/A	ug/kg	55	0.0403	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Styrene	0-3 ft	N/A	ug/kg	66	0.0340	2,500	0.424	12,000	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Styrene	0-10 ft	N/A	ug/kg	76	0.0340	2,500	0.349	12,000	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	tert-Butylbenzene	0-1 ft	N/A	ug/kg	55	0.0273	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	tert-Butylbenzene	0-3 ft	N/A	ug/kg	66	0.0273	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	tert-Butylbenzene	0-10 ft	N/A	ug/kg	76	0.0273	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	N/A	ug/kg	55	0.114	255	1.13	509	45	4	6	0.162	65.0	10	18%	No	Yes
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-3 ft	N/A	ug/kg	70	0.114	255	1.13	509	51	5	14	0.162	420,000	19	27%	No	Yes
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-10 ft	N/A	ug/kg	84	0.114	255	1.13	509	51	6	27	0.162	420,000	33	39%	No	Yes
Soil	VOCs	Total	Toluene	0-1 ft	N/A	ug/kg	55	0.0440	255	0.437	509	32	22	1	0.240	5.80	23	42%	No	Yes
Soil	VOCs	Total	Toluene	0-3 ft	N/A	ug/kg	70	0.0440	255	0.424	509	34	33	3	0.110	39,000	36	51%	No	Yes
Soil	VOCs	Total	Toluene	0-10 ft	N/A	ug/kg	84	0.0440	255	0.349	509	39	37	8	0.110	133,000	45	54%	No	Yes
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	55	0.0480	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-3 ft	N/A	ug/kg	66	0.0480	3,000	0.424	6,200	65	-	1	2.28	2.28	1	2%	No	No
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-10 ft	N/A	ug/kg	76	0.0480	3,000	0.349	6,200	75	-	1	2.28	2.28	1	1%	No	No
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-1 ft	N/A	ug/kg	55	0.0513	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-3 ft	N/A	ug/kg	66	0.0513	2,300	0.424	6,200	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-10 ft	N/A	ug/kg	76	0.0513	2,300	0.349	6,200	76	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Trichloroethene (TCE)	0-1 ft	N/A	ug/kg	55	0.0440	2,300	0.437	4,600	51	4	-	0.0614	0.171	4	7%	No	Yes
Soil	VOCs	Total	Trichloroethene (TCE)	0-3 ft	N/A	ug/kg	66	0.0440	2,300	0.424	6,200	59	6	1	0.0614	6,080	7	11%	No	Yes
Soil	VOCs	Total	Trichloroethene (TCE)	0-10 ft	N/A	ug/kg	76	0.0440	2,300	0.349	6,200	66	7	3	0.0450	6,080	10	13%	No	Yes
Soil	VOCs	Total	Trichlorofluoromethane	0-1 ft	N/A	ug/kg	55	0.0540	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Trichlorofluoromethane	0-3 ft	N/A	ug/kg	66	0.0540	2,300	0.424	12,000	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Trichlorofluoromethane	0-10 ft	N/A	ug/kg	76	0.0540	2,300	0.349	12,000	75	1	-	0.325	0.325	1	1%	No	No
Soil	VOCs	Total	Vinyl Acetate	0-1 ft	N/A	ug/kg	54	0.600	11,500	2.18	23,000	54	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Acetate	0-3 ft	N/A	ug/kg	65	0.600	11,500	2.12	23,000	65	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Acetate	0-10 ft	N/A	ug/kg	75	0.600	11,500	1.74	23,000	75	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Chloride	0-1 ft	N/A	ug/kg	55	0.0570	2,300	0.437	4,600	55	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Chloride	0-3 ft	N/A	ug/kg	66	0.0570	3,800	0.424	12,000	66	-	-	-	-	0	0%	No	No
Soil	VOCs	Total	Vinyl Chloride	0-10 ft	N/A	ug/kg	76	0.0570	3,800	0.349	12,000	76	-	-	-	-	0	0%	No	No
Groundwater	Metals	Total	Antimony	N/A	N/A	ug/L	19	3.00	50.0	3.00	50.0	11	7	1	0.294	3.89	8	42%	No	--
Groundwater	Metals	Total	Arsenic	N/A	N/A	ug/L	73	0.500	5.00	0.500	5.00	10	6	57	0.138	21.3	63	86%	No	Yes
Groundwater	Metals	Total	Barium	N/A	N/A	ug/L	19	-	-	-	-	0	-	19	7.15	304	19	100%	No	--
Groundwater	Metals	Total	Beryllium	N/A	N/A	ug/L	19	0.0142	5.00	0.500	5.00	12	7	-	0.222	0.435	7	37%	No	--
Groundwater	Metals	Total	Cadmium	N/A	N/A	ug/L	19	0.00710	5.00	0.500	5.00	13	3	3	0.0100	5.60	6	32%	No	--
Groundwater	Metals	Total	Chromium	N/A	N/A	ug/L	19	1.00	10.0	1.00	10.0	12	-	7	3.36	18.5	7	37%	No	--
Groundwater	Metals	Total	Copper	N/A	N/A	ug/L	19	10.0	10.0	10.0	10.0	8	-	11	2.33	201	11	58%	No	--
Groundwater	Metals	Total	Iron	N/A	N/A	ug/L	73	20.0	60.6	20.0	60.6	7	4	62	9.40	42,900	66	90%	No	Yes
Groundwater	Metals	Total	Lead	N/A	N/A	ug/L	53	0.00600	3.00	0.0200	3.00	21	-	32	0.0400	78.2	32	60%	No	Yes
Groundwater	Metals	Total	Manganese	N/A	N/A	ug/L	53	10.0	10.0	5.00	10.0	1	2	50	0.810	5,380	52	98%	No	Yes
Groundwater	Metals	Total	Mercury	N/A	N/A	ug/L	24	0.0500	0.200	0.200	0.200	20	2	2	0.0300	0.330	4	17%	No	Yes
Groundwater	Metals	Total	Nickel	N/A	N/A	ug/L	19	10.0	10.0	1.00	10.0	8	1	10	0.850	116	11	58%	No	--
Groundwater	Metals	Total	Selenium	N/A	N/A	ug/L	19	0.385	5.00	3.00	5.00	12	3	4	0.530	32.9	7	37%	No	--
Groundwater	Metals	Total	Silver	N/A	N/A	ug/L	19	0.100	10.0	0.100	10.0	14	1	4	0.0810	0.658	5	26%	No	--

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(11 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Groundwater	Metals	Total	Thallium	N/A	N/A	ug/L	19	5.00	5.00	0.500	5.00	10	9	-	0.115	0.323	9	47%	No	--
Groundwater	Metals	Total	Vanadium	N/A	N/A	ug/L	20	0.0700	0.200	0.200	10.0	2	6	12	0.130	5.90	18	90%	No	Yes
Groundwater	Metals	Total	Zinc	N/A	N/A	ug/L	19	10.0	10.0	10.0	10.0	4	-	15	4.27	2,660	15	79%	No	--
Groundwater	Metals	Dissolved	Antimony	N/A	N/A	ug/L	3	50.0	50.0	50.0	50.0	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Arsenic	N/A	N/A	ug/L	56	0.500	5.00	0.500	5.00	7	3	46	0.220	19.3	49	88%	No	Yes
Groundwater	Metals	Dissolved	Barium	N/A	N/A	ug/L	3	-	-	-	-	0	-	3	21.2	134	3	100%	Yes	--
Groundwater	Metals	Dissolved	Beryllium	N/A	N/A	ug/L	3	5.00	5.00	5.00	5.00	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Cadmium	N/A	N/A	ug/L	3	5.00	5.00	5.00	5.00	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Calcium	N/A	N/A	ug/L	14	-	-	-	-	0	-	14	6,690	172,000	14	100%	No	--
Groundwater	Metals	Dissolved	Chromium	N/A	N/A	ug/L	3	10.0	10.0	10.0	10.0	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Copper	N/A	N/A	ug/L	3	10.0	10.0	10.0	10.0	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Iron	N/A	N/A	ug/L	56	4.00	50.0	20.0	50.0	24	9	23	5.80	35,400	32	57%	No	Yes
Groundwater	Metals	Dissolved	Lead	N/A	N/A	ug/L	36	0.00600	3.00	0.0200	3.00	20	7	9	0.0120	3.50	16	44%	No	Yes
Groundwater	Metals	Dissolved	Magnesium	N/A	N/A	ug/L	14	-	-	-	-	0	-	14	883	25,800	14	100%	No	--
Groundwater	Metals	Dissolved	Manganese	N/A	N/A	ug/L	36	0.400	0.400	0.400	5.00	2	2	32	0.120	5,540	34	94%	No	Yes
Groundwater	Metals	Dissolved	Mercury	N/A	N/A	ug/L	8	0.0300	0.200	0.200	0.200	8	-	-	-	-	0	0%	No	--
Groundwater	Metals	Dissolved	Nickel	N/A	N/A	ug/L	3	10.0	10.0	10.0	10.0	2	-	1	18.6	18.6	1	33%	Yes	--
Groundwater	Metals	Dissolved	Potassium	N/A	N/A	ug/L	14	-	-	2,000	2,000	0	4	10	782	12,900	14	100%	No	--
Groundwater	Metals	Dissolved	Selenium	N/A	N/A	ug/L	3	5.00	5.00	5.00	5.00	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Silver	N/A	N/A	ug/L	3	10.0	10.0	10.0	10.0	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Sodium	N/A	N/A	ug/L	14	-	-	-	-	0	-	14	4,040	740,000	14	100%	No	--
Groundwater	Metals	Dissolved	Thallium	N/A	N/A	ug/L	3	5.00	5.00	5.00	5.00	3	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Vanadium	N/A	N/A	ug/L	20	0.0700	0.800	0.200	10.0	5	5	10	0.145	3.10	15	75%	No	Yes
Groundwater	Metals	Dissolved	Zinc	N/A	N/A	ug/L	3	10.0	10.0	10.0	10.0	2	-	1	196	196	1	33%	Yes	--
Groundwater	Butyltins	Total	Dibutyltin	N/A	N/A	ug/L	39	0.00111	0.00810	0.00302	0.0500	28	2	9	0.00501	0.447	11	28%	No	Yes
Groundwater	Butyltins	Total	Monobutyltin	N/A	N/A	ug/L	59	0.00105	0.0290	0.00302	0.0870	50	3	6	0.00449	0.240	9	15%	No	Yes
Groundwater	Butyltins	Total	Tetrabutyltin	N/A	N/A	ug/L	8	0.00110	0.00119	0.00300	0.00325	8	-	-	-	-	0	0%	No	--
Groundwater	Butyltins	Total	Tributyltin	N/A	N/A	ug/L	8	0.00156	0.00163	0.00402	0.00419	2	-	6	0.0171	0.0601	6	75%	No	--
Groundwater	Herbicides	Total	2,4,5-T	N/A	N/A	ug/L	21	0.0566	0.150	0.100	0.160	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	2,4,5-TP (Silvex)	N/A	N/A	ug/L	21	0.0227	0.100	0.0800	0.100	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	2,4-D	N/A	N/A	ug/L	21	0.0296	1.00	0.0800	1.00	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	2,4-DB	N/A	N/A	ug/L	21	0.0557	1.00	0.160	1.00	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	4-Nitrophenol	N/A	N/A	ug/L	8	0.0114	0.0114	0.0800	0.0800	7	-	1	0.840	0.840	1	13%	No	--
Groundwater	Herbicides	Total	Dalapon	N/A	N/A	ug/L	21	0.0124	2.00	0.0800	2.00	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	Dicamba	N/A	N/A	ug/L	21	0.0221	0.100	0.0800	0.100	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	Dichloroprop	N/A	N/A	ug/L	21	0.0114	1.00	0.0800	1.00	20	-	1	1.10	1.10	1	5%	No	No
Groundwater	Herbicides	Total	Dinoseb	N/A	N/A	ug/L	21	0.0292	0.500	0.0800	0.500	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	MCPA	N/A	N/A	ug/L	21	0.0114	50.0	0.0800	50.0	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	MCPP	N/A	N/A	ug/L	21	0.0134	50.0	0.0800	50.0	21	-	-	-	-	0	0%	No	No
Groundwater	Herbicides	Total	Pentachlorophenol	N/A	N/A	ug/L	8	0.0259	0.0259	0.0800	0.0800	7	-	1	0.112	0.112	1	13%	No	--
Groundwater	Pesticides	Total	4,4'-DDD	N/A	N/A	ug/L	22	0.000458	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	4,4'-DDE	N/A	N/A	ug/L	22	0.000380	0.100	0.00195	0.100	21	-	1	0.00246	0.00246	1	5%	No	No
Groundwater	Pesticides	Total	4,4'-DDT	N/A	N/A	ug/L	22	0.000486	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Aldrin	N/A	N/A	ug/L	22	0.000111	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	BHC (alpha)	N/A	N/A	ug/L	22	0.000358	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	BHC (beta)	N/A	N/A	ug/L	22	0.000415	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	BHC (delta)	N/A	N/A	ug/L	22	0.000228	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	BHC (gamma) Lindane	N/A	N/A	ug/L	22	0.000700	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Chlordane (alpha)	N/A	N/A	ug/L	14	0.0470	0.0500	0.0470	0.0500	14	-	-	-	-	0	0%	No	--
Groundwater	Pesticides	Total	Chlordane (gamma)	N/A	N/A	ug/L	14	0.0470	0.0500	0.0470	0.0500	14	-	-	-	-	0	0%	No	--
Groundwater	Pesticides	Total	Chlordane (technical)	N/A	N/A	ug/L	8	0.00312	0.0114	0.00973	0.0137	8	-	-	-	-	0	0%	No	--
Groundwater	Pesticides	Total	Dieldrin	N/A	N/A	ug/L	22	0.000294	0.100	0.00195	0.100	21	1	-	0.000982	0.000982	1	5%	No	No
Groundwater	Pesticides	Total	Endosulfan I	N/A	N/A	ug/L	22	0.000485	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Endosulfan II	N/A	N/A	ug/L	22	0.000368	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Endosulfan Sulfate	N/A	N/A	ug/L	22	0.000523	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Endrin Aldehyde	N/A	N/A	ug/L	22	0.000947	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Endrin Ketone	N/A	N/A	ug/L	22	0.000335	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Endrin	N/A	N/A	ug/L	22	0.000301	0.100	0.00195	0.100	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Heptachlor Epoxide	N/A	N/A	ug/L	22	0.000364	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Heptachlor	N/A	N/A	ug/L	22	0.000733	0.0500	0.000973	0.0500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Methoxychlor	N/A	N/A	ug/L	22	0.000522	0.500	0.00973	0.500	22	-	-	-	-	0	0%	No	No
Groundwater	Pesticides	Total	Toxaphene	N/A	N/A	ug/L	22	0.0113	1.00	0.0973	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Aroclor 1016	N/A	N/A	ug/L	22	0.00199	1.00	0.00992	1.00	22	-	-	-	-	0	0%	No	No

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(12 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Groundwater	PCB Aroclors	Total	Aroclor 1221	N/A	N/A	ug/L	22	0.00496	1.00	0.0198	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Aroclor 1232	N/A	N/A	ug/L	22	0.00236	1.00	0.00992	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Aroclor 1242	N/A	N/A	ug/L	22	0.00327	1.00	0.00992	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Aroclor 1248	N/A	N/A	ug/L	22	0.00155	1.00	0.00992	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Aroclor 1254	N/A	N/A	ug/L	22	0.00199	1.00	0.00992	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	PCB Aroclors	Total	Aroclor 1260	N/A	N/A	ug/L	22	0.00109	1.00	0.00992	1.00	22	-	-	-	-	0	0%	No	No
Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	N/A	ug/L	75	11.0	250	100	250	36	13	26	13.0	1,800	39	52%	No	Yes
Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	N/A	ug/L	75	19.0	750	100	750	48	7	20	51.0	1,900	27	36%	No	Yes
Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	N/A	ug/L	77	13.0	100	100	250	57	17	3	13.0	430	20	26%	No	Yes
Groundwater	SVOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	23	0.0100	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	23	0.0160	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	23	0.0170	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	54	0.0150	10.0	0.0999	10.0	52	2	-	0.0258	0.0601	2	4%	No	No
Groundwater	SVOCs	Total	2,4,5-Trichlorophenol	N/A	N/A	ug/L	23	0.0110	48.0	0.0999	48.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2,4,6-Trichlorophenol	N/A	N/A	ug/L	23	0.0120	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2,4-Dichlorophenol	N/A	N/A	ug/L	23	0.0150	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2,4-Dimethylphenol	N/A	N/A	ug/L	23	0.0150	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2,4-Dinitrophenol	N/A	N/A	ug/L	23	0.0300	48.0	0.500	48.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2,4-Dinitrotoluene	N/A	N/A	ug/L	23	0.0130	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2,6-Dinitrotoluene	N/A	N/A	ug/L	23	0.0200	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2-Chloronaphthalene	N/A	N/A	ug/L	23	0.00150	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2-Chlorophenol	N/A	N/A	ug/L	23	0.0170	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2-Methylnaphthalene	N/A	N/A	ug/L	23	0.0150	10.0	0.0999	10.0	19	4	-	0.0385	0.360	4	17%	No	Yes
Groundwater	SVOCs	Total	2-Methylphenol	N/A	N/A	ug/L	23	0.0240	10.0	0.0999	10.0	22	-	1	76.0	76.0	1	4%	No	No
Groundwater	SVOCs	Total	2-Nitroaniline	N/A	N/A	ug/L	23	0.0180	48.0	0.0999	48.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	2-Nitrophenol	N/A	N/A	ug/L	23	0.0220	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	3,3'-Dichlorobenzidine	N/A	N/A	ug/L	23	0.0360	19.0	0.0999	19.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	3-Nitroaniline	N/A	N/A	ug/L	23	0.0330	48.0	0.0999	48.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4,6-Dinitro-2-methylphenol	N/A	N/A	ug/L	23	0.0220	48.0	0.500	48.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4-Bromophenyl Phenyl Ether	N/A	N/A	ug/L	23	0.0120	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4-Chloro-3-methylphenol	N/A	N/A	ug/L	23	0.0539	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4-Chloroaniline	N/A	N/A	ug/L	23	0.0390	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4-Chlorophenyl Phenyl Ether	N/A	N/A	ug/L	23	0.0150	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4-Nitroaniline	N/A	N/A	ug/L	23	0.0210	48.0	0.0999	48.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	4-Nitrophenol	N/A	N/A	ug/L	53	0.0290	48.0	0.500	48.0	53	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Acenaphthene	N/A	N/A	ug/L	23	0.00160	10.0	0.00999	10.0	21	-	2	0.111	0.239	2	9%	No	Yes
Groundwater	SVOCs	Total	Acenaphthylene	N/A	N/A	ug/L	23	0.00150	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Aniline	N/A	N/A	ug/L	23	0.0000616	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Anthracene	N/A	N/A	ug/L	23	0.00150	10.0	0.00999	10.0	22	-	1	0.0589	0.0589	1	4%	No	No
Groundwater	SVOCs	Total	Benzidine	N/A	N/A	ug/L	23	0.0240	100	0.500	100	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Benzo(a)anthracene	N/A	N/A	ug/L	23	0.00426	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Benzo(a)pyrene	N/A	N/A	ug/L	23	0.00470	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Benzo(b)fluoranthene	N/A	N/A	ug/L	34	0.0170	10.0	0.190	10.0	33	1	-	0.0180	0.0180	1	3%	No	No
Groundwater	SVOCs	Total	Benzo(g,h,i)perylene	N/A	N/A	ug/L	23	0.00340	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Benzo(k)fluoranthene	N/A	N/A	ug/L	34	0.0240	10.0	0.190	10.0	34	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Benzofluoranthenes, Total	N/A	N/A	ug/L	9	0.00380	0.0540	0.0200	0.284	9	-	-	-	-	0	0%	No	--
Groundwater	SVOCs	Total	Benzoic Acid	N/A	N/A	ug/L	23	0.0200	48.0	0.500	48.0	22	-	1	11.0	11.0	1	4%	No	No
Groundwater	SVOCs	Total	Benzyl Alcohol	N/A	N/A	ug/L	23	0.0320	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Bis(2-chloroethoxy)methane	N/A	N/A	ug/L	23	0.0180	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Bis(2-chloroethyl) Ether	N/A	N/A	ug/L	23	0.0190	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Bis(2-chloroisopropyl) Ether	N/A	N/A	ug/L	23	0.0210	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	N/A	ug/L	23	0.0649	48.0	0.0999	48.0	19	-	4	1.79	19.0	4	17%	No	Yes
Groundwater	SVOCs	Total	Butyl Benzyl Phthalate	N/A	N/A	ug/L	23	0.187	10.0	0.500	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Carbazole	N/A	N/A	ug/L	23	0.00280	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Chrysene	N/A	N/A	ug/L	23	0.00250	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Dibenz(a,h)anthracene	N/A	N/A	ug/L	23	0.00270	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Dibenzofuran	N/A	N/A	ug/L	23	0.0140	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Diethyl Phthalate	N/A	N/A	ug/L	23	0.0579	10.0	0.0999	10.0	20	1	2	0.192	1.90	3	13%	No	Yes
Groundwater	SVOCs	Total	Dimethyl Phthalate	N/A	N/A	ug/L	23	0.0160	10.0	0.100	10.0	22	-	1	0.235	0.235	1	4%	No	No
Groundwater	SVOCs	Total	Di-n-butyl Phthalate	N/A	N/A	ug/L	23	0.231	10.0	0.500	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Di-n-octyl Phthalate	N/A	N/A	ug/L	23	0.0340	10.0	0.0999	10.0	20	-	3	2.85	7.08	3	13%	No	Yes
Groundwater	SVOCs	Total	Fluoranthene	N/A	N/A	ug/L	23	0.00190	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Fluorene	N/A	N/A	ug/L	23	0.00140	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(13 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Groundwater	SVOCs	Total	Hexachlorobenzene	N/A	N/A	ug/L	23	0.0200	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	23	0.0290	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Hexachlorocyclopentadiene	N/A	N/A	ug/L	23	0.0260	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Hexachloroethane	N/A	N/A	ug/L	23	0.0400	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Indeno(1,2,3-cd)pyrene	N/A	N/A	ug/L	23	0.00300	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Isophorone	N/A	N/A	ug/L	23	0.0180	10.0	0.0999	10.0	21	1	1	0.116	0.282	2	9%	No	Yes
Groundwater	SVOCs	Total	Naphthalene	N/A	N/A	ug/L	23	0.00220	10.0	0.00999	10.0	20	-	3	0.0400	0.157	3	13%	No	Yes
Groundwater	SVOCs	Total	Nitrobenzene	N/A	N/A	ug/L	23	0.0450	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	N-Nitrosodimethylamine	N/A	N/A	ug/L	23	0.00330	10.0	0.500	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	N-Nitrosodi-n-propylamine	N/A	N/A	ug/L	23	0.0210	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	N-Nitrosodiphenylamine	N/A	N/A	ug/L	23	0.00999	10.0	0.0999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	N/A	ug/L	23	0.0230	10.0	0.0999	10.0	22	-	1	29.0	29.0	1	4%	No	No
Groundwater	SVOCs	Total	Pentachlorophenol	N/A	N/A	ug/L	23	0.0170	25.0	0.0999	25.0	23	-	-	-	-	0	0%	No	No
Groundwater	SVOCs	Total	Phenanthrene	N/A	N/A	ug/L	74	0.00220	10.0	0.00999	10.0	68	1	5	0.0800	3.90	6	8%	No	Yes
Groundwater	SVOCs	Total	Phenol	N/A	N/A	ug/L	54	0.0320	10.0	0.0999	10.0	53	1	-	0.382	0.382	1	2%	No	No
Groundwater	SVOCs	Total	Pyrene	N/A	N/A	ug/L	23	0.00140	10.0	0.00999	10.0	23	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	N/A	ug/L	27	0.0450	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/L	27	0.0620	1.00	0.500	1.00	25	1	1	0.220	1.90	2	7%	No	Yes
Groundwater	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	N/A	ug/L	27	0.0880	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,1,2-Trichloroethane	N/A	N/A	ug/L	27	0.0940	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	N/A	ug/L	27	0.0590	1.00	0.500	1.00	25	1	1	0.320	5.00	2	7%	No	Yes
Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	N/A	ug/L	27	0.100	1.00	0.500	1.00	26	-	1	2.10	2.10	1	4%	No	No
Groundwater	VOCs	Total	1,1-Dichloropropene	N/A	N/A	ug/L	27	0.0620	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2,3-Trichlorobenzene	N/A	N/A	ug/L	27	0.0840	5.00	1.00	5.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2,3-Trichloropropane	N/A	N/A	ug/L	27	0.240	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	27	0.180	5.00	1.00	5.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	N/A	ug/L	27	0.0620	1.00	1.00	2.00	25	-	2	1.00	5.20	2	7%	No	Yes
Groundwater	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	N/A	ug/L	27	0.500	3.00	1.00	3.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	N/A	ug/L	27	0.0720	1.00	1.00	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	27	0.0690	2.00	0.500	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	N/A	ug/L	27	0.0660	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,2-Dichloropropane	N/A	N/A	ug/L	27	0.0620	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,3,5-Trimethylbenzene	N/A	N/A	ug/L	27	0.0660	1.00	1.00	5.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	27	0.0820	2.00	0.500	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,3-Dichloropropane	N/A	N/A	ug/L	27	0.0570	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	27	0.0840	2.00	0.500	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	N/A	ug/L	42	0.0830	1.00	0.500	2.50	42	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	2-Butanone (MEK)	N/A	N/A	ug/L	19	2.30	10.0	5.00	20.0	19	-	-	-	-	0	0%	No	--
Groundwater	VOCs	Total	2-Chloroethylvinylether	N/A	N/A	ug/L	13	10.0	10.0	10.0	10.0	13	-	-	-	-	0	0%	No	--
Groundwater	VOCs	Total	2-Chlorotoluene	N/A	N/A	ug/L	27	0.0790	1.00	1.00	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	2-Hexanone	N/A	N/A	ug/L	27	2.40	10.0	5.00	20.0	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	4-Chlorotoluene	N/A	N/A	ug/L	27	0.0570	1.00	1.00	4.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	4-Isopropyltoluene	N/A	N/A	ug/L	27	0.0700	2.00	1.00	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	N/A	ug/L	27	1.40	10.0	5.00	20.0	26	1	-	3.04	3.04	1	4%	No	No
Groundwater	VOCs	Total	Acetone	N/A	N/A	ug/L	27	2.50	10.0	5.00	20.0	23	-	4	8.39	15.4	4	15%	No	Yes
Groundwater	VOCs	Total	Benzene	N/A	N/A	ug/L	27	0.0620	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Bromobenzene	N/A	N/A	ug/L	27	0.0660	1.00	1.00	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Bromochloromethane	N/A	N/A	ug/L	27	0.0990	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Bromodichloromethane	N/A	N/A	ug/L	27	0.0550	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Bromoform	N/A	N/A	ug/L	27	0.0990	3.00	0.500	3.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Bromomethane	N/A	N/A	ug/L	27	0.120	1.00	0.500	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Carbon Disulfide	N/A	N/A	ug/L	27	0.500	10.0	0.500	10.0	21	5	1	0.120	3.95	6	22%	No	Yes
Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	N/A	ug/L	27	0.0480	1.00	0.500	1.00	26	-	1	1.40	1.40	1	4%	No	No
Groundwater	VOCs	Total	Chlorobenzene	N/A	N/A	ug/L	27	0.0640	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Chloroethane	N/A	N/A	ug/L	27	0.130	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Chloroform	N/A	N/A	ug/L	76	0.0820	1.00	0.500	2.50	67	5	4	0.100	3.70	9	12%	No	Yes
Groundwater	VOCs	Total	Chloromethane	N/A	N/A	ug/L	27	0.110	5.00	0.500	5.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/L	42	0.0660	1.00	0.500	1.00	26	4	12	0.0800	660	16	38%	No	Yes
Groundwater	VOCs	Total	cis-1,3-Dichloropropene	N/A	N/A	ug/L	27	0.0550	3.00	0.500	3.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Dibromochloromethane	N/A	N/A	ug/L	27	0.0720	2.00	0.500	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Dibromomethane	N/A	N/A	ug/L	27	0.120	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Dichlorodifluoromethane	N/A	N/A	ug/L	27	0.0750	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	N/A	ug/L	27	0.0840	5.00	1.00	5.00	26	1	-	0.175	0.175	1	4%	No	No

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(14 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
Groundwater	VOCs	Total	Ethylbenzene	N/A	N/A	ug/L	27	0.0680	1.00	0.500	1.00	26	-	1	1.00	1.00	1	4%	No	No
Groundwater	VOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	27	0.150	3.00	1.00	3.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Isopropylbenzene	N/A	N/A	ug/L	27	0.0760	1.00	0.500	1.00	25	-	2	3.20	4.60	2	7%	No	Yes
Groundwater	VOCs	Total	m,p-Xylenes	N/A	N/A	ug/L	27	0.110	1.00	0.500	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Naphthalene	N/A	N/A	ug/L	27	0.0960	5.00	1.00	5.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	n-Butylbenzene	N/A	N/A	ug/L	27	0.0850	1.00	1.00	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	n-Propylbenzene	N/A	N/A	ug/L	27	0.00590	1.00	1.00	2.00	25	-	2	1.20	2.00	2	7%	No	Yes
Groundwater	VOCs	Total	o-Xylene	N/A	N/A	ug/L	27	0.0680	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	sec-Butylbenzene	N/A	N/A	ug/L	27	0.0710	1.00	1.00	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Styrene	N/A	N/A	ug/L	27	0.0770	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	tert-Butylbenzene	N/A	N/A	ug/L	27	0.0590	1.00	1.00	2.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	N/A	ug/L	76	0.0970	1.00	0.500	1.00	47	5	24	0.230	8.78	29	38%	No	Yes
Groundwater	VOCs	Total	Toluene	N/A	N/A	ug/L	27	0.500	1.00	0.500	1.00	22	2	3	0.230	0.640	5	19%	No	Yes
Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	N/A	ug/L	27	0.0690	1.00	0.500	1.00	25	1	1	0.110	1.70	2	7%	No	Yes
Groundwater	VOCs	Total	trans-1,3-Dichloropropene	N/A	N/A	ug/L	27	0.0750	3.00	0.500	3.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/L	42	0.0730	1.00	0.500	1.00	27	4	11	0.140	3.40	15	36%	No	Yes
Groundwater	VOCs	Total	Trichlorofluoromethane	N/A	N/A	ug/L	27	0.0990	1.00	0.500	1.00	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Vinyl Acetate	N/A	N/A	ug/L	27	0.910	10.0	5.00	10.0	27	-	-	-	-	0	0%	No	No
Groundwater	VOCs	Total	Vinyl Chloride	N/A	N/A	ug/L	76	0.0440	1.00	0.500	2.50	56	15	5	0.160	4.10	20	26%	No	Yes
DP Groundwater	Metals	Total	Aluminum	N/A	N/A	ug/L	10	-	-	100	100	0	2	8	74.2	17,900	10	100%	No	--
DP Groundwater	Metals	Total	Antimony	N/A	N/A	ug/L	10	0.500	0.500	0.500	0.500	1	5	4	0.233	1.57	9	90%	No	--
DP Groundwater	Metals	Total	Arsenic	N/A	N/A	ug/L	10	0.102	0.102	0.500	0.500	2	2	6	0.114	7.70	8	80%	No	--
DP Groundwater	Metals	Total	Barium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	3.76	97.8	10	100%	No	--
DP Groundwater	Metals	Total	Beryllium	N/A	N/A	ug/L	10	0.0782	0.0782	0.500	0.500	6	3	1	0.157	0.785	4	40%	No	--
DP Groundwater	Metals	Total	Cadmium	N/A	N/A	ug/L	10	0.0247	0.0247	0.500	0.500	10	-	-	-	-	0	0%	No	--
DP Groundwater	Metals	Total	Calcium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	18,300	33,700	10	100%	No	--
DP Groundwater	Metals	Total	Chromium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	2.61	31.8	10	100%	No	--
DP Groundwater	Metals	Total	Cobalt	N/A	N/A	ug/L	10	0.770	0.770	5.00	5.00	4	3	3	1.68	13.1	6	60%	No	--
DP Groundwater	Metals	Total	Copper	N/A	N/A	ug/L	12	-	-	-	-	0	-	12	1.38	204	12	100%	No	--
DP Groundwater	Metals	Total	Iron	N/A	N/A	ug/L	10	14.0	14.0	100	100	1	1	8	84.4	25,900	9	90%	No	--
DP Groundwater	Metals	Total	Lead	N/A	N/A	ug/L	12	0.500	0.500	0.500	0.500	3	1	8	0.0580	13.7	9	75%	No	--
DP Groundwater	Metals	Total	Magnesium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	5,130	15,400	10	100%	No	--
DP Groundwater	Metals	Total	Manganese	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	2.10	708	10	100%	No	--
DP Groundwater	Metals	Total	Mercury	N/A	N/A	ug/L	10	0.0530	0.0530	0.200	0.200	8	2	-	0.0760	0.100	2	20%	No	--
DP Groundwater	Metals	Total	Nickel	N/A	N/A	ug/L	12	0.370	0.370	10.0	40.0	1	8	3	1.02	50.1	11	92%	No	--
DP Groundwater	Metals	Total	Potassium	N/A	N/A	ug/L	10	-	-	1,000	1,000	0	2	8	898	3,210	10	100%	No	--
DP Groundwater	Metals	Total	Selenium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	0.815	2.06	10	100%	No	--
DP Groundwater	Metals	Total	Silver	N/A	N/A	ug/L	10	0.0188	0.0188	0.100	0.100	1	6	3	0.0195	0.376	9	90%	No	--
DP Groundwater	Metals	Total	Sodium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	6,350	42,900	10	100%	No	--
DP Groundwater	Metals	Total	Thallium	N/A	N/A	ug/L	10	0.0292	0.0292	0.500	0.500	3	7	-	0.0430	0.146	7	70%	No	--
DP Groundwater	Metals	Total	Vanadium	N/A	N/A	ug/L	10	-	-	10.0	10.0	0	6	4	1.82	77.6	10	100%	No	--
DP Groundwater	Metals	Total	Zinc	N/A	N/A	ug/L	12	-	-	-	-	0	-	12	2.88	149	12	100%	No	--
DP Groundwater	Metals	Dissolved	Aluminum	N/A	N/A	ug/L	10	5.88	5.88	100	100	3	5	2	5.88	1,370	7	70%	No	--
DP Groundwater	Metals	Dissolved	Antimony	N/A	N/A	ug/L	10	-	-	0.500	0.500	0	9	1	0.149	1.67	10	100%	No	--
DP Groundwater	Metals	Dissolved	Arsenic	N/A	N/A	ug/L	10	-	-	0.500	0.500	0	1	9	0.262	1.36	10	100%	No	--
DP Groundwater	Metals	Dissolved	Barium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	3.39	20.6	10	100%	No	--
DP Groundwater	Metals	Dissolved	Beryllium	N/A	N/A	ug/L	10	0.0782	0.0782	0.500	0.500	10	-	-	-	-	0	0%	No	--
DP Groundwater	Metals	Dissolved	Cadmium	N/A	N/A	ug/L	10	0.0247	0.0247	0.500	0.500	9	1	-	0.0300	0.0300	1	10%	No	--
DP Groundwater	Metals	Dissolved	Calcium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	10,800	34,100	10	100%	No	--
DP Groundwater	Metals	Dissolved	Chromium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	0.838	4.29	10	100%	No	--
DP Groundwater	Metals	Dissolved	Cobalt	N/A	N/A	ug/L	10	0.770	0.770	5.00	5.00	2	7	1	1.21	5.08	8	80%	No	--
DP Groundwater	Metals	Dissolved	Copper	N/A	N/A	ug/L	12	0.500	1.23	0.500	1.23	3	-	9	0.665	4.38	9	75%	No	--
DP Groundwater	Metals	Dissolved	Iron	N/A	N/A	ug/L	10	14.0	14.0	100	100	6	1	3	37.3	476	4	40%	No	--
DP Groundwater	Metals	Dissolved	Lead	N/A	N/A	ug/L	12	0.0200	0.500	0.0200	0.500	6	6	-	0.0260	0.378	6	50%	No	--
DP Groundwater	Metals	Dissolved	Magnesium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	3,310	12,000	10	100%	No	--
DP Groundwater	Metals	Dissolved	Manganese	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	1.71	587	10	100%	No	--
DP Groundwater	Metals	Dissolved	Mercury	N/A	N/A	ug/L	10	0.0530	0.0530	0.200	0.200	8	2	-	0.0550	0.0600	2	20%	No	--
DP Groundwater	Metals	Dissolved	Nickel	N/A	N/A	ug/L	12	0.370	10.0	10.0	20.0	8	4	-	0.403	3.90	4	33%	No	--
DP Groundwater	Metals	Dissolved	Potassium	N/A	N/A	ug/L	10	-	-	1,000	1,000	0	3	7	527	2,210	10	100%	No	--
DP Groundwater	Metals	Dissolved	Selenium	N/A	N/A	ug/L	10	-	-	0.500	0.500	0	3	7	0.235	1.30	10	100%	No	--
DP Groundwater	Metals	Dissolved	Silver	N/A	N/A	ug/L	10	0.0188	0.0188	0.100	0.100	2	8	-	0.0240	0.0790	8	80%	No	--
DP Groundwater	Metals	Dissolved	Sodium	N/A	N/A	ug/L	10	-	-	-	-	0	-	10	6,560	47,700	10	100%	No	--
DP Groundwater	Metals	Dissolved	Thallium	N/A	N/A	ug/L	10	0.0292	0.0292	0.500	0.500	7	3	-	0.0310	0.0855	3	30%	No	--

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(15 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
DP Groundwater	Metals	Dissolved	Vanadium	N/A	N/A	ug/L	10	0.488	10.0	10.0	10.0	4	6	-	0.582	2.61	6	60%	No	--
DP Groundwater	Metals	Dissolved	Zinc	N/A	N/A	ug/L	12	2.00	2.00	2.00	10.0	6	2	4	2.00	4.10	6	50%	No	--
DP Groundwater	Butyltins	Total	Dibutyltin	N/A	N/A	ug/L	4	0.000231	0.000287	0.000793	0.000988	4	-	-	-	-	0	0%	Yes	--
DP Groundwater	Butyltins	Total	Monobutyltin	N/A	N/A	ug/L	4	0.000114	0.000142	0.000396	0.000494	2	-	2	0.00520	0.00671	2	50%	Yes	--
DP Groundwater	Butyltins	Total	Tetrabutyltin	N/A	N/A	ug/L	4	0.000600	0.000748	0.00198	0.00247	4	-	-	-	-	0	0%	Yes	--
DP Groundwater	Butyltins	Total	Tributyltin	N/A	N/A	ug/L	4	0.000454	0.000552	0.00142	0.00173	2	-	2	0.00285	0.00435	2	50%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1016	N/A	N/A	ug/L	7	0.00206	0.00244	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1221	N/A	N/A	ug/L	7	0.00206	0.00244	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1232	N/A	N/A	ug/L	7	0.00206	0.00244	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1242	N/A	N/A	ug/L	7	0.00206	0.00244	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1248	N/A	N/A	ug/L	7	0.00206	0.00244	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1254	N/A	N/A	ug/L	7	0.00227	0.00269	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	PCB Aroclors	Total	Aroclor 1260	N/A	N/A	ug/L	7	0.00227	0.00269	0.00941	0.0112	7	-	-	-	-	0	0%	Yes	--
DP Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	N/A	ug/L	4	74.7	89.7	244	293	4	-	-	-	-	0	0%	Yes	--
DP Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	N/A	ug/L	4	92.5	111	487	585	3	1	-	113	113	1	25%	Yes	--
DP Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	N/A	ug/L	6	13.0	13.0	100	100	4	2	-	14.7	20.9	2	33%	Yes	--
DP Groundwater	Pesticides	Total	4,4'-DDD	N/A	N/A	ug/L	3	0.000453	0.000575	0.00385	0.00488	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	4,4'-DDE	N/A	N/A	ug/L	3	0.000375	0.000476	0.00385	0.00488	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	4,4'-DDT	N/A	N/A	ug/L	3	0.000480	0.000609	0.00385	0.00488	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Aldrin	N/A	N/A	ug/L	3	0.000110	0.000140	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	BHC (alpha)	N/A	N/A	ug/L	3	0.000354	0.000449	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	BHC (beta)	N/A	N/A	ug/L	3	0.000411	0.000521	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	BHC (delta)	N/A	N/A	ug/L	3	0.000226	0.000286	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	BHC (gamma) Lindane	N/A	N/A	ug/L	3	-	-	0.00111	0.00111	0	1	2	0.000930	0.00249	3	100%	Yes	--
DP Groundwater	Pesticides	Total	Chlordane (alpha)	N/A	N/A	ug/L	3	0.000339	0.000429	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Chlordane (gamma)	N/A	N/A	ug/L	3	0.000461	0.000584	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Dieldrin	N/A	N/A	ug/L	3	0.000290	0.000368	0.00192	0.00244	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Endosulfan I	N/A	N/A	ug/L	3	0.000480	0.000608	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Endosulfan II	N/A	N/A	ug/L	3	0.000411	0.00192	0.00192	0.00244	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Endosulfan Sulfate	N/A	N/A	ug/L	3	0.000517	0.000655	0.00192	0.00244	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Endrin Aldehyde	N/A	N/A	ug/L	3	0.000936	0.00119	0.00192	0.00244	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Endrin Ketone	N/A	N/A	ug/L	3	0.000332	0.000421	0.00192	0.00244	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Endrin	N/A	N/A	ug/L	3	0.000298	0.000378	0.00192	0.00244	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Heptachlor Epoxide	N/A	N/A	ug/L	3	0.000360	0.000456	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Heptachlor	N/A	N/A	ug/L	3	0.000724	0.000919	0.000962	0.00122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	Pesticides	Total	Methoxychlor	N/A	N/A	ug/L	3	0.000584	0.000584	0.0109	0.0122	1	2	-	0.000983	0.00521	2	67%	Yes	--
DP Groundwater	Pesticides	Total	Toxaphene	N/A	N/A	ug/L	3	0.0112	0.0142	0.0962	0.122	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	9	0.0117	0.0151	0.190	1.00	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	9	0.0264	0.0340	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	9	0.0349	0.0449	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	9	0.0300	0.0387	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	2,4,5-Trichlorophenol	N/A	N/A	ug/L	6	0.0421	0.0542	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2,4,6-Trichlorophenol	N/A	N/A	ug/L	6	0.0305	0.0393	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2,4-Dichlorophenol	N/A	N/A	ug/L	6	0.0177	0.0228	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2,4-Dimethylphenol	N/A	N/A	ug/L	6	0.174	0.224	0.950	1.22	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2,4-Dinitrophenol	N/A	N/A	ug/L	6	0.197	0.253	0.950	1.22	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2,4-Dinitrotoluene	N/A	N/A	ug/L	9	0.0545	0.0703	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	2,6-Dinitrotoluene	N/A	N/A	ug/L	9	0.0361	0.0465	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	2-Chloronaphthalene	N/A	N/A	ug/L	9	0.00456	0.00588	0.0190	0.0245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	2-Chlorophenol	N/A	N/A	ug/L	6	0.0400	0.0515	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2-Methylnaphthalene	N/A	N/A	ug/L	9	0.0142	0.0149	0.0475	0.0553	3	3	3	0.0195	0.153	6	67%	No	--
DP Groundwater	SVOCs	Total	2-Methylphenol	N/A	N/A	ug/L	6	0.0371	0.0479	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	2-Nitroaniline	N/A	N/A	ug/L	9	0.0284	0.0366	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	2-Nitrophenol	N/A	N/A	ug/L	6	0.0406	0.0524	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	3,3'-Dichlorobenzidine	N/A	N/A	ug/L	9	0.178	0.229	0.950	1.22	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	3-Nitroaniline	N/A	N/A	ug/L	9	0.0537	0.0692	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	4,6-Dinitro-2-methylphenol	N/A	N/A	ug/L	6	0.294	0.379	0.950	1.22	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	4-Bromophenyl Phenyl Ether	N/A	N/A	ug/L	9	0.0208	0.0268	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	4-Chloro-3-methylphenol	N/A	N/A	ug/L	6	0.0232	0.0299	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	4-Chloroaniline	N/A	N/A	ug/L	9	0.0687	0.0885	0.285	0.367	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	4-Chlorophenyl Phenyl Ether	N/A	N/A	ug/L	9	0.0306	0.0394	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	4-Nitroaniline	N/A	N/A	ug/L	9	0.0368	0.0475	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	4-Nitrophenol	N/A	N/A	ug/L	6	0.112	0.144	0.950	1.22	6	-	-	-	-	0	0%	Yes	--

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(16 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
DP Groundwater	SVOCs	Total	Acenaphthene	N/A	N/A	ug/L	9	0.00323	0.00356	0.0190	0.0245	4	5	-	0.00547	0.0230	5	56%	No	--
DP Groundwater	SVOCs	Total	Acenaphthylene	N/A	N/A	ug/L	9	0.00228	0.00294	0.0190	0.0245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Aniline	N/A	N/A	ug/L	9	0.0310	0.367	0.285	0.367	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Anthracene	N/A	N/A	ug/L	9	0.00180	0.00209	0.0190	0.0245	8	1	-	0.0126	0.0126	1	11%	No	--
DP Groundwater	SVOCs	Total	Benzidine	N/A	N/A	ug/L	9	0.950	1.22	0.950	1.22	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Benzo(a)anthracene	N/A	N/A	ug/L	9	0.00494	0.00636	0.0190	0.0245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Benzo(a)pyrene	N/A	N/A	ug/L	9	0.00313	0.00363	0.0190	0.0245	8	1	-	0.00895	0.00895	1	11%	No	--
DP Groundwater	SVOCs	Total	Benzo(g,h,i)perylene	N/A	N/A	ug/L	9	0.00484	0.00624	0.0190	0.0245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Benzofluoranthenes, Total	N/A	N/A	ug/L	9	0.0113	0.0131	0.0950	0.122	8	1	-	0.0173	0.0173	1	11%	No	--
DP Groundwater	SVOCs	Total	Benzoic Acid	N/A	N/A	ug/L	6	0.127	0.164	0.950	1.22	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	Benzyl Alcohol	N/A	N/A	ug/L	7	0.0404	0.0520	0.190	0.245	5	2	-	0.0500	0.0523	2	29%	Yes	--
DP Groundwater	SVOCs	Total	Bis(2-chloroethoxy)methane	N/A	N/A	ug/L	9	0.0172	0.0222	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Bis(2-chloroethyl) Ether	N/A	N/A	ug/L	9	0.0308	0.0397	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Bis(2-chloroisopropyl) Ether	N/A	N/A	ug/L	9	0.0407	0.0525	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	N/A	ug/L	9	0.362	0.466	1.42	1.84	8	1	-	0.408	0.408	1	11%	No	--
DP Groundwater	SVOCs	Total	Butyl Benzyl Phthalate	N/A	N/A	ug/L	9	0.102	0.285	0.285	0.367	3	6	-	0.120	0.228	6	67%	No	--
DP Groundwater	SVOCs	Total	Carbazole	N/A	N/A	ug/L	9	0.0206	0.0266	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Chrysene	N/A	N/A	ug/L	9	0.00798	0.0103	0.0190	0.0245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Dibenz(a,h)anthracene	N/A	N/A	ug/L	9	0.00294	0.00341	0.0190	0.0245	8	1	-	0.00671	0.00671	1	11%	No	--
DP Groundwater	SVOCs	Total	Dibenzofuran	N/A	N/A	ug/L	9	0.0195	0.0215	0.190	0.245	7	2	-	0.0237	0.0421	2	22%	No	--
DP Groundwater	SVOCs	Total	Diethyl Phthalate	N/A	N/A	ug/L	9	0.0529	0.0682	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Dimethyl Phthalate	N/A	N/A	ug/L	9	0.0370	0.0477	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Di-n-butyl Phthalate	N/A	N/A	ug/L	9	0.190	0.608	0.190	0.608	3	5	1	0.100	0.239	6	67%	No	--
DP Groundwater	SVOCs	Total	Di-n-octyl Phthalate	N/A	N/A	ug/L	9	0.0259	0.0334	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Fluoranthene	N/A	N/A	ug/L	9	0.00541	0.00626	0.0190	0.0220	8	-	1	0.0311	0.0311	1	11%	No	--
DP Groundwater	SVOCs	Total	Fluorene	N/A	N/A	ug/L	9	0.00161	0.00178	0.0190	0.0221	3	5	1	0.00584	0.0351	6	67%	No	--
DP Groundwater	SVOCs	Total	Hexachlorobenzene	N/A	N/A	ug/L	9	0.0237	0.0306	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	9	0.0140	0.0180	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Hexachlorocyclopentadiene	N/A	N/A	ug/L	9	0.294	0.379	0.950	1.22	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Hexachloroethane	N/A	N/A	ug/L	9	0.0362	0.0466	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	Indeno(1,2,3-cd)pyrene	N/A	N/A	ug/L	9	0.00266	0.00308	0.0190	0.0245	8	1	-	0.00797	0.00797	1	11%	No	--
DP Groundwater	SVOCs	Total	Isophorone	N/A	N/A	ug/L	9	0.0278	0.0311	0.190	0.245	7	2	-	0.0486	0.0842	2	22%	No	--
DP Groundwater	SVOCs	Total	Naphthalene	N/A	N/A	ug/L	9	0.0165	0.0191	0.0475	1.00	5	4	-	0.0222	0.0452	4	44%	No	--
DP Groundwater	SVOCs	Total	Nitrobenzene	N/A	N/A	ug/L	9	0.0494	0.0636	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	N-Nitrosodimethylamine	N/A	N/A	ug/L	9	0.950	1.22	0.950	1.22	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	N-Nitrosodi-n-propylamine	N/A	N/A	ug/L	9	0.0350	0.0452	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	N-Nitrosodiphenylamine	N/A	N/A	ug/L	9	0.00807	0.0104	0.190	0.245	9	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	N/A	ug/L	6	0.0419	0.0540	0.380	0.490	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	Pentachlorophenol	N/A	N/A	ug/L	6	0.190	0.245	0.190	0.245	6	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Total	Phenanthrene	N/A	N/A	ug/L	9	0.00351	0.00351	0.0190	0.0221	1	7	1	0.00759	0.144	8	89%	No	--
DP Groundwater	SVOCs	Total	Phenol	N/A	N/A	ug/L	8	0.00437	0.00563	0.190	0.245	3	5	-	0.0111	0.0291	5	63%	No	--
DP Groundwater	SVOCs	Total	Pyrene	N/A	N/A	ug/L	9	0.00275	0.00319	0.0190	0.0220	6	2	1	0.00317	0.0261	3	33%	No	--
DP Groundwater	SVOCs	Dissolved	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	8	0.0120	0.0139	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	1,2-Dichlorobenzene	N/A	N/A	ug/L	8	0.0272	0.0313	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	1,3-Dichlorobenzene	N/A	N/A	ug/L	8	0.0359	0.0413	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	1,4-Dichlorobenzene	N/A	N/A	ug/L	8	0.0310	0.0356	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	2,4,5-Trichlorophenol	N/A	N/A	ug/L	3	0.0457	0.0499	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2,4,6-Trichlorophenol	N/A	N/A	ug/L	3	0.0331	0.0361	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2,4-Dichlorophenol	N/A	N/A	ug/L	3	0.0192	0.0209	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2,4-Dimethylphenol	N/A	N/A	ug/L	3	0.189	0.206	1.03	1.13	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2,4-Dinitrophenol	N/A	N/A	ug/L	3	0.214	0.233	1.03	1.13	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2,4-Dinitrotoluene	N/A	N/A	ug/L	8	0.0562	0.0646	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	2,6-Dinitrotoluene	N/A	N/A	ug/L	8	0.0372	0.0428	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	2-Chloronaphthalene	N/A	N/A	ug/L	8	0.00470	0.00541	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	2-Chlorophenol	N/A	N/A	ug/L	3	0.0434	0.0474	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2-Methylnaphthalene	N/A	N/A	ug/L	8	0.0147	0.0168	0.0490	0.0563	2	4	2	0.0158	0.280	6	75%	No	--
DP Groundwater	SVOCs	Dissolved	2-Methylphenol	N/A	N/A	ug/L	3	0.0404	0.0440	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	2-Nitroaniline	N/A	N/A	ug/L	8	0.0293	0.0337	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	2-Nitrophenol	N/A	N/A	ug/L	3	0.0442	0.0482	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	3,3'-Dichlorobenzidine	N/A	N/A	ug/L	8	0.183	0.211	0.979	1.13	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	3-Nitroaniline	N/A	N/A	ug/L	8	0.0553	0.0636	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	4,6-Dinitro-2-methylphenol	N/A	N/A	ug/L	3	0.320	0.349	1.03	1.13	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	4-Bromophenyl Phenyl Ether	N/A	N/A	ug/L	8	0.0214	0.0247	0.196	0.225	8	-	-	-	-	0	0%	No	--

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(17 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
DP Groundwater	SVOCs	Dissolved	4-Chloro-3-methylphenol	N/A	N/A	ug/L	3	0.0252	0.0275	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	4-Chloroaniline	N/A	N/A	ug/L	8	0.0708	0.0814	0.294	0.338	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	4-Chlorophenyl Phenyl Ether	N/A	N/A	ug/L	8	0.0315	0.0363	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	4-Nitroaniline	N/A	N/A	ug/L	8	0.0380	0.0437	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	4-Nitrophenol	N/A	N/A	ug/L	3	0.122	0.133	1.03	1.13	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	Acenaphthene	N/A	N/A	ug/L	8	0.00333	0.00345	0.0196	0.0225	3	4	1	0.00491	0.0348	5	63%	No	--
DP Groundwater	SVOCs	Dissolved	Acenaphthylene	N/A	N/A	ug/L	8	0.00235	0.00270	0.0196	0.0225	7	1	-	0.00361	0.00361	1	13%	No	--
DP Groundwater	SVOCs	Dissolved	Anthracene	N/A	N/A	ug/L	8	0.00186	0.00214	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Benzidine	N/A	N/A	ug/L	8	0.979	1.13	0.979	1.13	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Benzo(a)anthracene	N/A	N/A	ug/L	8	0.00509	0.00586	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Benzo(a)pyrene	N/A	N/A	ug/L	8	0.00323	0.00372	0.0196	0.0225	7	1	-	0.00714	0.00714	1	13%	No	--
DP Groundwater	SVOCs	Dissolved	Benzo(g,h,i)perylene	N/A	N/A	ug/L	8	0.00500	0.00574	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Benzofluoranthenes, Total	N/A	N/A	ug/L	8	0.0117	0.0134	0.0979	0.113	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Benzoic Acid	N/A	N/A	ug/L	4	0.138	0.151	1.03	1.21	3	1	-	0.317	0.317	1	25%	Yes	--
DP Groundwater	SVOCs	Dissolved	Benzyl Alcohol	N/A	N/A	ug/L	3	0.0439	0.0479	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	Bis(2-chloroethoxy)methane	N/A	N/A	ug/L	8	0.0177	0.0204	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Bis(2-chloroethyl) Ether	N/A	N/A	ug/L	8	0.0317	0.0365	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Bis(2-chloroisopropyl) Ether	N/A	N/A	ug/L	8	0.0420	0.0483	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Bis(2-ethylhexyl) Phthalate	N/A	N/A	ug/L	8	0.373	0.429	1.47	1.69	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Butyl Benzyl Phthalate	N/A	N/A	ug/L	8	0.327	0.338	0.294	0.363	2	6	-	0.108	0.155	6	75%	No	--
DP Groundwater	SVOCs	Dissolved	Carbazole	N/A	N/A	ug/L	8	0.0213	0.0244	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Chrysene	N/A	N/A	ug/L	8	0.00823	0.00946	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Dibenz(a,h)anthracene	N/A	N/A	ug/L	8	0.00304	0.00349	0.0196	0.0225	7	1	-	0.00381	0.00381	1	13%	No	--
DP Groundwater	SVOCs	Dissolved	Dibenzofuran	N/A	N/A	ug/L	8	0.0201	0.0231	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Diethyl Phthalate	N/A	N/A	ug/L	8	0.0546	0.0584	0.196	0.225	5	3	-	0.0585	0.101	3	38%	No	--
DP Groundwater	SVOCs	Dissolved	Dimethyl Phthalate	N/A	N/A	ug/L	8	0.0382	0.0439	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Di-n-butyl Phthalate	N/A	N/A	ug/L	8	0.218	0.275	0.196	0.275	2	6	-	0.124	0.207	6	75%	No	--
DP Groundwater	SVOCs	Dissolved	Di-n-octyl Phthalate	N/A	N/A	ug/L	8	0.0267	0.0307	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Fluoranthene	N/A	N/A	ug/L	8	0.00558	0.00642	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Fluorene	N/A	N/A	ug/L	8	0.00167	0.00191	0.0196	0.0225	3	5	-	0.00654	0.0116	5	63%	No	--
DP Groundwater	SVOCs	Dissolved	Hexachlorobenzene	N/A	N/A	ug/L	8	0.0245	0.0282	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Hexachlorobutadiene	N/A	N/A	ug/L	8	0.0144	0.0166	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Hexachlorocyclopentadiene	N/A	N/A	ug/L	8	0.304	0.349	0.979	1.13	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Hexachloroethane	N/A	N/A	ug/L	8	0.0373	0.0429	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	Indeno(1,2,3-cd)pyrene	N/A	N/A	ug/L	8	0.00274	0.00315	0.0196	0.0225	7	1	-	0.00630	0.00630	1	13%	No	--
DP Groundwater	SVOCs	Dissolved	Isophorone	N/A	N/A	ug/L	8	0.0277	0.0297	0.196	0.225	6	2	-	0.0483	0.0782	2	25%	No	--
DP Groundwater	SVOCs	Dissolved	Naphthalene	N/A	N/A	ug/L	8	0.0190	0.0196	0.0502	0.0605	2	3	3	0.0289	0.200	6	75%	No	--
DP Groundwater	SVOCs	Dissolved	Nitrobenzene	N/A	N/A	ug/L	8	0.0509	0.0586	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	N-Nitrosodimethylamine	N/A	N/A	ug/L	8	0.979	1.13	0.979	1.13	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	N-Nitrosodi-n-propylamine	N/A	N/A	ug/L	8	0.0361	0.0416	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	N-Nitrosodiphenylamine	N/A	N/A	ug/L	8	0.00833	0.00957	0.196	0.225	8	-	-	-	-	0	0%	No	--
DP Groundwater	SVOCs	Dissolved	p-cresol (4-Methylphenol)	N/A	N/A	ug/L	3	0.0455	0.0497	0.413	0.450	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	Pentachlorophenol	N/A	N/A	ug/L	3	0.206	0.225	0.206	0.225	3	-	-	-	-	0	0%	Yes	--
DP Groundwater	SVOCs	Dissolved	Phenanthrene	N/A	N/A	ug/L	8	0.00403	0.00417	0.0196	0.0225	2	6	-	0.00427	0.0190	6	75%	No	--
DP Groundwater	SVOCs	Dissolved	Phenol	N/A	N/A	ug/L	4	0.00483	0.00483	0.196	0.225	1	3	-	0.00999	0.0248	3	75%	Yes	--
DP Groundwater	SVOCs	Dissolved	Pyrene	N/A	N/A	ug/L	8	0.00284	0.00327	0.0196	0.0225	8	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	N/A	ug/L	10	0.0528	0.0528	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/L	10	0.0477	0.0477	1.00	1.00	3	6	1	0.0701	2.22	7	70%	No	--
DP Groundwater	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	N/A	ug/L	10	0.0680	0.0680	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,1,2-Trichloroethane	N/A	N/A	ug/L	10	0.0627	0.0627	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	N/A	ug/L	10	0.0360	0.0360	1.00	1.00	5	4	1	0.0555	2.52	5	50%	No	--
DP Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	N/A	ug/L	10	0.0595	0.0595	1.00	1.00	8	1	1	0.0624	1.16	2	20%	No	--
DP Groundwater	VOCs	Total	1,1-Dichloropropene	N/A	N/A	ug/L	10	0.0695	0.0695	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2,3-Trichlorobenzene	N/A	N/A	ug/L	10	0.0605	0.0605	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2,3-Trichloropropane	N/A	N/A	ug/L	10	0.123	0.123	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	10	0.0513	1.00	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	N/A	ug/L	10	0.0283	0.0283	1.00	1.00	7	3	-	0.0317	0.0485	3	30%	No	--
DP Groundwater	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	N/A	ug/L	10	0.222	0.222	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	N/A	ug/L	10	0.0637	0.0637	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	10	0.0383	0.0383	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	N/A	ug/L	10	0.0533	0.0533	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,2-Dichloropropane	N/A	N/A	ug/L	10	0.0380	0.0380	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,3,5-Trimethylbenzene	N/A	N/A	ug/L	10	0.0249	0.0249	1.00	1.00	9	1	-	0.0297	0.0297	1	10%	No	--

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(18 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1
DP Groundwater	VOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	10	0.0599	0.0599	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,3-Dichloropropane	N/A	N/A	ug/L	10	0.0738	0.0738	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	10	0.0180	0.0180	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	N/A	ug/L	10	0.0487	0.0487	1.00	1.00	7	3	-	0.117	0.179	3	30%	No	--
DP Groundwater	VOCs	Total	2-Butanone (MEK)	N/A	N/A	ug/L	10	1.71	1.71	5.00	5.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	2-Chlorotoluene	N/A	N/A	ug/L	10	0.0857	0.0857	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	2-Hexanone	N/A	N/A	ug/L	10	0.993	0.993	5.00	5.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	4-Chlorotoluene	N/A	N/A	ug/L	10	0.0491	0.0491	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	4-Isopropyltoluene	N/A	N/A	ug/L	10	0.0397	0.0397	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	N/A	ug/L	10	0.309	0.309	5.00	5.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Acetone	N/A	N/A	ug/L	10	1.20	1.20	5.00	5.00	7	3	-	1.22	3.88	3	30%	No	--
DP Groundwater	VOCs	Total	Benzene	N/A	N/A	ug/L	10	0.0417	0.0417	1.00	1.00	4	6	-	0.0545	0.137	6	60%	No	--
DP Groundwater	VOCs	Total	Bromobenzene	N/A	N/A	ug/L	10	0.0475	0.0475	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Bromochloromethane	N/A	N/A	ug/L	10	0.0573	0.0573	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Bromodichloromethane	N/A	N/A	ug/L	10	0.0785	0.0785	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Bromoform	N/A	N/A	ug/L	10	0.0830	0.0830	1.00	1.00	9	1	-	0.151	0.151	1	10%	No	--
DP Groundwater	VOCs	Total	Bromomethane	N/A	N/A	ug/L	10	0.0748	1.00	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Carbon Disulfide	N/A	N/A	ug/L	10	0.0494	1.00	1.00	1.00	9	1	-	0.0619	0.0619	1	10%	No	--
DP Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	N/A	ug/L	10	0.0970	0.0970	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Chlorobenzene	N/A	N/A	ug/L	10	0.0376	0.0376	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Chloroethane	N/A	N/A	ug/L	10	0.187	0.187	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Chloroform	N/A	N/A	ug/L	10	0.0717	0.0717	1.00	1.00	8	2	-	0.0907	0.174	2	20%	No	--
DP Groundwater	VOCs	Total	Chloromethane	N/A	N/A	ug/L	10	0.110	0.110	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/L	10	0.0433	0.0433	1.00	1.00	1	3	6	0.0948	341	9	90%	No	--
DP Groundwater	VOCs	Total	cis-1,3-Dichloropropene	N/A	N/A	ug/L	10	0.0301	0.0301	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Dibromochloromethane	N/A	N/A	ug/L	10	0.0539	0.0539	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Dibromomethane	N/A	N/A	ug/L	10	0.0864	0.0864	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Dichlorodifluoromethane	N/A	N/A	ug/L	10	0.0575	0.0575	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	N/A	ug/L	10	0.0752	1.00	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Ethylbenzene	N/A	N/A	ug/L	10	0.0226	1.00	1.00	1.00	6	4	-	0.0357	0.0447	4	40%	No	--
DP Groundwater	VOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	10	0.152	0.152	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Isopropylbenzene	N/A	N/A	ug/L	10	0.0165	0.0165	1.00	1.00	9	1	-	0.0197	0.0197	1	10%	No	--
DP Groundwater	VOCs	Total	m,p-Xylenes	N/A	N/A	ug/L	10	0.0718	0.0718	2.00	2.00	6	4	-	0.0823	0.132	4	40%	No	--
DP Groundwater	VOCs	Total	Naphthalene	N/A	N/A	ug/L	10	0.0317	1.00	1.00	1.00	8	2	-	0.0359	0.0452	2	20%	No	--
DP Groundwater	VOCs	Total	n-Butylbenzene	N/A	N/A	ug/L	10	0.0603	0.0603	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	n-Propylbenzene	N/A	N/A	ug/L	10	0.0356	0.0356	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	o-Xylene	N/A	N/A	ug/L	10	0.0265	0.0265	1.00	1.00	6	4	-	0.0304	0.0735	4	40%	No	--
DP Groundwater	VOCs	Total	sec-Butylbenzene	N/A	N/A	ug/L	10	0.0358	0.0358	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Styrene	N/A	N/A	ug/L	10	0.0279	0.0279	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	tert-Butylbenzene	N/A	N/A	ug/L	10	0.0535	0.0535	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	N/A	ug/L	10	-	-	1.00	1.00	0	3	7	0.336	54.5	10	100%	No	--
DP Groundwater	VOCs	Total	Toluene	N/A	N/A	ug/L	10	0.0588	1.00	1.00	1.00	4	6	-	0.0917	0.299	6	60%	No	--
DP Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	N/A	ug/L	10	0.0584	0.0584	1.00	1.00	7	1	2	0.0955	1.80	3	30%	No	--
DP Groundwater	VOCs	Total	trans-1,3-Dichloropropene	N/A	N/A	ug/L	10	0.0539	0.0539	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/L	10	0.0641	0.0641	1.00	1.00	1	5	4	0.0904	43.7	9	90%	No	--
DP Groundwater	VOCs	Total	Trichlorofluoromethane	N/A	N/A	ug/L	10	0.0620	0.0620	1.00	1.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Vinyl Acetate	N/A	N/A	ug/L	10	0.320	1.01	5.00	5.00	10	-	-	-	-	0	0%	No	--
DP Groundwater	VOCs	Total	Vinyl Chloride	N/A	N/A	ug/L	10	0.0604	0.0604	1.00	1.00	8	2	-	0.132	0.611	2	20%	No	--

Notes
(1) Only evaluated for analytes with a sample size of 20 or more.
(2) In the absense of MDLs, number of non-detected where the MRL was used in lieu of an MDL.
If all samples were NDs (detection rate=0%), or if there was only one distinct detected result, or if there were four or fewer samples and the data set contained NDs, the mean and standard deviation are not shown.
If there were two or more distinct detected results, but not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.
Minimum and maximum detected values are not shown if all samples were NDs.
Minimum and maximum MDLs for NDs are not shown if all samples had detected results.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.
All concentrations are totals.

'--' = Not evaluated
% = percent
DP = Direct Push
Max = maximum
MDL = method detection limit

Table I-5
Data Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(19 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?1

mg/kg = milligrams per kilogram
Min = minimum
MRL = methode reporting limit
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SVOC = semi-volatile organic carbon
VOC = volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter

Table I-6
Data Summary for Reference Area Samples
Bradford Island - Upland Operable Unit
(1 of 3)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Soil	Metals	Total	Aluminum	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	15,900	33,200	14	100%	No	--
Soil	Metals	Total	Antimony	0-1 ft	mg/kg	14	-	-	0.100	0.100	0	1	13	0.0700	0.180	14	100%	No	--
Soil	Metals	Total	Arsenic	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	1.09	5.18	14	100%	No	--
Soil	Metals	Total	Barium	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	57.4	182	14	100%	No	--
Soil	Metals	Total	Beryllium	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	0.319	0.629	14	100%	No	--
Soil	Metals	Total	Cadmium	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	0.0990	0.340	14	100%	No	--
Soil	Metals	Total	Chromium	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	15.5	27.3	14	100%	No	--
Soil	Metals	Total	Cobalt	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	9.66	19.9	14	100%	No	--
Soil	Metals	Total	Copper	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	22.8	58.2	14	100%	No	--
Soil	Metals	Total	Lead	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	12.5	26.5	14	100%	No	--
Soil	Metals	Total	Manganese	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	415	920	14	100%	No	--
Soil	Metals	Total	Mercury	0-1 ft	mg/kg	14	-	-	0.0400	0.0400	0	1	13	0.0340	0.0680	14	100%	No	--
Soil	Metals	Total	Nickel	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	11.5	26.1	14	100%	No	--
Soil	Metals	Total	Selenium	0-1 ft	mg/kg	14	0.400	0.500	2.10	2.30	14	-	-	-	-	0	0%	No	--
Soil	Metals	Total	Silver	0-1 ft	mg/kg	14	0.0220	0.0230	0.0610	0.0900	2	8	4	0.0270	0.187	12	86%	No	--
Soil	Metals	Total	Thallium	0-1 ft	mg/kg	14	0.0420	0.103	0.0420	0.103	6	-	8	0.128	0.203	8	57%	No	--
Soil	Metals	Total	Vanadium	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	43.0	99.3	14	100%	No	--
Soil	Metals	Total	Zinc	0-1 ft	mg/kg	14	-	-	-	-	0	-	14	45.6	68.5	14	100%	No	--
Soil	SVOCs	Total	Acenaphthene	0-1 ft	ug/kg	14	1.00	1.00	9.90	15.0	5	9	-	1.20	3.40	9	64%	No	--
Soil	SVOCs	Total	Acenaphthylene	0-1 ft	ug/kg	14	1.40	1.40	9.90	10.0	13	1	-	1.60	1.60	1	7%	No	--
Soil	SVOCs	Total	Anthracene	0-1 ft	ug/kg	14	1.40	1.40	9.90	15.0	2	12	-	1.50	4.90	12	86%	No	--
Soil	SVOCs	Total	Fluorene	0-1 ft	ug/kg	14	1.70	1.70	9.90	10.0	13	1	-	3.20	3.20	1	7%	No	--
Soil	SVOCs	Total	Naphthalene	0-1 ft	ug/kg	14	1.30	1.30	9.90	10.0	8	6	-	1.30	2.20	6	43%	No	--
Soil	SVOCs	Total	Phenanthrene	0-1 ft	ug/kg	14	-	-	9.90	10.0	0	6	8	5.50	34.0	14	100%	No	--
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	14	-	-	-	-	-	-	-	12.30	49.3	14	100%	No	--
Soil	SVOCs	Total	Benzo(a)anthracene	0-1 ft	ug/kg	14	-	-	9.90	10.0	0	4	10	4.60	34.0	14	100%	No	--
Soil	SVOCs	Total	Benzo(a)pyrene	0-1 ft	ug/kg	14	-	-	9.90	10.0	0	2	12	7.70	45.0	14	100%	No	--
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	ug/kg	14	-	-	10.0	10.0	0	1	13	9.10	55.0	14	100%	No	--
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	ug/kg	14	-	-	9.90	10.0	0	4	10	5.80	32.0	14	100%	No	--
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	ug/kg	14	-	-	9.90	15.0	0	13	1	2.70	19.0	14	100%	No	--
Soil	SVOCs	Total	Chrysene	0-1 ft	ug/kg	14	-	-	9.90	10.0	0	2	12	6.40	45.0	14	100%	No	--
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	ug/kg	14	2.20	2.20	9.90	10.0	7	7	-	2.70	6.90	7	50%	No	--
Soil	SVOCs	Total	Fluoranthene	0-1 ft	ug/kg	14	-	-	-	-	0	-	14	10.0	66.0	14	100%	No	--
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	ug/kg	14	-	-	9.90	10.0	0	4	10	5.20	34.0	14	100%	No	--
Soil	SVOCs	Total	Pyrene	0-1 ft	ug/kg	14	-	-	-	-	0	-	14	10.0	64.0	14	100%	No	--
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	14	-	-	-	-	-	-	-	64.5	401	14	100%	No	--
Groundwater	Metals	Total	Aluminum	N/A	ug/L	4	-	-	-	-	0	-	4	6.45	210	4	100%	Yes	--
Groundwater	Metals	Total	Antimony	N/A	ug/L	4	-	-	0.0500	0.0900	0	3	1	0.0250	0.0800	4	100%	Yes	--
Groundwater	Metals	Total	Arsenic	N/A	ug/L	4	1.32	1.32	1.32	1.32	1	-	3	1.22	1.68	3	75%	Yes	--
Groundwater	Metals	Total	Barium	N/A	ug/L	4	-	-	-	-	0	-	4	17.2	26.5	4	100%	Yes	--
Groundwater	Metals	Total	Beryllium	N/A	ug/L	4	0.0200	0.0200	0.0200	0.0200	3	1	-	0.0100	0.0100	1	25%	Yes	--
Groundwater	Metals	Total	Cadmium	N/A	ug/L	4	0.00500	0.0570	0.0200	0.0570	3	-	1	0.0490	0.0490	1	25%	Yes	--
Groundwater	Metals	Total	Calcium	N/A	ug/L	4	-	-	-	-	0	-	4	29,200	31,000	4	100%	Yes	--
Groundwater	Metals	Total	Chromium	N/A	ug/L	4	0.570	0.570	0.200	0.570	1	1	2	0.145	3.98	3	75%	Yes	--
Groundwater	Metals	Total	Cobalt	N/A	ug/L	4	-	-	-	-	0	-	4	0.0710	0.323	4	100%	Yes	--
Groundwater	Metals	Total	Copper	N/A	ug/L	4	0.670	0.670	0.670	0.670	1	-	3	0.125	1.12	3	75%	Yes	--
Groundwater	Metals	Total	Iron	N/A	ug/L	4	37.0	434	37.0	434	2	-	2	116	451	2	50%	Yes	--
Groundwater	Metals	Total	Lead	N/A	ug/L	4	0.363	0.363	0.363	0.363	1	-	3	0.102	0.248	3	75%	Yes	--
Groundwater	Metals	Total	Magnesium	N/A	ug/L	4	-	-	-	-	0	-	4	7,620	8,320	4	100%	Yes	--
Groundwater	Metals	Total	Manganese	N/A	ug/L	4	-	-	-	-	0	-	4	204	258	4	100%	Yes	--
Groundwater	Metals	Total	Mercury	N/A	ug/L	4	0.0300	0.0500	0.200	0.200	4	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Total	Nickel	N/A	ug/L	4	0.500	0.500	20.0	20.0	1	-	3	0.570	6.62	3	75%	Yes	--
Groundwater	Metals	Total	Potassium	N/A	ug/L	4	-	-	-	-	0	-	4	4,700	4,960	4	100%	Yes	--
Groundwater	Metals	Total	Selenium	N/A	ug/L	4	0.400	0.500	1.00	1.20	4	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Total	Silver	N/A	ug/L	4	0.00900	0.0660	0.0200	0.0660	3	1	-	0.00900	0.00900	1	25%	Yes	--

Table I-6
Data Summary for Reference Area Samples
Bradford Island - Upland Operable Unit
(2 of 3)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]
Groundwater	Metals	Total	Sodium	N/A	ug/L	4	-	-	-	-	0	-	4	4,940	5,620	4	100%	Yes	--
Groundwater	Metals	Total	Thallium	N/A	ug/L	4	0.00500	0.00800	0.0200	0.0200	4	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Total	Vanadium	N/A	ug/L	4	0.0700	0.0700	0.200	10.0	1	2	1	0.175	1.55	3	75%	Yes	--
Groundwater	Metals	Total	Zinc	N/A	ug/L	4	-	-	10.0	21.0	0	2	2	1.75	8.28	4	100%	Yes	--
Groundwater	Metals	Dissolved	Aluminum	N/A	ug/L	4	-	-	-	-	0	-	4	2.00	2.60	4	100%	Yes	--
Groundwater	Metals	Dissolved	Antimony	N/A	ug/L	4	0.0100	0.0100	0.0500	0.0900	2	1	1	0.0140	0.0500	2	50%	Yes	--
Groundwater	Metals	Dissolved	Arsenic	N/A	ug/L	4	-	-	-	-	0	-	4	1.13	1.55	4	100%	Yes	--
Groundwater	Metals	Dissolved	Barium	N/A	ug/L	4	-	-	-	-	0	-	4	15.2	22.8	4	100%	Yes	--
Groundwater	Metals	Dissolved	Beryllium	N/A	ug/L	4	0.00800	0.0200	0.0200	0.0200	4	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Cadmium	N/A	ug/L	4	0.00500	0.0200	0.0200	0.0200	2	-	2	0.0310	0.0425	2	50%	Yes	--
Groundwater	Metals	Dissolved	Calcium	N/A	ug/L	4	-	-	-	-	0	-	4	29,000	30,100	4	100%	Yes	--
Groundwater	Metals	Dissolved	Chromium	N/A	ug/L	4	-	-	0.200	0.200	0	3	1	0.0600	0.290	4	100%	Yes	--
Groundwater	Metals	Dissolved	Cobalt	N/A	ug/L	4	0.0790	0.0790	0.0790	0.0790	1	-	3	0.0630	0.139	3	75%	Yes	--
Groundwater	Metals	Dissolved	Copper	N/A	ug/L	4	0.300	0.300	0.100	0.300	1	2	1	0.0800	0.315	3	75%	Yes	--
Groundwater	Metals	Dissolved	Iron	N/A	ug/L	4	20.0	20.0	20.0	20.0	1	2	1	9.80	24.8	3	75%	Yes	--
Groundwater	Metals	Dissolved	Lead	N/A	ug/L	4	0.0300	0.0680	0.0300	0.0680	2	2	-	0.00600	0.0220	2	50%	Yes	--
Groundwater	Metals	Dissolved	Magnesium	N/A	ug/L	4	-	-	-	-	0	-	4	7,360	8,080	4	100%	Yes	--
Groundwater	Metals	Dissolved	Manganese	N/A	ug/L	4	-	-	-	-	0	-	4	187	228	4	100%	Yes	--
Groundwater	Metals	Dissolved	Mercury	N/A	ug/L	4	0.0300	0.0500	0.200	0.200	4	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Nickel	N/A	ug/L	4	0.500	0.500	20.0	20.0	1	-	3	0.660	1.41	3	75%	Yes	--
Groundwater	Metals	Dissolved	Potassium	N/A	ug/L	4	-	-	-	-	0	-	4	4,710	4,880	4	100%	Yes	--
Groundwater	Metals	Dissolved	Selenium	N/A	ug/L	4	0.400	0.500	1.00	1.20	4	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Silver	N/A	ug/L	4	0.00900	0.00900	0.0200	0.0300	3	-	1	0.117	0.117	1	25%	Yes	--
Groundwater	Metals	Dissolved	Sodium	N/A	ug/L	4	5,440	5,440	5,440	5,440	1	-	3	4,820	4,980	3	75%	Yes	--
Groundwater	Metals	Dissolved	Thallium	N/A	ug/L	4	0.00500	0.00800	0.0200	0.0200	4	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Vanadium	N/A	ug/L	4	0.0700	0.800	0.200	10.0	4	-	-	-	-	0	0%	Yes	--
Groundwater	Metals	Dissolved	Zinc	N/A	ug/L	4	10.0	10.0	10.0	21.0	1	1	2	1.15	3.14	3	75%	Yes	--
Groundwater	Butyltins	Total	Dibutyltin	N/A	ug/L	1	0.00810	0.00810	0.0500	0.0500	1	-	-	-	-	0	0%	Yes	--
Groundwater	Butyltins	Total	Monobutyltin	N/A	ug/L	1	-	-	0.0500	0.0500	0	1	-	0.0345	0.0345	1	100%	Yes	--
Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	1	14.0	14.0	130	130	1	-	-	-	-	0	0%	Yes	--
Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	ug/L	1	24.0	24.0	130	130	1	-	-	-	-	0	0%	Yes	--
Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	1	13.0	13.0	250	250	1	-	-	-	-	0	0%	Yes	--
Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	1	0.0330	0.0330	0.230	0.230	1	-	-	-	-	0	0%	Yes	--
Groundwater	SVOCs	Total	4-Nitrophenol	N/A	ug/L	1	0.320	0.320	2.30	2.30	1	-	-	-	-	0	0%	Yes	--
Groundwater	SVOCs	Total	Benzo(b)fluoranthene	N/A	ug/L	1	-	-	0.230	0.230	0	1	-	0.0250	0.0250	1	100%	Yes	--
Groundwater	SVOCs	Total	Benzo(k)fluoranthene	N/A	ug/L	1	0.0270	0.0270	0.230	0.230	1	-	-	-	-	0	0%	Yes	--
Groundwater	SVOCs	Total	Phenanthrene	N/A	ug/L	1	0.0250	0.0250	0.230	0.230	1	-	-	-	-	0	0%	Yes	--
Groundwater	SVOCs	Total	Phenol	N/A	ug/L	1	0.0700	0.0700	0.560	0.560	1	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Chloroform	N/A	ug/L	1	0.0820	0.0820	0.500	0.500	1	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	1	0.0970	0.0970	0.500	0.500	1	-	-	-	-	0	0%	Yes	--
Groundwater	VOCs	Total	Vinyl Chloride	N/A	ug/L	1	0.0440	0.0440	0.500	0.500	1	-	-	-	-	0	0%	Yes	--

Notes
(1) Only evaluated for analytes with a sample size of 20 or more.
If all samples were NDs (detection rate=0%), or if there was only one distinct detected result, or if there were four or fewer samples and the data set contained NDs, the mean and standard deviation are not shown.
If there were two or more distinct detected results, but not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.
Minimum and maximum detected values are not shown if all samples were NDs.
Minimum and maximum MDLs for NDs are not shown if all samples had detected results.
For some (older) historial data, the MDLs were not available. In these cases, MRLs were used.
All concentrations are totals.

'--' = Not evaluated
% = percent
Max = maximum
MDL = method detection limit

Table I-6
Data Summary for Reference Area Samples
Bradford Island - Upland Operable Unit
(3 of 3)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Number of Detections Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)	Detection Rate > 5%?[1]

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
Min = minimum
MRL = methode reporting limit
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
SVOC = semi-volatile organic carbon
VOC = volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter

Table I-7
Data Summary for Pre-Sediment Removal Forebay Samples
Bradford Island - River Operable Unit
(1 of 3)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Sediment	Metals	Total	Aluminum	mg/kg	Dry	5	-	-	-	-	0	-	5	8,830	13,950	5	100%	Yes
Sediment	Metals	Total	Antimony	mg/kg	Dry	5	-	-	-	-	0	-	5	0.0500	0.170	5	100%	Yes
Sediment	Metals	Total	Arsenic	mg/kg	Dry	5	-	-	-	-	0	-	5	2.00	5.68	5	100%	Yes
Sediment	Metals	Total	Barium	mg/kg	Dry	5	-	-	-	-	0	-	5	89.8	149	5	100%	Yes
Sediment	Metals	Total	Beryllium	mg/kg	Dry	5	-	-	-	-	0	-	5	0.280	0.358	5	100%	Yes
Sediment	Metals	Total	Cadmium	mg/kg	Dry	5	-	-	-	-	0	-	5	0.265	0.608	5	100%	Yes
Sediment	Metals	Total	Chromium	mg/kg	Dry	5	-	-	-	-	0	-	5	14.8	22.1	5	100%	Yes
Sediment	Metals	Total	Cobalt	mg/kg	Dry	5	-	-	-	-	0	-	5	5.87	10.4	5	100%	Yes
Sediment	Metals	Total	Copper	mg/kg	Dry	5	-	-	-	-	0	-	5	15.3	38.9	5	100%	Yes
Sediment	Metals	Total	Lead	mg/kg	Dry	5	-	-	-	-	0	-	5	7.27	18.4	5	100%	Yes
Sediment	Metals	Total	Mercury	mg/kg	Dry	5	-	-	-	-	0	-	5	0.0620	0.366	5	100%	Yes
Sediment	Metals	Total	Nickel	mg/kg	Dry	5	-	-	-	-	0	-	5	9.92	15.9	5	100%	Yes
Sediment	Metals	Total	Thallium	mg/kg	Dry	5	-	-	-	-	0	-	5	0.112	0.171	5	100%	Yes
Sediment	Metals	Total	Vanadium	mg/kg	Dry	5	-	-	-	-	0	-	5	34.6	58.6	5	100%	Yes
Sediment	Metals	Total	Zinc	mg/kg	Dry	5	-	-	-	-	0	-	5	46.0	108	5	100%	Yes
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	5	-	-	31.0	44.0	0	4	1	8.80	35.0	5	100%	Yes
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	5	-	-	130	180	0	5	-	63.5	120	5	100%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	5	2.60	5.80	7.60	17.0	5	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	5	2.60	5.80	16.0	34.0	5	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	5	2.60	5.80	7.60	17.0	5	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	5	2.60	5.80	7.60	17.0	5	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	5	2.60	5.80	7.60	17.0	5	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	5	5.80	5.80	17.0	17.0	1	-	4	13.0	130	4	80%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	5	2.60	5.80	7.60	17.0	5	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	5	2.60	5.80	7.60	17.0	5	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	5	2.60	5.80	7.60	17.0	5	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Dry	5	-	-	-	-	-	-	-	15.8	133	4	80%	Yes
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	5	7.00	7.00	77.0	170	1	3	1	15.5	180	4	80%	Yes
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	5	3.20	3.20	7.70	17.0	4	1	-	10.0	10.0	1	20%	Yes
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	5	1.30	1.30	7.70	17.0	4	1	-	2.60	2.60	1	20%	Yes
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	5	-	-	16.0	34.0	0	5	-	9.10	24.0	5	100%	Yes
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	5	1.70	2.90	7.70	85.0	5	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	5	2.90	4.70	8.40	17.0	3	1	1	4.40	4,100	2	40%	Yes
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	5	1.40	2.40	7.70	17.0	5	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	5	1.40	14.0	8.40	78.0	4	1	-	4.30	4.30	1	20%	Yes
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	5	1.10	1.90	7.70	17.0	5	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	5	-	-	8.10	17.0	0	4	1	2.90	9.10	5	100%	Yes
Sediment	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	ug/kg	Dry	5	-	-	-	-	-	-	-	8.40	19.8	5	100%	Yes
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	5	-	-	7.70	17.0	0	5	-	3.05	5.70	5	100%	Yes
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	5	2.60	16.0	8.40	78.0	2	2	1	6.10	32.0	3	60%	Yes
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	5	-	-	8.10	17.0	0	4	1	4.20	11.0	5	100%	Yes
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	5	-	-	7.70	17.0	0	5	-	3.70	5.40	5	100%	Yes
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	5	-	-	7.70	17.0	0	5	-	2.30	3.40	5	100%	Yes
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	5	-	-	8.10	17.0	0	4	1	4.10	7.90	5	100%	Yes
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	5	1.50	1.50	7.70	17.0	3	2	-	2.50	3.10	2	40%	Yes
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	5	-	-	8.20	17.0	0	3	2	4.40	13.0	5	100%	Yes
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	5	-	-	7.70	17.0	0	5	-	3.90	13.0	5	100%	Yes
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	5	-	-	8.10	17.0	0	4	1	4.50	13.0	5	100%	Yes

Table I-7
Data Summary for Pre-Sediment Removal Forebay Samples
Bradford Island - River Operable Unit
(2 of 3)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Sediment	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	ug/kg	Dry	5	-	-	-	-	-	-	-	46.4	99.0	5	100%	Yes
Sediment	SVOCs	Total	Total PAHs (KM, capped; NDs at MDL)	ug/kg	Dry	5	-	-	-	-	-	-	-	53.8	114	5	100%	Yes
Clam	Metals	Total	Aluminum	mg/kg	Wet	4	-	-	-	-	0	-	4	151	196	4	100%	Yes
Clam	Metals	Total	Antimony	mg/kg	Wet	4	0.00500	0.00500	0.0120	0.0130	4	-	-	-	-	0	0%	Yes
Clam	Metals	Total	Arsenic	mg/kg	Wet	4	-	-	-	-	0	-	4	2.56	3.13	4	100%	Yes
Clam	Metals	Total	Barium	mg/kg	Wet	4	-	-	-	-	0	-	4	2.07	2.68	4	100%	Yes
Clam	Metals	Total	Beryllium	mg/kg	Wet	4	-	-	0.0049	0.005	0	2	2	0.00360	0.00565	4	100%	Yes
Clam	Metals	Total	Cadmium	mg/kg	Wet	4	-	-	-	-	0	-	4	0.340	0.454	4	100%	Yes
Clam	Metals	Total	Chromium	mg/kg	Wet	4	-	-	-	-	0	-	4	0.600	1.20	4	100%	Yes
Clam	Metals	Total	Cobalt	mg/kg	Wet	4	-	-	-	-	0	-	4	0.121	0.172	4	100%	Yes
Clam	Metals	Total	Copper	mg/kg	Wet	4	-	-	-	-	0	-	4	10.1	13.5	4	100%	Yes
Clam	Metals	Total	Lead	mg/kg	Wet	4	-	-	-	-	0	-	4	0.101	0.184	4	100%	Yes
Clam	Metals	Total	Mercury	mg/kg	Wet	4	-	-	-	-	0	-	4	0.0101	0.0132	4	100%	Yes
Clam	Metals	Total	Nickel	mg/kg	Wet	4	-	-	-	-	0	-	4	0.275	0.394	4	100%	Yes
Clam	Metals	Total	Thallium	mg/kg	Wet	4	-	-	-	-	0	-	4	0.0155	0.0193	4	100%	Yes
Clam	Metals	Total	Vanadium	mg/kg	Wet	4	-	-	-	-	0	-	4	0.391	0.540	4	100%	Yes
Clam	Metals	Total	Zinc	mg/kg	Wet	4	-	-	-	-	0	-	4	23.7	28.2	4	100%	Yes
Clam	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	4	2.40	4.70	9.80	20.0	4	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	4	2.60	5.10	20.0	40.0	4	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	4	2.30	4.50	9.80	20.0	4	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	4	2.20	4.40	9.80	20.0	4	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	4	0.510	1.00	9.80	20.0	4	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	4	-	-	-	-	0	-	4	120	355	4	100%	Yes
Clam	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	4	1.90	3.80	9.80	20.0	4	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	4	2.00	4.00	9.80	20.0	4	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Wet	4	-	-	-	-	-	-	-	120	355	4	100%	Yes
Clam	SVOCs	Total	Acenaphthene	ug/kg	Wet	3	-	-	0.490	0.500	0	3	-	0.225	0.250	3	100%	Yes
Clam	SVOCs	Total	Anthracene	ug/kg	Wet	3	-	-	-	-	0	-	3	0.945	1.10	3	100%	Yes
Clam	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	3	-	-	-	-	0	-	3	0.600	1.03	3	100%	Yes
Clam	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	3	0.0810	0.0810	0.490	0.500	3	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	3	0.0700	0.0700	0.490	0.500	3	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	3	0.0730	0.0730	0.490	0.500	3	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	3	0.0560	0.0560	0.490	0.500	3	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	3	66.0	66.0	170	200	3	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	3	7.30	7.30	34.0	40.0	3	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Carbazole	ug/kg	Wet	3	9.10	9.10	34.0	40.0	3	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Chrysene	ug/kg	Wet	3	-	-	-	-	0	-	3	2.10	2.55	3	100%	Yes
Clam	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	3	0.0590	0.0590	0.490	0.500	3	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	3	16.0	16.0	34.0	34.0	1	-	2	59.0	71.0	2	67%	Yes
Clam	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	3	11.0	11.0	34.0	40.0	3	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Fluoranthene	ug/kg	Wet	3	-	-	-	-	0	-	3	12.0	12.5	3	100%	Yes
Clam	SVOCs	Total	Fluorene	ug/kg	Wet	3	-	-	-	-	0	-	3	1.30	1.30	3	100%	Yes
Clam	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	3	0.0640	0.0640	0.490	0.500	3	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	3	7.70	7.70	34.0	40.0	3	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Phenanthrene	ug/kg	Wet	3	-	-	-	-	0	-	3	6.60	7.00	3	100%	Yes
Clam	SVOCs	Total	Pyrene	ug/kg	Wet	3	-	-	-	-	0	-	3	2.70	2.80	3	100%	Yes

Notes

Table I-7
Data Summary for Pre-Sediment Removal Forebay Samples
Bradford Island - River Operable Unit
(3 of 3)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)

% = percent
Dry = Dry weight
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
Max = maximum
MDL = method detection limit
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
Min = minimum
MRL = method reporting limit
ND = non-detect
No. = number
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
Wet = Wet Weight

Table I-8a
Data Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(1 of 7)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Surface Water	Metals	Dissolved	Aluminum	ug/L	Wet	5	20.0	50.0	50.0	50.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Antimony	ug/L	Wet	5	7.00	50.0	50.0	50.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Arsenic	ug/L	Wet	5	-	-	-	-	0	-	5	0.720	0.940	5	100%	Yes
Surface Water	Metals	Dissolved	Barium	ug/L	Wet	5	-	-	-	-	0	-	5	21.0	24.0	5	100%	Yes
Surface Water	Metals	Dissolved	Beryllium	ug/L	Wet	5	0.0200	0.0200	0.0200	0.0200	3	2	-	0.00300	0.00400	2	40%	Yes
Surface Water	Metals	Dissolved	Cadmium	ug/L	Wet	5	0.00700	0.00800	0.0200	0.0200	3	2	-	0.00800	0.0100	2	40%	Yes
Surface Water	Metals	Dissolved	Chromium	ug/L	Wet	5	2.00	2.00	5.00	5.00	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Cobalt	ug/L	Wet	5	2.00	2.00	10.0	10.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Copper	ug/L	Wet	5	-	-	-	-	0	-	5	0.440	0.520	5	100%	Yes
Surface Water	Metals	Dissolved	Lead	ug/L	Wet	5	0.00300	0.00900	0.0200	0.0200	2	1	2	0.0140	0.0360	3	60%	Yes
Surface Water	Metals	Dissolved	Mercury	ug/L	Wet	5	0.0300	0.0300	0.200	0.200	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Nickel	ug/L	Wet	5	2.00	2.00	20.0	20.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Thallium	ug/L	Wet	5	-	-	-	-	0	-	5	0.0230	0.0310	5	100%	Yes
Surface Water	Metals	Dissolved	Vanadium	ug/L	Wet	5	5.00	5.00	10.0	10.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Zinc	ug/L	Wet	5	7.00	7.00	10.0	10.0	4	1	-	7.50	7.50	1	20%	Yes
Surface Water	Metals	Total	Aluminum	ug/L	Wet	5	145	152	145	152	2	-	3	91.0	141	3	60%	Yes
Surface Water	Metals	Total	Antimony	ug/L	Wet	5	7.00	50.0	50.0	50.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Total	Arsenic	ug/L	Wet	5	-	-	-	-	0	-	5	0.810	1.01	5	100%	Yes
Surface Water	Metals	Total	Barium	ug/L	Wet	5	-	-	-	-	0	-	5	22.0	27.0	5	100%	Yes
Surface Water	Metals	Total	Beryllium	ug/L	Wet	5	0.0200	0.0200	0.0200	0.0200	3	2	-	0.00300	0.00900	2	40%	Yes
Surface Water	Metals	Total	Cadmium	ug/L	Wet	5	-	-	0.0200	0.0200	0	5	-	0.00900	0.0190	5	100%	Yes
Surface Water	Metals	Total	Chromium	ug/L	Wet	5	2.00	2.00	5.00	5.00	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Total	Cobalt	ug/L	Wet	5	2.00	2.00	10.0	10.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Total	Copper	ug/L	Wet	5	-	-	-	-	0	-	5	0.670	0.790	5	100%	Yes
Surface Water	Metals	Total	Lead	ug/L	Wet	5	-	-	-	-	0	-	5	0.0790	0.175	5	100%	Yes
Surface Water	Metals	Total	Mercury	ug/L	Wet	5	0.0300	0.0300	0.200	0.200	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Total	Nickel	ug/L	Wet	5	2.00	2.00	20.0	20.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Total	Thallium	ug/L	Wet	5	-	-	-	-	0	-	5	0.0260	0.0330	5	100%	Yes
Surface Water	Metals	Total	Vanadium	ug/L	Wet	5	5.00	5.00	10.0	10.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Total	Zinc	ug/L	Wet	5	7.00	7.00	10.0	10.0	5	-	-	-	-	0	0%	Yes
Surface Water	NWTPH-Dx	Dissolved	Diesel Range Organics	ug/L	Wet	5	-	-	100	120	0	5	-	14.0	46.0	5	100%	Yes
Surface Water	NWTPH-Dx	Dissolved	Residual Range Organics	ug/L	Wet	5	19.0	120	100	120	5	-	-	-	-	0	0%	Yes
Surface Water	NWTPH-Dx	Total	Diesel Range Organics	ug/L	Wet	5	11.0	11.0	100	120	3	2	-	15.0	15.0	2	40%	Yes
Surface Water	NWTPH-Dx	Total	Residual Range Organics	ug/L	Wet	5	19.0	120	100	120	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Acenaphthene	ng/L	Wet	5	-	-	-	-	0	-	5	0.706	1.26	5	100%	Yes
Surface Water	SVOCs	Filter	Acenaphthene	ng/L	Wet	5	0.0150	0.0329	0.0150	0.0329	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Acenaphthene	ng/L	Wet	5	-	-	-	-	-	-	-	0.739	1.28	5	100%	Yes
Surface Water	SVOCs	Column	Anthracene	ng/L	Wet	5	0.0569	0.103	0.0569	0.103	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Anthracene	ng/L	Wet	5	-	-	-	-	0	-	5	0.0181	0.0317	5	100%	Yes
Surface Water	SVOCs	C+F	Anthracene	ng/L	Wet	5	-	-	-	-	-	-	-	0.0857	0.121	5	100%	Yes
Surface Water	SVOCs	Column	Benzo(a)anthracene	ng/L	Wet	5	0.00830	0.0116	0.0116	0.0116	2	-	3	0.00830	0.0152	3	60%	Yes
Surface Water	SVOCs	Filter	Benzo(a)anthracene	ng/L	Wet	5	0.0288	0.0519	0.0288	0.0519	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Benzo(a)anthracene	ng/L	Wet	5	0.0371	0.0635	0.0371	0.0635	-	-	-	0.0451	0.0600	3	60%	Yes
Surface Water	SVOCs	Column	Benzo(a)pyrene	ng/L	Wet	5	0.0131	0.0269	0.0131	0.0269	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Benzo(a)pyrene	ng/L	Wet	5	0.0221	0.0582	0.0221	0.0582	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Benzo(a)pyrene	ng/L	Wet	5	0.0385	0.0726	0.0385	0.0726	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Benzo(b)fluoranthene	ng/L	Wet	5	0.00920	0.0182	0.0107	0.0182	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Benzo(b)fluoranthene	ng/L	Wet	5	0.0333	0.0774	0.0333	0.0422	3	-	2	0.0713	0.0825	2	40%	Yes
Surface Water	SVOCs	C+F	Benzo(b)fluoranthene	ng/L	Wet	5	0.0440	0.0956	0.0440	0.0956	-	-	-	0.0886	0.0917	2	40%	Yes
Surface Water	SVOCs	Column	Benzo(g,h,i)perylene	ng/L	Wet	5	0.00980	0.0195	0.00980	0.0195	5	-	-	-	-	0	0%	Yes

Table I-8a
Data Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(2 of 7)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Surface Water	SVOCs	Filter	Benzo(g,h,i)perylene	ng/L	Wet	5	0.0241	0.0523	0.0241	0.0523	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Benzo(g,h,i)perylene	ng/L	Wet	5	0.0380	0.0605	0.0380	0.0605	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Benzo(j,k)flouranthenes	ng/L	Wet	5	0.0100	0.0208	0.0100	0.0208	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Benzo(j,k)flouranthenes	ng/L	Wet	5	0.0318	0.0497	0.0318	0.0497	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Benzo(j,k)flouranthenes	ng/L	Wet	5	0.0433	0.0705	0.0433	0.0705	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Bis(2-ethylhexyl) Phthalate	ng/L	Wet	5	6.52	11.8	6.52	11.8	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Bis(2-ethylhexyl) Phthalate	ng/L	Wet	5	3.41	4.63	3.41	4.63	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Bis(2-ethylhexyl) Phthalate	ng/L	Wet	5	9.93	16.3	9.93	16.3	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Butyl Benzyl Phthalate	ng/L	Wet	5	0.260	2.29	0.260	2.29	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Butyl Benzyl Phthalate	ng/L	Wet	5	0.150	0.198	0.150	0.198	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Butyl Benzyl Phthalate	ng/L	Wet	5	0.423	2.45	0.423	2.45	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Chrysene	ng/L	Wet	5	-	-	-	-	0	-	5	0.0385	0.0514	5	100%	Yes
Surface Water	SVOCs	Filter	Chrysene	ng/L	Wet	5	0.0626	0.0844	0.0626	0.0844	3	-	2	0.113	0.125	2	40%	Yes
Surface Water	SVOCs	C+F	Chrysene	ng/L	Wet	5	-	-	-	-	-	-	-	0.101	0.171	5	100%	Yes
Surface Water	SVOCs	Column	Dibenz(a,h)anthracene	ng/L	Wet	5	0.0107	0.0212	0.0107	0.0212	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Dibenz(a,h)anthracene	ng/L	Wet	5	0.0187	0.0395	0.0187	0.0395	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Dibenz(a,h)anthracene	ng/L	Wet	5	0.0347	0.0537	0.0347	0.0537	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Di-n-butyl Phthalate	ng/L	Wet	5	0.562	1.97	0.562	1.97	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Di-n-butyl Phthalate	ng/L	Wet	5	0.200	0.303	0.200	0.303	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Di-n-butyl Phthalate	ng/L	Wet	5	0.774	2.24	0.762	2.24	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Di-n-octyl Phthalate	ng/L	Wet	5	0.110	0.852	0.110	0.852	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Di-n-octyl Phthalate	ng/L	Wet	5	0.0960	0.249	0.0960	0.249	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Di-n-octyl Phthalate	ng/L	Wet	5	0.249	1.01	0.249	1.01	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Fluoranthene	ng/L	Wet	5	0.516	0.572	0.516	0.572	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Fluoranthene	ng/L	Wet	5	-	-	-	-	0	-	5	0.112	0.212	5	100%	Yes
Surface Water	SVOCs	C+F	Fluoranthene	ng/L	Wet	5	-	-	-	-	-	-	-	0.658	0.784	5	100%	Yes
Surface Water	SVOCs	Column	Indeno(1,2,3-cd)pyrene	ng/L	Wet	5	0.0101	0.0202	0.0101	0.0202	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Indeno(1,2,3-cd)pyrene	ng/L	Wet	5	0.0293	0.0459	0.0293	0.0459	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Indeno(1,2,3-cd)pyrene	ng/L	Wet	5	0.0456	0.0586	0.0456	0.0586	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Phenanthrene	ng/L	Wet	5	-	-	-	-	0	-	5	1.27	1.50	5	100%	Yes
Surface Water	SVOCs	Filter	Phenanthrene	ng/L	Wet	5	0.0660	0.107	0.0660	0.107	4	-	1	0.188	0.188	1	20%	Yes
Surface Water	SVOCs	C+F	Phenanthrene	ng/L	Wet	5	-	-	-	-	-	-	-	1.35	1.61	5	100%	Yes
Sediment	Metals	Total	Aluminum	mg/kg	Dry	19	-	-	-	-	0	-	19	9,000	22,900	19	100%	No
Sediment	Metals	Total	Antimony	mg/kg	Dry	19	0.0400	0.0400	0.0600	0.0600	1	2	16	0.0400	0.280	18	95%	No
Sediment	Metals	Total	Arsenic	mg/kg	Dry	19	-	-	-	-	0	-	19	1.40	5.39	19	100%	No
Sediment	Metals	Total	Barium	mg/kg	Dry	19	-	-	-	-	0	-	19	53.1	202	19	100%	No
Sediment	Metals	Total	Beryllium	mg/kg	Dry	19	-	-	-	-	0	-	19	0.215	0.597	19	100%	No
Sediment	Metals	Total	Cadmium	mg/kg	Dry	19	0.115	0.121	0.115	0.121	2	-	17	0.175	0.719	17	89%	No
Sediment	Metals	Total	Chromium	mg/kg	Dry	19	-	-	-	-	0	-	19	10.1	33.5	19	100%	No
Sediment	Metals	Total	Cobalt	mg/kg	Dry	19	-	-	-	-	0	-	19	4.82	15.1	19	100%	No
Sediment	Metals	Total	Copper	mg/kg	Dry	19	-	-	-	-	0	-	19	11.3	33.1	19	100%	No
Sediment	Metals	Total	Lead	mg/kg	Dry	19	-	-	-	-	0	-	19	3.30	16.8	19	100%	No
Sediment	Metals	Total	Mercury	mg/kg	Dry	19	-	-	0.02	0.02	0	1	18	0.00800	0.373	19	100%	No
Sediment	Metals	Total	Nickel	mg/kg	Dry	19	-	-	-	-	0	-	19	6.39	51.5	19	100%	No
Sediment	Metals	Total	Thallium	mg/kg	Dry	19	0.108	0.132	0.108	0.132	4	-	15	0.135	0.218	15	79%	No
Sediment	Metals	Total	Vanadium	mg/kg	Dry	19	-	-	-	-	0	-	19	27.5	59.3	19	100%	No
Sediment	Metals	Total	Zinc	mg/kg	Dry	19	-	-	-	-	0	-	19	50.3	113	19	100%	No
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	19	-	-	13.0	18.0	0	12	7	2.60	54.0	19	100%	No
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	19	130	180	130	200	7	12	-	17.0	180	12	63%	No
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	19	1.70	10.0	6.40	10.0	19	-	-	-	-	0	0%	No

Table I-8a
Data Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(3 of 7)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	19	1.70	29.0	13.0	29.0	19	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	19	1.70	18.0	6.40	18.0	19	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	19	1.70	5.70	6.40	10.0	19	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	19	1.70	4.00	6.40	10.0	19	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	19	1.70	2.60	6.40	10.0	17	1	1	4.60	27.0	2	11%	No
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	19	1.70	4.70	6.40	10.0	19	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	19	1.70	1.70	6.40	10.0	19	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	19	1.70	1.70	6.40	10.0	19	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Dry	19	-	-	-	-	-	-	-	6.30	28.7	2	11%	No
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	19	200	200	200	200	16	2	1	38.0	340	3	16%	No
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	19	1.50	10.0	9.80	10.0	19	-	-	-	-	0	0%	No
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	19	1.30	1.30	9.80	10.0	18	1	-	1.40	1.40	1	5%	No
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	19	9.80	19.0	9.80	19.0	19	-	-	-	-	0	0%	No
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	19	1.20	1.20	9.80	10.0	19	-	-	-	-	0	0%	No
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	19	2.90	2.90	9.80	10.0	13	3	3	4.80	21.0	6	32%	No
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	19	1.00	1.00	9.80	10.0	19	-	-	-	-	0	0%	No
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	19	1.40	1.40	9.80	10.0	14	5	-	1.50	2.70	5	26%	No
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	19	1.70	1.70	9.80	10.0	19	-	-	-	-	0	0%	No
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	19	1.30	1.30	9.80	10.0	5	14	-	1.40	7.40	14	74%	No
Sediment	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	ug/kg	Dry	19	-	-	-	-	-	-	-	5.50	12.0	14	74%	No
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	19	1.40	1.40	9.80	10.0	7	11	1	1.60	12.0	12	63%	No
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	19	1.60	1.60	9.80	10.0	8	11	-	1.70	7.50	11	58%	No
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	19	2.50	2.50	9.80	10.0	10	9	-	4.00	9.10	9	47%	No
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	19	2.30	2.30	9.80	10.0	10	9	-	2.60	6.20	9	47%	No
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	19	2.50	2.50	9.80	10.0	14	5	-	2.50	4.90	5	26%	No
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	19	1.40	1.40	9.80	10.0	3	14	2	1.40	20.0	16	84%	No
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	19	2.20	2.20	9.80	10.0	19	-	-	-	-	0	0%	No
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	19	2.20	2.20	9.80	10.0	4	13	2	2.50	12.0	15	79%	No
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	19	1.90	1.90	9.80	10.0	10	9	-	2.20	5.70	9	47%	No
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	19	1.30	1.30	9.80	10.0	3	13	3	1.80	17.0	16	84%	No
Sediment	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	ug/kg	Dry	19	-	-	-	-	-	-	-	15.4	73.9	16	84%	No
Sediment	SVOCs	Total	Total PAHs (KM, capped; NDs at MDL)	ug/kg	Dry	19	-	-	-	-	-	-	-	16.6	83.4	16	84%	No
Crayfish	Metals	Total	Aluminum	mg/kg	Wet	17	-	-	-	-	0	-	17	71.4	157	17	100%	No
Crayfish	Metals	Total	Antimony	mg/kg	Wet	17	-	-	0.0120	0.0130	0	4	13	0.00900	0.133	17	100%	No
Crayfish	Metals	Total	Arsenic	mg/kg	Wet	17	-	-	-	-	0	-	17	0.380	0.680	17	100%	No
Crayfish	Metals	Total	Barium	mg/kg	Wet	17	-	-	-	-	0	-	17	51.7	84.3	17	100%	No
Crayfish	Metals	Total	Beryllium	mg/kg	Wet	17	-	-	0.00420	0.00630	0	17	-	0.00170	0.00410	17	100%	No
Crayfish	Metals	Total	Cadmium	mg/kg	Wet	17	-	-	-	-	0	-	17	0.0610	0.210	17	100%	No
Crayfish	Metals	Total	Chromium	mg/kg	Wet	17	-	-	0.3	0.3	0	1	16	0.200	1.20	17	100%	No
Crayfish	Metals	Total	Cobalt	mg/kg	Wet	17	-	-	-	-	0	-	17	0.192	0.262	17	100%	No
Crayfish	Metals	Total	Copper	mg/kg	Wet	17	-	-	-	-	0	-	17	10.5	36.0	17	100%	No
Crayfish	Metals	Total	Lead	mg/kg	Wet	17	-	-	-	-	0	-	17	0.0980	2.66	17	100%	No
Crayfish	Metals	Total	Mercury	mg/kg	Wet	17	-	-	-	-	0	-	17	0.0157	0.0315	17	100%	No
Crayfish	Metals	Total	Methyl Mercury	mg/kg	Wet	17	-	-	-	-	0	-	17	0.0250	0.0400	17	100%	No
Crayfish	Metals	Total	Nickel	mg/kg	Wet	17	-	-	-	-	0	-	17	4.31	5.35	17	100%	No
Crayfish	Metals	Total	Thallium	mg/kg	Wet	17	-	-	-	-	0	-	17	0.0117	0.0292	17	100%	No
Crayfish	Metals	Total	Vanadium	mg/kg	Wet	17	-	-	-	-	0	-	17	0.300	0.600	17	100%	No
Crayfish	Metals	Total	Zinc	mg/kg	Wet	17	-	-	-	-	0	-	17	16.9	23.2	17	100%	No
Crayfish	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	17	2.40	2.40	9.60	10.0	17	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	17	2.60	2.60	20.0	20.0	17	-	-	-	-	0	0%	No

Table I-8a
Data Summary for Random Forebay Samples
Bradford Island - River Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Crayfish	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	17	2.30	2.30	9.60	10.0	17	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	17	2.20	2.20	9.60	10.0	17	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	17	0.510	0.510	9.60	10.0	17	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	17	1.80	19.0	9.60	19.0	17	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	17	1.90	17.0	9.60	17.0	17	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	17	2.50	10.0	9.60	10.0	17	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	17	2.00	2.00	9.60	10.0	17	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Wet	17	-	-	-	-	-	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Acenaphthene	ug/kg	Wet	15	0.110	0.110	0.460	0.500	8	7	-	0.110	0.260	7	47%	No
Crayfish	SVOCs	Total	Anthracene	ug/kg	Wet	15	0.0650	0.0650	0.460	0.500	11	4	-	0.0690	0.160	4	27%	No
Crayfish	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	15	0.0660	0.0660	0.460	0.500	5	10	-	0.230	0.350	10	67%	No
Crayfish	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	15	0.0810	0.0810	0.460	0.500	12	3	-	0.120	0.170	3	20%	No
Crayfish	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	15	0.0700	0.0700	0.460	0.500	8	7	-	0.0960	0.240	7	47%	No
Crayfish	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	15	0.0730	0.0730	0.460	0.500	11	4	-	0.0980	0.390	4	27%	No
Crayfish	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	15	0.0560	0.0560	0.460	0.500	8	7	-	0.0860	0.160	7	47%	No
Crayfish	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	15	66.0	66.0	180	200	11	4	-	67.0	110	4	27%	No
Crayfish	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	15	7.30	7.30	35.0	40.0	15	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Carbazole	ug/kg	Wet	15	9.10	9.10	35.0	40.0	15	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Chrysene	ug/kg	Wet	15	0.0760	0.0760	0.460	0.500	7	8	-	0.0820	0.310	8	53%	No
Crayfish	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	15	0.0590	0.0590	0.460	0.500	15	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	15	16.0	180	35.0	180	15	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	15	11.0	11.0	35.0	40.0	15	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Fluoranthene	ug/kg	Wet	15	-	-	0.460	0.500	0	12	3	0.170	0.750	15	100%	No
Crayfish	SVOCs	Total	Fluorene	ug/kg	Wet	15	0.150	0.150	0.460	0.500	10	5	-	0.150	0.210	5	33%	No
Crayfish	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	15	0.0640	0.0640	0.460	0.500	12	3	-	0.160	0.180	3	20%	No
Crayfish	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	15	7.70	7.70	35.0	40.0	15	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Phenanthrene	ug/kg	Wet	15	0.360	0.360	0.460	0.500	5	4	6	0.420	0.860	10	67%	No
Crayfish	SVOCs	Total	Pyrene	ug/kg	Wet	15	-	-	0.460	0.500	0	14	1	0.160	1.20	15	100%	No
Largescale Sucker	Metals	Total	Aluminum	mg/kg	Wet	1	-	-	-	-	0	-	1	19.7	19.7	1	100%	Yes
Largescale Sucker	Metals	Total	Antimony	mg/kg	Wet	1	0.00600	0.00600	0.0160	0.0160	1	-	-	-	-	0	0%	Yes
Largescale Sucker	Metals	Total	Arsenic	mg/kg	Wet	1	-	-	-	-	0	-	1	0.350	0.350	1	100%	Yes
Largescale Sucker	Metals	Total	Barium	mg/kg	Wet	1	-	-	-	-	0	-	1	1.92	1.92	1	100%	Yes
Largescale Sucker	Metals	Total	Beryllium	mg/kg	Wet	1	0.000600	0.000600	0.00640	0.00640	1	-	-	-	-	0	0%	Yes
Largescale Sucker	Metals	Total	Cadmium	mg/kg	Wet	1	-	-	-	-	0	-	1	0.0420	0.0420	1	100%	Yes
Largescale Sucker	Metals	Total	Chromium	mg/kg	Wet	1	-	-	-	-	0	-	1	0.480	0.480	1	100%	Yes
Largescale Sucker	Metals	Total	Cobalt	mg/kg	Wet	1	-	-	-	-	0	-	1	0.0775	0.0775	1	100%	Yes
Largescale Sucker	Metals	Total	Copper	mg/kg	Wet	1	-	-	-	-	0	-	1	0.728	0.728	1	100%	Yes
Largescale Sucker	Metals	Total	Lead	mg/kg	Wet	1	-	-	-	-	0	-	1	0.0440	0.0440	1	100%	Yes
Largescale Sucker	Metals	Total	Mercury	mg/kg	Wet	1	-	-	-	-	0	-	1	0.139	0.139	1	100%	Yes
Largescale Sucker	Metals	Total	Nickel	mg/kg	Wet	1	-	-	-	-	0	-	1	0.343	0.343	1	100%	Yes
Largescale Sucker	Metals	Total	Thallium	mg/kg	Wet	1	-	-	0.0064	0.0064	0	1	-	0.00560	0.00560	1	100%	Yes
Largescale Sucker	Metals	Total	Vanadium	mg/kg	Wet	1	-	-	-	-	0	-	1	0.170	0.170	1	100%	Yes
Largescale Sucker	Metals	Total	Zinc	mg/kg	Wet	1	-	-	-	-	0	-	1	17.5	17.5	1	100%	Yes
Largescale Sucker	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	1	2.40	2.40	10.0	10.0	1	-	-	-	-	0	0%	Yes
Largescale Sucker	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	1	2.60	2.60	20.0	20.0	1	-	-	-	-	0	0%	Yes
Largescale Sucker	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	1	2.30	2.30	10.0	10.0	1	-	-	-	-	0	0%	Yes
Largescale Sucker	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	1	2.20	2.20	10.0	10.0	1	-	-	-	-	0	0%	Yes
Largescale Sucker	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	1	0.510	0.510	10.0	10.0	1	-	-	-	-	0	0%	Yes
Largescale Sucker	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	1	-	-	-	-	0	-	1	160	160	1	100%	Yes
Largescale Sucker	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	1	1.90	1.90	10.0	10.0	1	-	-	-	-	0	0%	Yes

Table I-8a
Data Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(5 of 7)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Largescale Sucker	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	1	2.00	2.00	10.0	10.0	1	-	-	-	-	0	0%	Yes
Largescale Sucker	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Wet	1	-	-	-	-	-	-	-	160	160	1	100%	Yes
Largescale Sucker	SVOCs	Total	Acenaphthene	ug/kg	Wet	1	1.10	1.10	4.60	4.60	1	-	-	-	-	0	0%	Yes
Largescale Sucker	SVOCs	Total	Anthracene	ug/kg	Wet	1	-	-	4.60	4.60	0	1	-	4.50	4.50	1	100%	Yes
Largescale Sucker	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	1	0.660	0.660	4.60	4.60	1	-	-	-	-	0	0%	Yes
Largescale Sucker	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	1	-	-	-	-	0	-	1	6.30	6.30	1	100%	Yes
Largescale Sucker	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1	0.700	0.700	4.60	4.60	1	-	-	-	-	0	0%	Yes
Largescale Sucker	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	1	-	-	4.60	4.60	0	1	-	2.00	2.00	1	100%	Yes
Largescale Sucker	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	1	-	-	-	-	0	-	1	11.0	11.0	1	100%	Yes
Largescale Sucker	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	1	66.0	66.0	180	180	1	-	-	-	-	0	0%	Yes
Largescale Sucker	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	1	7.30	7.30	35.0	35.0	1	-	-	-	-	0	0%	Yes
Largescale Sucker	SVOCs	Total	Carbazole	ug/kg	Wet	1	9.10	9.10	35.0	35.0	1	-	-	-	-	0	0%	Yes
Largescale Sucker	SVOCs	Total	Chrysene	ug/kg	Wet	1	0.760	0.760	4.60	4.60	1	-	-	-	-	0	0%	Yes
Largescale Sucker	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	1	-	-	4.60	4.60	0	1	-	3.70	3.70	1	100%	Yes
Largescale Sucker	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	1	16.0	16.0	35.0	35.0	1	-	-	-	-	0	0%	Yes
Largescale Sucker	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	1	11.0	11.0	35.0	35.0	1	-	-	-	-	0	0%	Yes
Largescale Sucker	SVOCs	Total	Fluoranthene	ug/kg	Wet	1	-	-	-	-	0	-	1	5.90	5.90	1	100%	Yes
Largescale Sucker	SVOCs	Total	Fluorene	ug/kg	Wet	1	1.50	1.50	4.60	4.60	1	-	-	-	-	0	0%	Yes
Largescale Sucker	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	1	-	-	-	-	0	-	1	6.50	6.50	1	100%	Yes
Largescale Sucker	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	1	7.70	7.70	35.0	35.0	1	-	-	-	-	0	0%	Yes
Largescale Sucker	SVOCs	Total	Phenanthrene	ug/kg	Wet	1	-	-	4.60	4.60	0	1	-	3.80	3.80	1	100%	Yes
Largescale Sucker	SVOCs	Total	Pyrene	ug/kg	Wet	1	-	-	-	-	0	-	1	7.40	7.40	1	100%	Yes
Smallmouth Bass	Metals	Total	Aluminum	mg/kg	Wet	19	-	-	-	-	0	-	19	1.06	15.5	19	100%	No
Smallmouth Bass	Metals	Total	Antimony	mg/kg	Wet	19	0.00500	0.00600	0.0120	0.0150	19	-	-	-	-	0	0%	No
Smallmouth Bass	Metals	Total	Arsenic	mg/kg	Wet	19	-	-	-	-	0	-	19	0.170	0.700	19	100%	No
Smallmouth Bass	Metals	Total	Barium	mg/kg	Wet	19	-	-	-	-	0	-	19	0.720	2.64	19	100%	No
Smallmouth Bass	Metals	Total	Beryllium	mg/kg	Wet	19	0.000500	0.000600	0.00480	0.00590	15	4	-	0.000500	0.000700	4	21%	No
Smallmouth Bass	Metals	Total	Cadmium	mg/kg	Wet	19	-	-	0.005	0.006	0	4	15	0.00400	0.0280	19	100%	No
Smallmouth Bass	Metals	Total	Chromium	mg/kg	Wet	19	0.120	0.150	0.240	0.300	14	2	3	0.190	0.860	5	26%	No
Smallmouth Bass	Metals	Total	Cobalt	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0441	0.0758	19	100%	No
Smallmouth Bass	Metals	Total	Copper	mg/kg	Wet	19	-	-	-	-	0	-	19	0.364	1.42	19	100%	No
Smallmouth Bass	Metals	Total	Lead	mg/kg	Wet	19	-	-	0.005	0.006	0	3	16	0.00400	0.0360	19	100%	No
Smallmouth Bass	Metals	Total	Mercury	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0710	0.512	19	100%	No
Smallmouth Bass	Metals	Total	Nickel	mg/kg	Wet	19	-	-	-	-	0	-	19	0.213	0.399	19	100%	No
Smallmouth Bass	Metals	Total	Thallium	mg/kg	Wet	19	-	-	-	-	0	-	19	0.00790	0.0215	19	100%	No
Smallmouth Bass	Metals	Total	Vanadium	mg/kg	Wet	19	-	-	0.05	0.06	0	7	12	0.0300	0.130	19	100%	No
Smallmouth Bass	Metals	Total	Zinc	mg/kg	Wet	19	-	-	-	-	0	-	19	11.4	18.0	19	100%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	19	2.40	240	9.90	1,000	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	19	2.60	260	20.0	2,000	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	19	2.30	230	9.90	1,000	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	19	2.20	220	9.90	1,000	18	-	1	260	260	1	5%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	19	0.510	68.0	9.90	1,000	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	19	11.0	420	11.0	420	12	-	7	51.0	18,000	7	37%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	19	1.90	300	10.0	1,000	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	19	2.50	250	10.0	1,000	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	19	2.00	200	9.90	1,000	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Wet	19	-	-	-	-	-	-	-	53.2	18110	7	37%	No
Smallmouth Bass	SVOCs	Total	Acenaphthene	ug/kg	Wet	19	0.110	0.110	0.460	5.00	3	16	-	0.160	1.60	16	84%	No
Smallmouth Bass	SVOCs	Total	Anthracene	ug/kg	Wet	19	0.0650	0.0650	0.460	2.50	1	14	4	0.0780	17.0	18	95%	No
Smallmouth Bass	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	19	0.0660	0.660	0.460	5.00	14	-	5	1.00	17.0	5	26%	No

Table I-8a
Data Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(6 of 7)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Smallmouth Bass	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	19	0.0810	0.0810	0.460	1.00	11	3	5	0.720	7.40	8	42%	No
Smallmouth Bass	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	19	0.0700	0.140	0.460	5.00	13	6	-	0.110	4.40	6	32%	No
Smallmouth Bass	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	19	0.0730	0.150	0.460	5.00	13	6	-	0.420	3.30	6	32%	No
Smallmouth Bass	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	19	0.0560	0.0560	0.460	0.490	10	1	8	0.110	7.70	9	47%	No
Smallmouth Bass	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	19	66.0	5,000	170	5,000	12	5	2	89.0	1,600	7	37%	No
Smallmouth Bass	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	19	7.30	7.30	34.0	40.0	17	1	1	33.0	440	2	11%	No
Smallmouth Bass	SVOCs	Total	Carbazole	ug/kg	Wet	19	9.10	9.10	34.0	40.0	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	Chrysene	ug/kg	Wet	19	0.0760	0.0760	0.460	5.00	11	7	1	0.500	10.0	8	42%	No
Smallmouth Bass	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	19	0.0590	0.120	0.460	5.00	13	6	-	0.410	4.10	6	32%	No
Smallmouth Bass	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	19	16.0	71.0	34.0	71.0	18	-	1	150	150	1	5%	No
Smallmouth Bass	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	19	11.0	11.0	34.0	40.0	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	Fluoranthene	ug/kg	Wet	19	0.0900	0.0900	0.460	1.00	9	2	8	0.490	6.50	10	53%	No
Smallmouth Bass	SVOCs	Total	Fluorene	ug/kg	Wet	19	0.150	0.150	0.460	5.00	2	12	5	0.300	4.70	17	89%	No
Smallmouth Bass	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	19	0.0640	0.130	0.460	1.00	12	2	5	0.700	6.10	7	37%	No
Smallmouth Bass	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	19	7.70	7.70	34.0	40.0	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	Phenanthrene	ug/kg	Wet	19	-	-	1.00	4.80	0	3	16	0.540	5.70	19	100%	No
Smallmouth Bass	SVOCs	Total	Pyrene	ug/kg	Wet	19	0.0980	0.490	0.460	2.50	10	5	4	0.110	7.20	9	47%	No
Sculpin	Metals	Total	Arsenic	mg/kg	Wet	17	-	-	-	-	0	-	17	0.184	0.435	17	100%	No
Sculpin	Metals	Total	Cadmium	mg/kg	Wet	17	-	-	-	-	0	-	17	0.00720	0.0453	17	100%	No
Sculpin	Metals	Total	Lead	mg/kg	Wet	17	0.0214	0.0214	0.0214	0.0214	1	-	16	0.0313	0.306	16	94%	No
Sculpin	Metals	Total	Mercury	mg/kg	Wet	17	-	-	-	-	0	-	17	0.0327	0.308	17	100%	No
Sculpin	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	17	2.40	14.0	9.20	50.0	17	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	17	2.60	69.0	19.0	99.0	17	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	17	2.30	62.0	9.20	62.0	17	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	17	2.20	35.0	9.20	50.0	17	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	17	0.510	13.0	9.20	50.0	17	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	17	13.0	130	13.0	130	14	-	3	130	1,700	3	18%	No
Sculpin	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	17	1.90	82.0	9.20	82.0	17	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	17	2.50	13.0	9.20	50.0	17	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	17	2.00	10.0	9.20	50.0	17	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Wet	17	-	-	-	-	-	-	-	130	1,700	3	18%	No
Clam	Metals	Total	Aluminum	mg/kg	Wet	19	-	-	-	-	0	-	19	9.37	83.2	19	100%	No
Clam	Metals	Total	Antimony	mg/kg	Wet	19	0.00200	0.00500	0.00700	0.0120	14	5	-	0.00200	0.00700	5	26%	No
Clam	Metals	Total	Arsenic	mg/kg	Wet	19	-	-	-	-	0	-	19	1.79	2.49	19	100%	No
Clam	Metals	Total	Barium	mg/kg	Wet	19	-	-	-	-	0	-	19	1.18	3.05	19	100%	No
Clam	Metals	Total	Beryllium	mg/kg	Wet	19	-	-	0.00280	0.00460	0	19	-	0.000700	0.00380	19	100%	No
Clam	Metals	Total	Cadmium	mg/kg	Wet	19	-	-	-	-	0	-	19	0.286	0.461	19	100%	No
Clam	Metals	Total	Chromium	mg/kg	Wet	19	-	-	-	-	0	-	19	0.300	0.900	19	100%	No
Clam	Metals	Total	Cobalt	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0670	0.148	19	100%	No
Clam	Metals	Total	Copper	mg/kg	Wet	19	-	-	-	-	0	-	19	7.00	11.4	19	100%	No
Clam	Metals	Total	Lead	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0210	0.0890	19	100%	No
Clam	Metals	Total	Mercury	mg/kg	Wet	19	-	-	-	-	0	-	19	0.00580	0.0341	19	100%	No
Clam	Metals	Total	Methyl Mercury	mg/kg	Wet	19	-	-	-	-	0	-	19	0.00350	0.00650	19	100%	No
Clam	Metals	Total	Nickel	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0950	0.348	19	100%	No
Clam	Metals	Total	Thallium	mg/kg	Wet	19	-	-	-	-	0	-	19	0.00450	0.0119	19	100%	No
Clam	Metals	Total	Vanadium	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0780	0.426	19	100%	No
Clam	Metals	Total	Zinc	mg/kg	Wet	19	-	-	-	-	0	-	19	16.3	26.5	19	100%	No
Clam	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	19	2.40	23.0	9.80	23.0	19	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	19	2.60	20.0	20.0	20.0	19	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	19	2.30	40.0	9.80	40.0	19	-	-	-	-	0	0%	No

Table I-8a
Data Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(7 of 7)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Clam	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	19	2.20	48.0	9.80	48.0	19	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	19	0.510	26.0	9.60	26.0	19	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	19	28.0	74.0	28.0	74.0	10	-	9	21.0	120	9	47%	No
Clam	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	19	1.90	11.0	9.60	11.0	19	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	19	2.50	2.50	9.60	10.0	19	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	19	2.00	2.00	9.60	10.0	19	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Wet	19	-	-	-	-	-	-	-	21.0	120	9	47%	No
Clam	SVOCs	Total	Acenaphthene	ug/kg	Wet	19	0.110	0.110	0.490	0.500	1	2	16	0.420	4.10	18	95%	No
Clam	SVOCs	Total	Anthracene	ug/kg	Wet	19	0.0650	0.330	0.470	2.50	4	8	7	0.280	2.30	15	79%	No
Clam	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	19	0.0660	22.0	0.470	22.0	11	-	8	0.480	2.10	8	42%	No
Clam	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	19	0.0810	0.860	0.470	2.50	16	2	1	0.380	0.580	3	16%	No
Clam	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	19	0.0700	0.800	0.480	2.50	10	1	8	0.400	0.950	9	47%	No
Clam	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	19	0.0730	2.50	0.470	2.50	11	8	-	0.0900	0.360	8	42%	No
Clam	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	19	0.0560	0.580	0.470	2.50	17	2	-	0.160	0.250	2	11%	No
Clam	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	19	-	-	180	280	0	11	8	67.0	890	19	100%	No
Clam	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	19	7.30	11.0	36.0	56.0	16	3	-	13.0	15.0	3	16%	No
Clam	SVOCs	Total	Carbazole	ug/kg	Wet	19	9.10	13.0	36.0	56.0	19	-	-	-	-	0	0%	No
Clam	SVOCs	Total	Chrysene	ug/kg	Wet	19	0.0760	7.80	0.470	7.80	11	-	8	1.90	4.00	8	42%	No
Clam	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	19	0.0590	0.500	0.470	2.50	19	-	-	-	-	0	0%	No
Clam	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	19	16.0	56.0	36.0	56.0	19	-	-	-	-	0	0%	No
Clam	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	19	11.0	16.0	36.0	56.0	18	1	-	38.0	38.0	1	5%	No
Clam	SVOCs	Total	Fluoranthene	ug/kg	Wet	19	8.60	16.0	8.60	16.0	5	-	14	6.30	16.0	14	74%	No
Clam	SVOCs	Total	Fluorene	ug/kg	Wet	19	-	-	-	-	0	-	19	0.920	3.80	19	100%	No
Clam	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	19	0.0640	0.500	0.470	2.50	13	5	1	0.0800	2.50	6	32%	No
Clam	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	19	7.70	11.0	36.0	56.0	9	10	-	8.60	31.0	10	53%	No
Clam	SVOCs	Total	Phenanthrene	ug/kg	Wet	19	-	-	-	-	0	-	19	4.50	15.0	19	100%	No
Clam	SVOCs	Total	Pyrene	ug/kg	Wet	19	0.0980	7.20	0.470	7.20	12	-	7	1.60	6.30	7	37%	No

Notes
% = percent
Dry = Dry weight
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
Max = maximum
MDL = method detection limit
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
Min = minimum
MRL = methode reporting limit
ND = non-detect
No. = number
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
Wet = Wet Weight

Table I-8b
PCB Congener Data Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(1 of 3)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Minimum RDL of NDs	Maximum RDL of NDs	Number of NDs below RDL	Minimum EMPC Value	Maximum EMPC Value	Number of EMPC Results	Minimum Detected (not ND or EMPC)	Maximum Detected (not ND or EMPC)	Number of Detections (not ND or EMPC)	Detection Rate	Limited Data Set (<8 Samples)
Surface Water	Column	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet	5	0.0290	0.0330	3	0.0480	0.0770	2	-	-	0	0%	Yes
Surface Water	Filter	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet	5	0.0310	0.0390	2	-	-	-	0.0460	0.0560	3	60%	Yes
Surface Water	C+F	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet	5	0.0640	0.0870	-	-	-	-	0.0790	0.133	3	60%	Yes
Surface Water	Column	81	3,4,4',5-Tetrachlorobiphenyl	pg/L	Wet	5	0.00590	0.00980	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	81	3,4,4',5-Tetrachlorobiphenyl	pg/L	Wet	5	0.00450	0.00840	5	-	-	-	-	-	0	0%	Yes
Surface Water	C+F	81	3,4,4',5-Tetrachlorobiphenyl	pg/L	Wet	5	0.0111	0.0160	-	-	-	-	-	-	0	0%	Yes
Surface Water	Column	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.114	0.163	5	100%	Yes
Surface Water	Filter	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.221	0.421	5	100%	Yes
Surface Water	C+F	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.340	0.540	5	100%	Yes
Surface Water	Column	114	2,3,4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	0.00800	0.0150	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	114	2,3,4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	0.0170	0.0250	5	-	-	-	-	-	0	0%	Yes
Surface Water	C+F	114	2,3,4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	0.0290	0.0360	-	-	-	-	-	-	0	0%	Yes
Surface Water	Column	118	2,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.325	0.499	5	100%	Yes
Surface Water	Filter	118	2,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.518	1.07	5	100%	Yes
Surface Water	C+F	118	2,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.878	1.57	5	100%	Yes
Surface Water	Column	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/L	Wet	5	0.00370	0.00700	3	0.00900	0.0100	2	-	-	0	0%	Yes
Surface Water	Filter	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/L	Wet	5	0.0130	0.0230	5	-	-	-	-	-	0	0%	Yes
Surface Water	C+F	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/L	Wet	5	0.0200	0.0330	-	-	-	-	-	-	0	0%	Yes
Surface Water	Column	126	3,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	0.00420	0.00600	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	126	3,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	0.00410	0.0112	5	-	-	-	-	-	0	0%	Yes
Surface Water	C+F	126	3,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	0.00950	0.0154	-	-	-	-	-	-	0	0%	Yes
Surface Water	Column	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet	5	0.0230	0.0280	4	-	-	-	0.0360	0.0360	1	20%	Yes
Surface Water	Filter	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.0850	0.359	5	100%	Yes
Surface Water	C+F	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.111	0.382	5	100%	Yes
Surface Water	Column	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	0.0140	0.0140	1	0.0110	0.0110	1	0.0100	0.0140	3	60%	Yes
Surface Water	Filter	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.0330	0.148	5	100%	Yes
Surface Water	C+F	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.0470	0.158	5	100%	Yes
Surface Water	Column	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	0.00140	0.00290	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	0.00170	0.00880	5	-	-	-	-	-	0	0%	Yes
Surface Water	C+F	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	0.00420	0.0109	-	-	-	-	-	-	0	0%	Yes
Surface Water	Column	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/L	Wet	5	0.00180	0.00400	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/L	Wet	5	0.00600	0.00800	3	0.0900	0.0900	1	0.0640	0.0640	1	20%	Yes
Surface Water	C+F	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/L	Wet	5	0.00820	0.0925	-	-	-	-	0.0662	0.0662	1	20%	Yes
Surface Water	Column		Total PCBs As Congeners (KM, capped)	pg/L	Wet	5	-	-	-	-	-	-	95.7	154	5	100%	Yes
Surface Water	Filter		Total PCBs As Congeners (KM, capped)	pg/L	Wet	5	-	-	-	-	-	-	14.7	61.2	5	100%	Yes
Surface Water	C+F		Total PCBs As Congeners (KM, capped)	pg/L	Wet	5	-	-	-	-	-	-	112	209	5	100%	Yes
Sediment	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Dry	19	-	-	-	-	-	-	0.209	7.09	19	100%	No
Sediment	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Dry	19	0.0486	0.140	15	0.103	3.40	4	-	-	0	0%	No
Sediment	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Dry	19	-	-	-	-	-	-	1.30	1,080	19	100%	No
Sediment	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Dry	19	-	-	-	0.0580	1.71	4	0.174	60.3	15	79%	No
Sediment	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	19	-	-	-	-	-	-	2.71	2,650	19	100%	No
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	19	0.158	0.201	2	0.0640	1.90	6	0.459	36.3	11	58%	No
Sediment	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	19	0.0479	2.69	8	0.123	0.296	8	0.173	0.238	3	16%	No

Table I-8b
PCB Congener Data Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(2 of 3)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Minimum RDL of NDs	Maximum RDL of NDs	Number of NDs below RDL	Minimum EMPC Value	Maximum EMPC Value	Number of EMPC Results	Minimum Detected (not ND or EMPC)	Maximum Detected (not ND or EMPC)	Number of Detections (not ND or EMPC)	Detection Rate	Limited Data Set (<8 Samples)
Sediment	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Dry	19	0.935	0.935	1	-	-	-	0.399	380	18	95%	No
Sediment	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	19	0.640	0.710	2	0.173	0.173	1	0.461	113	16	84%	No
Sediment	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	19	0.0454	0.879	18	0.161	0.161	1	-	-	0	0%	No
Sediment	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Dry	19	0.0479	0.814	2	0.127	0.620	8	0.0980	9.01	9	47%	No
Sediment	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Dry	19	-	-	-	-	-	-	0.0611	29.7	19	100%	No
Crayfish	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	15	-	-	-	-	-	-	1.57	20.7	15	100%	No
Crayfish	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	15	0.125	0.361	8	0.239	0.823	3	0.211	1.32	4	27%	No
Crayfish	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	15	-	-	-	3.67	86.3	3	6.36	134	12	80%	No
Crayfish	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	15	-	-	-	2.61	2.61	1	2.14	804	14	93%	No
Crayfish	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	15	-	-	-	-	-	-	82.4	14,000	15	100%	No
Crayfish	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	15	-	-	-	3.11	3.11	1	2.11	460	14	93%	No
Crayfish	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	15	0.397	3.51	8	-	-	-	0.238	7.83	7	47%	No
Crayfish	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	15	-	-	-	-	-	-	13.6	3,910	15	100%	No
Crayfish	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	15	-	-	-	-	-	-	8.53	1,530	15	100%	No
Crayfish	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	15	0.167	2.95	15	-	-	-	-	-	0	0%	No
Crayfish	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	15	-	-	-	1.09	1.62	3	0.923	82.1	12	80%	No
Crayfish	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	15	-	-	-	-	-	-	0.536	42.6	15	100%	No
Largescale Sucker	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	110	110	1	100%	Yes
Largescale Sucker	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	9.02	9.02	1	100%	Yes
Largescale Sucker	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	4,350	4,350	1	100%	Yes
Largescale Sucker	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	289	289	1	100%	Yes
Largescale Sucker	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	10,300	10,300	1	100%	Yes
Largescale Sucker	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	179	179	1	100%	Yes
Largescale Sucker	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	19.1	19.1	1	100%	Yes
Largescale Sucker	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	1,770	1,770	1	100%	Yes
Largescale Sucker	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	565	565	1	100%	Yes
Largescale Sucker	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	11.1	11.1	1	100%	Yes
Largescale Sucker	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	78.0	78.0	1	100%	Yes
Largescale Sucker	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	1	-	-	-	-	-	-	201	201	1	100%	Yes
Smallmouth Bass	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	21.7	8,950	19	100%	No
Smallmouth Bass	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	19	6.15	23.1	2	-	-	-	1.21	1,190	17	89%	No
Smallmouth Bass	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	717	1,300,000	19	100%	No
Smallmouth Bass	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	59.4	89,800	19	100%	No
Smallmouth Bass	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	2,420	3,270,000	19	100%	No
Smallmouth Bass	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	32.3	55,300	19	100%	No
Smallmouth Bass	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	19	48.0	48.0	1	-	-	-	5.05	3,030	18	95%	No
Smallmouth Bass	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	541	486,000	19	100%	No
Smallmouth Bass	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	161	140,000	19	100%	No
Smallmouth Bass	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	19	1.29	607	19	-	-	-	-	-	0	0%	No
Smallmouth Bass	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	21.6	10,100	19	100%	No
Smallmouth Bass	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	19	-	-	-	-	-	-	32.1	26,505	19	100%	No
Sculpin	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	4.31	443	17	100%	No

Table I-8b
PCB Congener Data Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(3 of 3)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Minimum RDL of NDs	Maximum RDL of NDs	Number of NDs below RDL	Minimum EMPC Value	Maximum EMPC Value	Number of EMPC Results	Minimum Detected (not ND or EMPC)	Maximum Detected (not ND or EMPC)	Number of Detections (not ND or EMPC)	Detection Rate	Limited Data Set (<8 Samples)
Sculpin	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	17	0.225	295	11	0.382	0.846	5	1.45	1.45	1	6%	No
Sculpin	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	303	269,000	17	100%	No
Sculpin	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	21.2	19,900	17	100%	No
Sculpin	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	870	757,000	17	100%	No
Sculpin	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	12.8	12.8	1	19.6	11,800	16	94%	No
Sculpin	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	405	405	1	2.39	54.0	16	94%	No
Sculpin	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	123	118,000	17	100%	No
Sculpin	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	43.2	30,800	17	100%	No
Sculpin	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	17	1.45	164	16	-	-	-	3.65	3.65	1	6%	No
Sculpin	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	5.86	2,480	17	100%	No
Sculpin	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	17	-	-	-	-	-	-	9.87	4773	17	100%	No
Clam	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	26.9	69.0	17	100%	No
Clam	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	17	-	-	-	0.693	3.30	13	1.94	2.46	4	24%	No
Clam	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	361	6,200	17	100%	No
Clam	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	20.2	445	17	100%	No
Clam	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	2,050	64,700	17	100%	No
Clam	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	38.4	1,150	17	100%	No
Clam	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	3.37	11.0	17	100%	No
Clam	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	120	3,610	17	100%	No
Clam	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	125	3,800	17	100%	No
Clam	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	17	0.901	16.5	17	-	-	-	-	-	0	0%	No
Clam	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	1.52	10.1	17	100%	No
Clam	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	17	-	-	-	-	-	-	24.5	312	17	100%	No

Notes
For C+F RDL values, the values shown are the sum of the RDLs and/or EMPCs for the ND column and filter results.

% = percent
Dry = Dry weight
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
ND = non-detect
PCB = polychlorinated biphenyl
pg/kg = picograms per kilogram
pg/L = picograms per liter
RDL = reported detection limit
Wet = Wet Weight

Table I-9a
Data Summary for Targeted Forebay Samples
Bradford Island - River Operable Unit
(1 of 5)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Forebay - Eagle Creek																		
Sediment	Metals	Total	Aluminum	mg/kg	Dry	2	-	-	-	-	0	-	2	16,300	18,000	2	100%	Yes
Sediment	Metals	Total	Antimony	mg/kg	Dry	2	-	-	0.0500	0.0500	0	1	1	0.0400	0.0800	2	100%	Yes
Sediment	Metals	Total	Arsenic	mg/kg	Dry	2	-	-	-	-	0	-	2	0.680	3.23	2	100%	Yes
Sediment	Metals	Total	Barium	mg/kg	Dry	2	-	-	-	-	0	-	2	74.4	110	2	100%	Yes
Sediment	Metals	Total	Beryllium	mg/kg	Dry	2	-	-	-	-	0	-	2	0.353	0.371	2	100%	Yes
Sediment	Metals	Total	Cadmium	mg/kg	Dry	2	0.0750	0.131	0.0750	0.131	2	-	-	-	-	0	0%	Yes
Sediment	Metals	Total	Chromium	mg/kg	Dry	2	-	-	-	-	0	-	2	20.2	23.5	2	100%	Yes
Sediment	Metals	Total	Cobalt	mg/kg	Dry	2	-	-	-	-	0	-	2	9.93	11.0	2	100%	Yes
Sediment	Metals	Total	Copper	mg/kg	Dry	2	-	-	-	-	0	-	2	16.6	24.8	2	100%	Yes
Sediment	Metals	Total	Lead	mg/kg	Dry	2	-	-	-	-	0	-	2	4.19	10.9	2	100%	Yes
Sediment	Metals	Total	Mercury	mg/kg	Dry	2	-	-	0.016	0.016	0	1	1	0.00700	0.0290	2	100%	Yes
Sediment	Metals	Total	Nickel	mg/kg	Dry	2	-	-	-	-	0	-	2	15.6	19.9	2	100%	Yes
Sediment	Metals	Total	Thallium	mg/kg	Dry	2	0.0560	0.156	0.0560	0.156	2	-	-	-	-	0	0%	Yes
Sediment	Metals	Total	Vanadium	mg/kg	Dry	2	-	-	-	-	0	-	2	62.5	70.3	2	100%	Yes
Sediment	Metals	Total	Zinc	mg/kg	Dry	2	-	-	-	-	0	-	2	52.7	65.1	2	100%	Yes
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	2	-	-	15.0	15.0	0	2	-	2.90	13.0	2	100%	Yes
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	2	150	150	150	150	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	2	1.70	1.70	7.30	7.40	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	2	1.70	1.70	15.0	15.0	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	2	1.70	1.70	7.30	7.40	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	2	1.70	1.70	7.30	7.40	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	2	1.70	1.70	7.30	7.30	1	-	1	76.0	76.0	1	50%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	2	1.70	1.70	7.30	7.40	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	2	1.70	1.70	7.30	7.40	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	2	1.70	1.70	7.30	7.40	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	2	1.70	1.70	7.30	7.40	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Dry	2	-	-	-	-	-	-	-	77.7	77.7	1	50%	Yes
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	2	200	200	200	200	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	2	9.90	9.90	9.90	9.90	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	2	1.30	1.30	9.90	9.90	1	1	-	2.20	2.20	1	50%	Yes
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	2	9.90	11.0	9.90	11.0	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	2	1.20	1.20	9.90	9.90	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	2	2.90	2.90	9.90	9.90	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	2	1.00	1.00	9.90	9.90	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	2	1.40	1.40	9.90	9.90	1	1	-	2.60	2.60	1	50%	Yes
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	2	1.70	1.70	9.90	9.90	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	2	-	-	9.90	9.90	0	2	-	2.30	6.50	2	100%	Yes
Sediment	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	ug/kg	Dry	2	-	-	-	-	-	-	-	6.40	11.8	2	100%	Yes
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	2	1.40	1.40	9.90	9.90	1	1	-	6.60	6.60	1	50%	Yes
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	2	1.60	1.60	9.90	9.90	1	1	-	7.10	7.10	1	50%	Yes
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	2	2.50	2.50	9.90	9.90	1	-	1	11.0	11.0	1	50%	Yes
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	2	2.30	2.30	9.90	9.90	1	1	-	5.00	5.00	1	50%	Yes
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	2	2.50	2.50	9.90	9.90	1	1	-	3.40	3.40	1	50%	Yes
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	2	-	-	9.90	9.90	0	1	1	1.80	13.0	2	100%	Yes
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	2	2.20	2.20	9.90	9.90	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	2	2.20	2.20	9.90	9.90	1	-	1	11.0	11.0	1	50%	Yes
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	2	1.90	1.90	9.90	9.90	1	1	-	4.60	4.60	1	50%	Yes

Table I-9a
Data Summary for Targeted Forebay Samples
Bradford Island - River Operable Unit
(2 of 5)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	2	-	-	9.90	9.90	0	1	1	3.40	17.0	2	100%	Yes
Sediment	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	ug/kg	Dry	2	-	-	-	-	-	-	-	17.2	80.9	2	100%	Yes
Sediment	SVOCs	Total	Total PAHs (KM, capped; NDs at MDL)	ug/kg	Dry	2	-	-	-	-	-	-	-	19.5	90.8	2	100%	Yes
Forebay - Goose Island																		
Sediment	Metals	Total	Aluminum	mg/kg	Dry	2	-	-	-	-	0	-	2	17,100	18,800	2	100%	Yes
Sediment	Metals	Total	Antimony	mg/kg	Dry	2	-	-	-	-	0	-	2	0.440	0.580	2	100%	Yes
Sediment	Metals	Total	Arsenic	mg/kg	Dry	2	-	-	-	-	0	-	2	4.00	4.25	2	100%	Yes
Sediment	Metals	Total	Barium	mg/kg	Dry	2	-	-	-	-	0	-	2	112	131	2	100%	Yes
Sediment	Metals	Total	Beryllium	mg/kg	Dry	2	-	-	-	-	0	-	2	0.505	0.561	2	100%	Yes
Sediment	Metals	Total	Cadmium	mg/kg	Dry	2	-	-	-	-	0	-	2	0.887	1.17	2	100%	Yes
Sediment	Metals	Total	Chromium	mg/kg	Dry	2	-	-	-	-	0	-	2	20.6	21.6	2	100%	Yes
Sediment	Metals	Total	Cobalt	mg/kg	Dry	2	-	-	-	-	0	-	2	11.2	11.6	2	100%	Yes
Sediment	Metals	Total	Copper	mg/kg	Dry	2	-	-	-	-	0	-	2	32.6	34.2	2	100%	Yes
Sediment	Metals	Total	Lead	mg/kg	Dry	2	-	-	-	-	0	-	2	13.1	13.6	2	100%	Yes
Sediment	Metals	Total	Mercury	mg/kg	Dry	2	-	-	-	-	0	-	2	0.179	0.181	2	100%	Yes
Sediment	Metals	Total	Nickel	mg/kg	Dry	2	-	-	-	-	0	-	2	18.1	19.4	2	100%	Yes
Sediment	Metals	Total	Thallium	mg/kg	Dry	2	-	-	-	-	0	-	2	0.272	0.435	2	100%	Yes
Sediment	Metals	Total	Vanadium	mg/kg	Dry	2	-	-	-	-	0	-	2	59.3	61.5	2	100%	Yes
Sediment	Metals	Total	Zinc	mg/kg	Dry	2	-	-	-	-	0	-	2	115	148	2	100%	Yes
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	2	-	-	60.0	64.0	0	2	-	49.0	53.0	2	100%	Yes
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	2	-	-	-	-	0	-	2	410	480	2	100%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	2	2.50	2.70	12.0	13.0	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	2	2.50	2.70	24.0	26.0	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	2	2.50	2.70	12.0	13.0	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	2	2.50	2.70	12.0	13.0	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	2	2.50	2.70	12.0	13.0	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	2	2.50	2.50	12.0	13.0	1	1	-	9.90	9.90	1	50%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	2	2.50	2.70	12.0	13.0	2	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Dry	2	-	-	-	-	-	-	-	12.6	12.6	1	50%	Yes
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	2	-	-	120	130	0	2	-	9.90	13.0	2	100%	Yes
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	2	1.80	1.90	12.0	13.0	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	2	1.60	1.70	12.0	13.0	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	2	-	-	12.0	13.0	0	2	-	5.60	10.0	2	100%	Yes
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	2	1.50	1.60	12.0	13.0	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	2	3.70	3.70	12.0	13.0	1	1	-	8.50	8.50	1	50%	Yes
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	2	1.20	1.30	12.0	13.0	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	2	1.70	1.80	12.0	13.0	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	2	2.10	2.20	12.0	13.0	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	2	-	-	12.0	13.0	0	2	-	3.80	4.60	2	100%	Yes
Sediment	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	ug/kg	Dry	2	-	-	-	-	-	-	-	8.80	9.90	2	100%	Yes
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	2	-	-	12.0	13.0	0	2	-	4.20	7.80	2	100%	Yes
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	2	-	-	12.0	12.0	0	1	1	8.70	13.0	2	100%	Yes
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	2	-	-	12.0	12.0	0	1	1	6.50	15.0	2	100%	Yes
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	2	-	-	12.0	13.0	0	2	-	5.60	9.90	2	100%	Yes
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	2	3.00	3.00	12.0	13.0	1	1	-	4.10	4.10	1	50%	Yes
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	2	-	-	12.0	13.0	0	2	-	5.80	11.0	2	100%	Yes
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	2	2.70	2.80	12.0	13.0	2	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	2	-	-	12.0	13.0	0	2	-	7.30	9.60	2	100%	Yes

Table I-9a
Data Summary for Targeted Forebay Samples
Bradford Island - River Operable Unit
(3 of 5)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	2	-	-	12.0	13.0	0	2	-	5.00	7.10	2	100%	Yes
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	2	-	-	12.0	13.0	0	2	-	7.20	8.80	2	100%	Yes
Sediment	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	ug/kg	Dry	2	-	-	-	-	-	-	-	55.7	89.1	2	100%	Yes
Sediment	SVOCs	Total	Total PAHs (KM, capped; NDs at MDL)	ug/kg	Dry	2	-	-	-	-	-	-	-	60.1	96.1	2	100%	Yes
Crayfish	Metals	Total	Aluminum	mg/kg	Wet	1	-	-	-	-	0	-	1	147	147	1	100%	Yes
Crayfish	Metals	Total	Antimony	mg/kg	Wet	1	-	-	0.0120	0.0120	0	1	-	0.00800	0.00800	1	100%	Yes
Crayfish	Metals	Total	Arsenic	mg/kg	Wet	1	-	-	-	-	0	-	1	0.303	0.303	1	100%	Yes
Crayfish	Metals	Total	Barium	mg/kg	Wet	1	-	-	-	-	0	-	1	57.0	57.0	1	100%	Yes
Crayfish	Metals	Total	Beryllium	mg/kg	Wet	1	-	-	0.00500	0.00500	0	1	-	0.00400	0.00400	1	100%	Yes
Crayfish	Metals	Total	Cadmium	mg/kg	Wet	1	-	-	-	-	0	-	1	0.0769	0.0769	1	100%	Yes
Crayfish	Metals	Total	Chromium	mg/kg	Wet	1	-	-	-	-	0	-	1	0.190	0.190	1	100%	Yes
Crayfish	Metals	Total	Cobalt	mg/kg	Wet	1	-	-	-	-	0	-	1	0.391	0.391	1	100%	Yes
Crayfish	Metals	Total	Copper	mg/kg	Wet	1	-	-	-	-	0	-	1	15.5	15.5	1	100%	Yes
Crayfish	Metals	Total	Lead	mg/kg	Wet	1	-	-	-	-	0	-	1	0.471	0.471	1	100%	Yes
Crayfish	Metals	Total	Mercury	mg/kg	Wet	1	-	-	-	-	0	-	1	0.0359	0.0359	1	100%	Yes
Crayfish	Metals	Total	Nickel	mg/kg	Wet	1	-	-	-	-	0	-	1	1.21	1.21	1	100%	Yes
Crayfish	Metals	Total	Thallium	mg/kg	Wet	1	-	-	-	-	0	-	1	0.0128	0.0128	1	100%	Yes
Crayfish	Metals	Total	Vanadium	mg/kg	Wet	1	-	-	-	-	0	-	1	0.729	0.729	1	100%	Yes
Crayfish	Metals	Total	Zinc	mg/kg	Wet	1	-	-	-	-	0	-	1	20.3	20.3	1	100%	Yes
Crayfish	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	1	2.40	2.40	9.50	9.50	1	-	-	-	-	0	0%	Yes
Crayfish	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	1	2.60	2.60	9.50	9.50	1	-	-	-	-	0	0%	Yes
Crayfish	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	1	2.30	2.30	9.50	9.50	1	-	-	-	-	0	0%	Yes
Crayfish	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	1	2.20	2.20	9.50	9.50	1	-	-	-	-	0	0%	Yes
Crayfish	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	1	0.510	0.510	9.50	9.50	1	-	-	-	-	0	0%	Yes
Crayfish	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	1	1.80	1.80	9.50	9.50	1	-	-	-	-	0	0%	Yes
Crayfish	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	1	1.90	1.90	9.50	9.50	1	-	-	-	-	0	0%	Yes
Crayfish	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	1	2.50	2.50	9.50	9.50	1	-	-	-	-	0	0%	Yes
Crayfish	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	1	2.00	2.00	9.50	9.50	1	-	-	-	-	0	0%	Yes
Crayfish	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Wet	1	-	-	-	-	-	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Acenaphthene	ug/kg	Wet	1	0.500	0.500	0.500	0.500	1	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Anthracene	ug/kg	Wet	1	-	-	0.500	0.500	0	1	-	0.430	0.430	1	100%	Yes
Crayfish	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	1	0.500	0.500	0.500	0.500	1	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	1	0.0610	0.0610	0.500	0.500	1	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1	-	-	0.500	0.500	0	1	-	0.150	0.150	1	100%	Yes
Crayfish	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	1	-	-	0.500	0.500	0	1	-	0.110	0.110	1	100%	Yes
Crayfish	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	1	-	-	0.500	0.500	0	1	-	0.110	0.110	1	100%	Yes
Crayfish	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	1	66.0	66.0	200	200	1	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	1	7.30	7.30	39.0	39.0	1	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Carbazole	ug/kg	Wet	1	7.70	7.70	39.0	39.0	1	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Chrysene	ug/kg	Wet	1	0.200	0.200	0.500	0.500	1	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	1	0.0450	0.0450	0.500	0.500	1	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	1	140	140	140	140	1	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	1	11.0	11.0	39.0	39.0	1	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Fluoranthene	ug/kg	Wet	1	0.500	0.500	0.500	0.500	1	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Fluorene	ug/kg	Wet	1	-	-	-	-	0	-	1	0.510	0.510	1	100%	Yes
Crayfish	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	1	-	-	0.500	0.500	0	1	-	0.150	0.150	1	100%	Yes
Crayfish	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	1	11.0	11.0	39.0	39.0	1	-	-	-	-	0	0%	Yes
Crayfish	SVOCs	Total	Phenanthrene	ug/kg	Wet	1	-	-	-	-	0	-	1	0.820	0.820	1	100%	Yes

Table I-9a
Data Summary for Targeted Forebay Samples
Bradford Island - River Operable Unit
(4 of 5)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Crayfish	SVOCs	Total	Pyrene	ug/kg	Wet	1	0.500	0.500	0.500	0.500	1	-	-	-	-	0	0%	Yes
Clam	Metals	Total	Aluminum	mg/kg	Wet	1	-	-	-	-	0	-	1	75.5	75.5	1	100%	Yes
Clam	Metals	Total	Antimony	mg/kg	Wet	1	0.00100	0.00100	0.00900	0.00900	1	-	-	-	-	0	0%	Yes
Clam	Metals	Total	Arsenic	mg/kg	Wet	1	-	-	-	-	0	-	1	1.59	1.59	1	100%	Yes
Clam	Metals	Total	Barium	mg/kg	Wet	1	-	-	-	-	0	-	1	1.66	1.66	1	100%	Yes
Clam	Metals	Total	Beryllium	mg/kg	Wet	1	-	-	0.00400	0.00400	0	1	-	0.00200	0.00200	1	100%	Yes
Clam	Metals	Total	Cadmium	mg/kg	Wet	1	-	-	-	-	0	-	1	0.243	0.243	1	100%	Yes
Clam	Metals	Total	Chromium	mg/kg	Wet	1	-	-	-	-	0	-	1	0.492	0.492	1	100%	Yes
Clam	Metals	Total	Cobalt	mg/kg	Wet	1	-	-	-	-	0	-	1	0.0996	0.0996	1	100%	Yes
Clam	Metals	Total	Copper	mg/kg	Wet	1	-	-	-	-	0	-	1	6.75	6.75	1	100%	Yes
Clam	Metals	Total	Lead	mg/kg	Wet	1	-	-	-	-	0	-	1	0.0615	0.0615	1	100%	Yes
Clam	Metals	Total	Mercury	mg/kg	Wet	1	-	-	-	-	0	-	1	0.0163	0.0163	1	100%	Yes
Clam	Metals	Total	Nickel	mg/kg	Wet	1	-	-	-	-	0	-	1	0.221	0.221	1	100%	Yes
Clam	Metals	Total	Thallium	mg/kg	Wet	1	-	-	-	-	0	-	1	0.00650	0.00650	1	100%	Yes
Clam	Metals	Total	Vanadium	mg/kg	Wet	1	-	-	-	-	0	-	1	0.253	0.253	1	100%	Yes
Clam	Metals	Total	Zinc	mg/kg	Wet	1	-	-	-	-	0	-	1	20.5	20.5	1	100%	Yes
Clam	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	1	6.10	6.10	9.70	9.70	1	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	1	5.90	5.90	9.70	9.70	1	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	1	9.70	9.70	9.70	9.70	1	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	1	6.60	6.60	9.70	9.70	1	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	1	5.20	5.20	9.70	9.70	1	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	1	14.0	14.0	14.0	14.0	1	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	1	6.30	6.30	9.70	9.70	1	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	1	3.20	3.20	9.70	9.70	1	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	1	2.00	2.00	9.70	9.70	1	-	-	-	-	0	0%	Yes
Clam	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Wet	1	-	-	-	-	-	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Acenaphthene	ug/kg	Wet	1	-	-	-	-	0	-	1	0.680	0.680	1	100%	Yes
Clam	SVOCs	Total	Anthracene	ug/kg	Wet	1	-	-	-	-	0	-	1	1.20	1.20	1	100%	Yes
Clam	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	1	-	-	-	-	0	-	1	3.40	3.40	1	100%	Yes
Clam	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	1	-	-	-	-	0	-	1	0.750	0.750	1	100%	Yes
Clam	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1	-	-	-	-	0	-	1	2.20	2.20	1	100%	Yes
Clam	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	1	-	-	-	-	0	-	1	0.740	0.740	1	100%	Yes
Clam	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	1	-	-	-	-	0	-	1	1.30	1.30	1	100%	Yes
Clam	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	1	66.0	66.0	190	190	1	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	1	7.30	7.30	38.0	38.0	1	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Carbazole	ug/kg	Wet	1	7.70	7.70	38.0	38.0	1	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Chrysene	ug/kg	Wet	1	-	-	-	-	0	-	1	2.50	2.50	1	100%	Yes
Clam	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	1	-	-	0.490	0.490	0	1	-	0.480	0.480	1	100%	Yes
Clam	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	1	170	170	170	170	1	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	1	11.0	11.0	38.0	38.0	1	-	-	-	-	0	0%	Yes
Clam	SVOCs	Total	Fluoranthene	ug/kg	Wet	1	-	-	-	-	0	-	1	18.0	18.0	1	100%	Yes
Clam	SVOCs	Total	Fluorene	ug/kg	Wet	1	-	-	-	-	0	-	1	1.80	1.80	1	100%	Yes
Clam	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	1	-	-	-	-	0	-	1	0.890	0.890	1	100%	Yes
Clam	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	1	-	-	38.0	38.0	0	1	-	29.0	29.0	1	100%	Yes
Clam	SVOCs	Total	Phenanthrene	ug/kg	Wet	1	-	-	-	-	0	-	1	10.0	10.0	1	100%	Yes
Clam	SVOCs	Total	Pyrene	ug/kg	Wet	1	-	-	-	-	0	-	1	5.40	5.40	1	100%	Yes

Notes

Table I-9a
Data Summary for Targeted Forebay Samples
Bradford Island - River Operable Unit
(5 of 5)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)

% = percent
Dry = Dry weight
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
Max = maximum
MDL = method detection limit
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
Min = minimum
MRL = methode reporting limit
ND = non-detect
No. = number
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
Wet = Wet Weight

Table I-9b
PCB Congener Data Summary for Targeted Forebay Samples
Bradford Island - River Operable Unit
(1 of 2)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Minimum RDL of NDs	Maximum RDL of NDs	Number of NDs below RDL	Minimum EMPC Value	Maximum EMPC Value	Number of EMPC Results	Minimum Detected (not ND or EMPC)	Maximum Detected (not ND or EMPC)	Number of Detections (not ND or EMPC)	Detection Rate	Limited Data Set (<8 Samples)
Forebay - Goose Island																	
Sediment	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Dry	2	-	-	-	-	-	-	2.85	3.53	2	100%	Yes
Sediment	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Dry	2	-	-	-	0.150	0.150	1	0.135	0.135	1	50%	Yes
Sediment	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Dry	2	-	-	-	-	-	-	24.9	27.7	2	100%	Yes
Sediment	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Dry	2	-	-	-	-	-	-	1.29	1.37	2	100%	Yes
Sediment	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	2	-	-	-	-	-	-	65.7	69.5	2	100%	Yes
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	2	-	-	-	0.970	0.970	1	0.963	0.963	1	50%	Yes
Sediment	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	2	-	-	-	0.255	0.419	2	-	-	0	0%	Yes
Sediment	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Dry	2	-	-	-	-	-	-	8.50	10.4	2	100%	Yes
Sediment	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	2	-	-	-	-	-	-	3.81	4.02	2	100%	Yes
Sediment	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	2	0.241	0.250	2	-	-	-	-	-	0	0%	Yes
Sediment	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Dry	2	-	-	-	-	-	-	0.615	0.869	2	100%	Yes
Sediment	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Dry	2	-	-	-	-	-	-	1.20	1.34	2	100%	Yes
Crayfish	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	2.26	2.26	1	100%	Yes
Crayfish	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	1	0.145	0.145	1	-	-	-	-	-	0	0%	Yes
Crayfish	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	6.24	6.24	1	100%	Yes
Crayfish	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	2.35	2.35	1	100%	Yes
Crayfish	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	87.0	87.0	1	100%	Yes
Crayfish	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	2.56	2.56	1	100%	Yes
Crayfish	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	0.261	0.261	1	-	-	0	0%	Yes
Crayfish	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	13.3	13.3	1	100%	Yes
Crayfish	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	11.2	11.2	1	100%	Yes
Crayfish	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	1	0.164	0.164	1	-	-	-	-	-	0	0%	Yes
Crayfish	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	0.662	0.662	1	100%	Yes
Crayfish	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	1	-	-	-	-	-	-	0.587	0.587	1	100%	Yes
Sculpin	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	7.99	7.99	1	100%	Yes
Sculpin	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	1	-	-	-	0.882	0.882	1	-	-	0	0%	Yes
Sculpin	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	362	362	1	100%	Yes
Sculpin	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	22.0	22.0	1	100%	Yes
Sculpin	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	872	872	1	100%	Yes
Sculpin	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	16.3	16.3	1	100%	Yes
Sculpin	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	3.15	3.15	1	100%	Yes
Sculpin	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	106	106	1	100%	Yes
Sculpin	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	34.8	34.8	1	100%	Yes
Sculpin	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	1	1.31	1.31	1	-	-	-	-	-	0	0%	Yes
Sculpin	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	3.83	3.83	1	100%	Yes
Sculpin	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	1	-	-	-	-	-	-	8.14	8.14	1	100%	Yes
Clam	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	33.7	33.7	1	100%	Yes
Clam	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	1	-	-	-	2.17	2.17	1	-	-	0	0%	Yes
Clam	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	352	352	1	100%	Yes
Clam	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	22.8	22.8	1	100%	Yes
Clam	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	1,590	1,590	1	100%	Yes
Clam	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	28.0	28.0	1	100%	Yes

Table I-9b
PCB Congener Data Summary for Targeted Forebay Samples
Bradford Island - River Operable Unit
(2 of 2)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Minimum RDL of NDs	Maximum RDL of NDs	Number of NDs below RDL	Minimum EMPC Value	Maximum EMPC Value	Number of EMPC Results	Minimum Detected (not ND or EMPC)	Maximum Detected (not ND or EMPC)	Number of Detections (not ND or EMPC)	Detection Rate	Limited Data Set (<8 Samples)
Clam	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	3.07	3.07	1	100%	Yes
Clam	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	96.9	96.9	1	100%	Yes
Clam	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	92.5	92.5	1	100%	Yes
Clam	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	1	1.08	1.08	1	-	-	-	-	-	0	0%	Yes
Clam	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	1	-	-	-	-	-	-	1.57	1.57	1	100%	Yes
Clam	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	1	-	-	-	-	-	-	21.4	21.4	1	100%	Yes

Notes
% = percent
Dry = Dry weight
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
ND = non-detect
PCB = polychlorinated biphenyl
pg/kg = picograms per kilogram
RDL = reported detection limit
Wet = Wet Weight

Table I-10a
Data Summary for Downstream Samples
Bradford Island - River Operable Unit
(1 of 2)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Sediment	Metals	Total	Aluminum	mg/kg	Dry	6	-	-	-	-	0	-	6	10,600	21,600	6	100%	Yes
Sediment	Metals	Total	Antimony	mg/kg	Dry	6	-	-	-	-	0	-	6	0.0600	0.400	6	100%	Yes
Sediment	Metals	Total	Arsenic	mg/kg	Dry	6	-	-	-	-	0	-	6	2.48	5.84	6	100%	Yes
Sediment	Metals	Total	Barium	mg/kg	Dry	6	-	-	-	-	0	-	6	96.5	172	6	100%	Yes
Sediment	Metals	Total	Beryllium	mg/kg	Dry	6	-	-	-	-	0	-	6	0.286	0.513	6	100%	Yes
Sediment	Metals	Total	Cadmium	mg/kg	Dry	6	-	-	-	-	0	-	6	0.209	0.791	6	100%	Yes
Sediment	Metals	Total	Chromium	mg/kg	Dry	6	-	-	-	-	0	-	6	16.1	29.9	6	100%	Yes
Sediment	Metals	Total	Cobalt	mg/kg	Dry	6	-	-	-	-	0	-	6	6.93	11.5	6	100%	Yes
Sediment	Metals	Total	Copper	mg/kg	Dry	6	-	-	-	-	0	-	6	12.5	24.1	6	100%	Yes
Sediment	Metals	Total	Lead	mg/kg	Dry	6	-	-	-	-	0	-	6	6.67	12.7	6	100%	Yes
Sediment	Metals	Total	Mercury	mg/kg	Dry	6	-	-	-	-	0	-	6	0.0330	0.136	6	100%	Yes
Sediment	Metals	Total	Nickel	mg/kg	Dry	6	-	-	-	-	0	-	6	12.5	15.2	6	100%	Yes
Sediment	Metals	Total	Thallium	mg/kg	Dry	6	0.130	0.130	0.130	0.130	1	-	5	0.163	0.234	5	83%	Yes
Sediment	Metals	Total	Vanadium	mg/kg	Dry	6	-	-	-	-	0	-	6	43.8	73.5	6	100%	Yes
Sediment	Metals	Total	Zinc	mg/kg	Dry	6	-	-	-	-	0	-	6	56.7	117	6	100%	Yes
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	6	-	-	14.0	15.0	0	4	2	5.90	25.0	6	100%	Yes
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	6	140	180	140	180	5	1	-	41.0	41.0	1	17%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	6	1.70	1.70	7.00	8.80	6	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	6	1.70	1.70	14.0	18.0	6	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	6	1.70	1.70	7.00	8.80	6	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	6	1.70	1.70	7.00	8.80	6	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	6	1.70	1.70	7.00	8.80	6	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	6	1.70	1.70	7.00	8.80	6	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	6	1.70	1.70	7.00	8.80	6	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	6	1.70	1.70	7.00	8.80	6	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	6	1.70	1.70	7.00	8.80	6	-	-	-	-	0	0%	Yes
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Dry	6	-	-	-	-	-	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	6	200	200	200	200	6	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	6	1.50	9.90	9.70	10.0	6	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	6	1.30	1.30	9.70	10.0	5	1	-	1.60	1.60	1	17%	Yes
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	6	9.80	14.0	9.80	14.0	6	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	6	1.20	1.20	9.70	10.0	6	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	6	2.90	2.90	9.70	10.0	4	1	1	3.40	130	2	33%	Yes
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	6	1.00	1.00	9.70	10.0	6	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	6	1.40	1.40	9.70	10.0	3	3	-	1.60	3.10	3	50%	Yes
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	6	1.70	1.70	9.70	10.0	6	-	-	-	-	0	0%	Yes
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	6	1.30	1.30	9.70	10.0	2	4	-	2.20	4.90	4	67%	Yes
Sediment	SVOCs	Total	Total LPAHs (KM, cappped; NDs at MDL)	ug/kg	Dry	6	-	-	-	-	-	-	-	6.30	10.7	4	67%	Yes
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	6	-	-	9.70	10.0	0	5	1	1.70	12.0	6	100%	Yes
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	6	1.60	1.60	9.70	9.90	1	3	2	1.90	14.0	5	83%	Yes
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	6	2.50	2.50	9.70	10.0	2	3	1	3.30	16.0	4	67%	Yes
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	6	2.30	2.30	9.70	10.0	3	3	-	2.80	6.80	3	50%	Yes
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	6	2.50	2.50	9.70	10.0	4	2	-	4.20	6.50	2	33%	Yes
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	6	1.40	1.40	9.70	10.0	1	4	1	1.60	18.0	5	83%	Yes
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	6	2.20	2.20	9.70	10.0	5	1	-	2.30	2.30	1	17%	Yes
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	6	2.20	2.20	9.70	9.90	1	3	2	2.90	22.0	5	83%	Yes
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	6	1.90	1.90	9.70	10.0	3	3	-	2.80	8.20	3	50%	Yes
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	6	-	-	9.70	9.90	0	4	2	1.80	21.0	6	100%	Yes

Table I-10a
Data Summary for Downstream Samples
Bradford Island - River Operable Unit
(2 of 2)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Sediment	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	ug/kg	Dry	6	-	-	-	-	-	-	-	16.0	127	6	100%	Yes
Sediment	SVOCs	Total	Total PAHs (KM, capped; NDs at MDL)	ug/kg	Dry	6	-	-	-	-	-	-	-	16.8	137	6	100%	Yes

Notes
% = percent
Dry = Dry weight
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
Max = maximum
MDL = method detection limit
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
Min = minimum
MRL = methode reporting limit
ND = non-detect
No. = number
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
Wet = Wet Weight

Table I-10b
PCB Congener Data Summary for Downstream Samples
Bradford Island - River Operable Unit
(1 of 1)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Minimum RDL of NDs	Maximum RDL of NDs	Number of NDs below RDL	Minimum EMPC Value	Maximum EMPC Value	Number of EMPC Results	Minimum Detected (not ND or EMPC)	Maximum Detected (not ND or EMPC)	Number of Detections (not ND or EMPC)	Detection Rate	Limited Data Set (<8 Samples)
Sediment	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Dry	6	-	-	-	0.259	0.531	2	0.478	2.01	4	67%	Yes
Sediment	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Dry	6	0.0492	0.100	5	-	-	-	0.260	0.260	1	17%	Yes
Sediment	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Dry	6	-	-	-	-	-	-	1.79	19.7	6	100%	Yes
Sediment	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Dry	6	0.0976	0.0976	1	-	-	-	0.239	0.957	5	83%	Yes
Sediment	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	6	-	-	-	-	-	-	4.09	45.6	6	100%	Yes
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	6	-	-	-	0.168	0.168	1	0.130	0.874	5	83%	Yes
Sediment	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	6	0.0787	0.171	5	-	-	-	0.211	0.211	1	17%	Yes
Sediment	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Dry	6	-	-	-	0.604	1.39	2	1.74	6.25	4	67%	Yes
Sediment	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	6	-	-	-	-	-	-	0.320	2.61	6	100%	Yes
Sediment	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	6	0.0630	0.154	6	-	-	-	-	-	0	0%	Yes
Sediment	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Dry	6	0.0733	0.0733	1	0.115	0.115	1	0.0970	0.596	4	67%	Yes
Sediment	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Dry	6	-	-	-	-	-	-	0.0880	0.917	6	100%	Yes

Notes
% = percent
Dry = Dry weight
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
ND = non-detect
PCB = polychlorinated biphenyl
pg/kg = picograms per kilogram
RDL = reported detection limit
Wet = Wet Weight

Table I-11a
Data Summary for Random Reference Samples
Bradford Island - River Operable Unit
(1 of 7)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Surface Water	Metals	Dissolved	Aluminum	ug/L	Wet	5	20.0	20.0	50.0	50.0	4	1	-	27.0	27.0	1	20%	Yes
Surface Water	Metals	Dissolved	Antimony	ug/L	Wet	5	7.00	7.00	50.0	50.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Arsenic	ug/L	Wet	5	1.10	1.15	1.10	1.15	3	-	2	0.935	1.26	2	40%	Yes
Surface Water	Metals	Dissolved	Barium	ug/L	Wet	5	-	-	-	-	0	-	5	21.5	23.5	5	100%	Yes
Surface Water	Metals	Dissolved	Beryllium	ug/L	Wet	5	0.00800	0.0200	0.0200	0.0200	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Cadmium	ug/L	Wet	5	0.00500	0.00700	0.0200	0.0200	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Chromium	ug/L	Wet	5	2.00	2.00	5.00	5.00	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Cobalt	ug/L	Wet	5	2.00	2.00	10.0	10.0	4	1	-	2.20	2.20	1	20%	Yes
Surface Water	Metals	Dissolved	Copper	ug/L	Wet	5	-	-	-	-	0	-	5	0.450	0.610	5	100%	Yes
Surface Water	Metals	Dissolved	Lead	ug/L	Wet	5	0.00900	0.00900	0.0200	0.0200	2	2	1	0.0140	0.0240	3	60%	Yes
Surface Water	Metals	Dissolved	Mercury	ug/L	Wet	5	0.0300	0.0300	0.200	0.200	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Nickel	ug/L	Wet	5	2.00	2.00	20.0	20.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Thallium	ug/L	Wet	5	0.0200	0.0240	0.0200	0.0240	3	1	1	0.0185	0.020	2	40%	Yes
Surface Water	Metals	Dissolved	Vanadium	ug/L	Wet	5	5.00	5.00	10.0	10.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Dissolved	Zinc	ug/L	Wet	5	7.00	7.00	10.0	10.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Total	Aluminum	ug/L	Wet	5	-	-	-	-	0	-	5	91.0	123	5	100%	Yes
Surface Water	Metals	Total	Antimony	ug/L	Wet	5	7.00	7.00	50.0	50.0	4	1	-	9.30	9.30	1	20%	Yes
Surface Water	Metals	Total	Arsenic	ug/L	Wet	5	1.05	1.05	1.05	1.05	1	-	4	0.910	1.25	4	80%	Yes
Surface Water	Metals	Total	Barium	ug/L	Wet	5	-	-	-	-	0	-	5	21.0	25.6	5	100%	Yes
Surface Water	Metals	Total	Beryllium	ug/L	Wet	5	0.00800	0.0200	0.0200	0.0200	2	2	1	0.00900	0.0210	3	60%	Yes
Surface Water	Metals	Total	Cadmium	ug/L	Wet	5	0.0200	0.0200	0.0200	0.0200	3	1	1	0.0100	0.0210	2	40%	Yes
Surface Water	Metals	Total	Chromium	ug/L	Wet	5	2.00	2.00	5.00	5.00	4	1	-	2.00	2.00	1	20%	Yes
Surface Water	Metals	Total	Cobalt	ug/L	Wet	5	2.00	2.00	10.0	10.0	4	1	-	2.00	2.00	1	20%	Yes
Surface Water	Metals	Total	Copper	ug/L	Wet	5	-	-	-	-	0	-	5	0.605	0.830	5	100%	Yes
Surface Water	Metals	Total	Lead	ug/L	Wet	5	-	-	-	-	0	-	5	0.0580	0.203	5	100%	Yes
Surface Water	Metals	Total	Mercury	ug/L	Wet	5	0.0300	0.0300	0.200	0.200	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Total	Nickel	ug/L	Wet	5	2.00	2.00	20.0	20.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Total	Thallium	ug/L	Wet	5	0.0200	0.0370	0.0200	0.0370	4	-	1	0.0205	0.0205	1	20%	Yes
Surface Water	Metals	Total	Vanadium	ug/L	Wet	5	5.00	5.00	10.0	10.0	5	-	-	-	-	0	0%	Yes
Surface Water	Metals	Total	Zinc	ug/L	Wet	5	7.00	7.00	10.0	10.0	5	-	-	-	-	0	0%	Yes
Surface Water	NWTPH-Dx	Dissolved	Diesel Range Organics	ug/L	Wet	5	11.0	12.0	100	110	4	1	-	13.0	13.0	1	20%	Yes
Surface Water	NWTPH-Dx	Dissolved	Residual Range Organics	ug/L	Wet	5	21.0	100	100	110	2	3	-	20.0	24.0	3	60%	Yes
Surface Water	NWTPH-Dx	Total	Diesel Range Organics	ug/L	Wet	5	11.0	12.0	100	110	2	3	-	13.0	19.0	3	60%	Yes
Surface Water	NWTPH-Dx	Total	Residual Range Organics	ug/L	Wet	5	20.0	100	100	110	2	3	-	22.0	71.0	3	60%	Yes
Surface Water	SVOCs	Column	Acenaphthene	ng/L	Wet	5	-	-	-	-	0	-	5	0.862	2.41	5	100%	Yes
Surface Water	SVOCs	Filter	Acenaphthene	ng/L	Wet	5	0.0141	0.0328	0.0141	0.0328	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Acenaphthene	ng/L	Wet	5	-	-	-	-	-	-	-	0.888	2.43	5	100%	Yes
Surface Water	SVOCs	Column	Anthracene	ng/L	Wet	5	0.0594	0.133	0.0594	0.133	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Anthracene	ng/L	Wet	5	-	-	-	-	0	-	5	0.0109	0.0238	5	100%	Yes
Surface Water	SVOCs	C+F	Anthracene	ng/L	Wet	5	-	-	-	-	-	-	-	0.0832	0.150	5	100%	Yes
Surface Water	SVOCs	Column	Benzo(a)anthracene	ng/L	Wet	5	0.00930	0.0177	0.0177	0.0177	2	-	3	0.0115	0.0162	3	60%	Yes
Surface Water	SVOCs	Filter	Benzo(a)anthracene	ng/L	Wet	5	0.0205	0.0376	0.0205	0.0376	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Benzo(a)anthracene	ng/L	Wet	5	0.0298	0.0438	0.0298	0.0438	-	-	-	0.0491	0.0533	3	60%	Yes
Surface Water	SVOCs	Column	Benzo(a)pyrene	ng/L	Wet	5	0.0131	0.0204	0.0131	0.0204	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Benzo(a)pyrene	ng/L	Wet	5	0.0195	0.0405	0.0195	0.0405	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Benzo(a)pyrene	ng/L	Wet	5	0.0366	0.0564	0.0366	0.0564	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Benzo(b)fluoranthene	ng/L	Wet	5	0.00870	0.0146	0.00870	0.0146	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Benzo(b)fluoranthene	ng/L	Wet	5	0.0230	0.0327	0.0230	0.0327	3	-	2	0.0512	0.0555	2	40%	Yes

Table I-11a
Data Summary for Random Reference Samples
Bradford Island - River Operable Unit
(2 of 7)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Surface Water	SVOCs	C+F	Benzo(b)fluoranthene	ng/L	Wet	5	0.0330	0.0473	0.0330	0.0473	-	-	-	0.0599	0.0669	2	40%	Yes
Surface Water	SVOCs	Column	Benzo(g,h,i)perylene	ng/L	Wet	5	0.0121	0.0203	0.0121	0.0203	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Benzo(g,h,i)perylene	ng/L	Wet	5	0.0174	0.0400	0.0174	0.0400	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Benzo(g,h,i)perylene	ng/L	Wet	5	0.0295	0.0603	0.0295	0.0603	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Benzo(j,k)flouranthenes	ng/L	Wet	5	0.00930	0.0159	0.00930	0.0159	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Benzo(j,k)flouranthenes	ng/L	Wet	5	0.0209	0.0551	0.0209	0.0551	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Benzo(j,k)flouranthenes	ng/L	Wet	5	0.0319	0.0644	0.0319	0.0644	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Bis(2-ethylhexyl) Phthalate	ng/L	Wet	5	5.77	17.0	5.77	17.0	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Bis(2-ethylhexyl) Phthalate	ng/L	Wet	5	2.75	13.0	2.75	13.0	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Bis(2-ethylhexyl) Phthalate	ng/L	Wet	5	11.9	22.3	11.9	22.3	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Butyl Benzyl Phthalate	ng/L	Wet	5	0.263	0.501	0.263	0.501	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Butyl Benzyl Phthalate	ng/L	Wet	5	0.158	5.47	0.158	5.47	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Butyl Benzyl Phthalate	ng/L	Wet	5	0.480	5.97	0.480	5.97	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Chrysene	ng/L	Wet	5	-	-	-	-	0	-	5	0.0393	0.0661	5	100%	Yes
Surface Water	SVOCs	Filter	Chrysene	ng/L	Wet	5	0.0450	0.0930	0.0450	0.0930	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Chrysene	ng/L	Wet	5	-	-	-	-	-	-	-	0.0843	0.149	5	100%	Yes
Surface Water	SVOCs	Column	Dibenz(a,h)anthracene	ng/L	Wet	5	0.0147	0.0215	0.0147	0.0215	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Dibenz(a,h)anthracene	ng/L	Wet	5	0.0182	0.0289	0.0182	0.0289	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Dibenz(a,h)anthracene	ng/L	Wet	5	0.0345	0.0504	0.0345	0.0504	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Di-n-butyl Phthalate	ng/L	Wet	5	0.517	0.733	0.517	0.733	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Di-n-butyl Phthalate	ng/L	Wet	5	0.243	0.595	0.243	0.595	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Di-n-butyl Phthalate	ng/L	Wet	5	0.841	1.22	0.841	1.22	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Di-n-octyl Phthalate	ng/L	Wet	5	0.0910	0.202	0.0910	0.202	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Di-n-octyl Phthalate	ng/L	Wet	5	0.120	1.09	0.120	1.09	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Di-n-octyl Phthalate	ng/L	Wet	5	0.271	1.29	0.271	1.29	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Fluoranthene	ng/L	Wet	5	0.485	0.591	0.485	0.591	2	-	3	0.620	0.630	3	60%	Yes
Surface Water	SVOCs	Filter	Fluoranthene	ng/L	Wet	5	0.0793	0.0793	0.0793	0.0793	1	-	4	0.101	0.163	4	80%	Yes
Surface Water	SVOCs	C+F	Fluoranthene	ng/L	Wet	5	0.564	0.564	0.564	0.564	-	-	-	0.692	0.783	4	80%	Yes
Surface Water	SVOCs	Column	Indeno(1,2,3-cd)pyrene	ng/L	Wet	5	0.0128	0.0222	0.0128	0.0222	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Filter	Indeno(1,2,3-cd)pyrene	ng/L	Wet	5	0.0147	0.0417	0.0147	0.0417	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Indeno(1,2,3-cd)pyrene	ng/L	Wet	5	0.0311	0.0639	0.0311	0.0639	-	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	Column	Phenanthrene	ng/L	Wet	5	-	-	-	-	0	-	5	1.20	1.52	5	100%	Yes
Surface Water	SVOCs	Filter	Phenanthrene	ng/L	Wet	5	0.0571	0.114	0.0571	0.114	5	-	-	-	-	0	0%	Yes
Surface Water	SVOCs	C+F	Phenanthrene	ng/L	Wet	5	-	-	-	-	-	-	-	1.346	1.61	5	100%	Yes
Sediment	Metals	Total	Aluminum	mg/kg	Dry	18	-	-	-	-	0	-	18	7,380	33,500	18	100%	No
Sediment	Metals	Total	Antimony	mg/kg	Dry	18	-	-	-	-	0	-	18	0.150	0.520	18	100%	No
Sediment	Metals	Total	Arsenic	mg/kg	Dry	18	-	-	-	-	0	-	18	3.03	6.04	18	100%	No
Sediment	Metals	Total	Barium	mg/kg	Dry	18	-	-	-	-	0	-	18	86.3	312	18	100%	No
Sediment	Metals	Total	Beryllium	mg/kg	Dry	18	-	-	-	-	0	-	18	0.194	0.748	18	100%	No
Sediment	Metals	Total	Cadmium	mg/kg	Dry	18	-	-	-	-	0	-	18	0.262	0.748	18	100%	No
Sediment	Metals	Total	Chromium	mg/kg	Dry	18	-	-	-	-	0	-	18	12.8	27.3	18	100%	No
Sediment	Metals	Total	Cobalt	mg/kg	Dry	18	-	-	-	-	0	-	18	5.68	15.2	18	100%	No
Sediment	Metals	Total	Copper	mg/kg	Dry	18	-	-	-	-	0	-	18	8.22	47.8	18	100%	No
Sediment	Metals	Total	Lead	mg/kg	Dry	18	-	-	-	-	0	-	18	8.65	15.1	18	100%	No
Sediment	Metals	Total	Mercury	mg/kg	Dry	18	-	-	-	-	0	-	18	0.0410	0.225	18	100%	No
Sediment	Metals	Total	Nickel	mg/kg	Dry	18	-	-	-	-	0	-	18	9.87	25.6	18	100%	No
Sediment	Metals	Total	Thallium	mg/kg	Dry	18	-	-	-	-	0	-	18	0.145	0.360	18	100%	No

Table I-11a
Data Summary for Random Reference Samples
Bradford Island - River Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Sediment	Metals	Total	Vanadium	mg/kg	Dry	18	-	-	-	-	0	-	18	25.7	76.9	18	100%	No
Sediment	Metals	Total	Zinc	mg/kg	Dry	18	-	-	-	-	0	-	18	70.2	109	18	100%	No
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	18	-	-	15.0	21.0	0	12	6	7.00	31.0	18	100%	No
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	18	150	180	150	210	5	13	-	29.0	100	13	72%	No
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	18	1.70	13.0	9.60	13.0	18	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	18	1.70	11.0	20.0	21.0	18	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	18	1.70	12.0	9.60	12.0	18	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	18	1.70	16.0	9.60	16.0	18	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	18	1.70	1.80	9.60	11.0	18	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	18	1.70	1.80	9.60	11.0	18	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	18	1.70	1.80	9.60	11.0	18	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	18	1.70	1.80	9.60	11.0	18	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	18	1.70	1.80	9.60	11.0	18	-	-	-	-	0	0%	No
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Dry	18	-	-	-	-	-	-	-	-	-	0	0%	No
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	18	-	-	190	210	0	18	-	4.90	110	18	100%	No
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	18	1.50	1.60	9.50	11.0	16	2	-	2.50	3.80	2	11%	No
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	18	1.30	1.40	9.50	11.0	18	-	-	-	-	0	0%	No
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	18	2.60	2.60	9.50	11.0	3	14	1	3.50	11.0	15	83%	No
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	18	1.20	1.30	9.50	11.0	18	-	-	-	-	0	0%	No
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	18	2.90	2.90	9.80	10.0	7	7	4	4.50	210	11	61%	No
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	18	1.00	1.10	9.50	11.0	18	-	-	-	-	0	0%	No
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	18	1.40	1.50	9.50	11.0	16	2	-	1.40	2.30	2	11%	No
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	18	1.70	1.80	9.50	11.0	18	-	-	-	-	0	0%	No
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	18	1.30	1.30	9.50	11.0	2	16	-	1.30	5.90	16	89%	No
Sediment	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	ug/kg	Dry	18	-	-	-	-	-	-	-	5.40	10.0	16	89%	No
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	18	1.40	1.40	9.50	11.0	4	13	1	1.60	10.0	14	78%	No
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	18	1.60	1.60	9.50	11.0	9	8	1	1.60	11.0	9	50%	No
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	18	2.50	2.50	9.50	11.0	5	12	1	2.70	17.0	13	72%	No
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	18	2.30	2.30	9.50	11.0	8	10	-	2.30	7.90	10	56%	No
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	18	2.50	2.60	9.50	11.0	17	1	-	5.00	5.00	1	6%	No
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	18	1.40	1.40	9.50	11.0	3	14	1	1.90	9.80	15	83%	No
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	18	2.20	2.30	9.50	11.0	18	-	-	-	-	0	0%	No
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	18	2.20	2.20	9.50	11.0	3	14	1	2.30	31.0	15	83%	No
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	18	1.90	1.90	9.50	11.0	9	9	-	2.00	8.80	9	50%	No
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	18	-	-	9.50	11.0	0	17	1	1.50	23.0	18	100%	No
Sediment	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	ug/kg	Dry	18	-	-	-	-	-	-	-	16.4	125	18	100%	No
Sediment	SVOCs	Total	Total PAHs (KM, capped; NDs at MDL)	ug/kg	Dry	18	-	-	-	-	-	-	-	17.1	133	18	100%	No
Crayfish	Metals	Total	Aluminum	mg/kg	Wet	19	-	-	-	-	0	-	19	71.2	221	19	100%	No
Crayfish	Metals	Total	Antimony	mg/kg	Wet	19	-	-	0.0120	0.0150	0	9	10	0.00600	0.0390	19	100%	No
Crayfish	Metals	Total	Arsenic	mg/kg	Wet	19	-	-	-	-	0	-	19	0.275	0.636	19	100%	No
Crayfish	Metals	Total	Barium	mg/kg	Wet	19	-	-	-	-	0	-	19	40.2	120	19	100%	No
Crayfish	Metals	Total	Beryllium	mg/kg	Wet	19	-	-	0.00490	0.00930	0	19	-	0.00260	0.00610	19	100%	No
Crayfish	Metals	Total	Cadmium	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0460	0.201	19	100%	No
Crayfish	Metals	Total	Chromium	mg/kg	Wet	19	0.130	0.130	0.240	0.290	1	5	13	0.120	1.23	18	95%	No
Crayfish	Metals	Total	Cobalt	mg/kg	Wet	19	-	-	-	-	0	-	19	0.224	0.439	19	100%	No
Crayfish	Metals	Total	Copper	mg/kg	Wet	19	-	-	-	-	0	-	19	12.2	33.2	19	100%	No
Crayfish	Metals	Total	Lead	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0560	1.55	19	100%	No

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Data Summary for Random Reference Samples
Bradford Island - River Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Crayfish	Metals	Total	Mercury	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0105	0.0246	19	100%	No
Crayfish	Metals	Total	Methyl Mercury	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0181	0.0367	19	100%	No
Crayfish	Metals	Total	Nickel	mg/kg	Wet	19	-	-	-	-	0	-	19	0.992	3.44	19	100%	No
Crayfish	Metals	Total	Thallium	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0140	0.0370	19	100%	No
Crayfish	Metals	Total	Vanadium	mg/kg	Wet	19	-	-	-	-	0	-	19	0.261	0.804	19	100%	No
Crayfish	Metals	Total	Zinc	mg/kg	Wet	19	-	-	-	-	0	-	19	18.0	36.5	19	100%	No
Crayfish	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	19	2.40	4.80	9.40	20.0	19	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	19	2.60	5.20	19.0	40.0	19	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	19	2.30	4.60	9.40	20.0	19	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	19	2.20	4.40	9.40	20.0	19	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	19	0.510	1.10	9.40	20.0	19	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	19	1.80	3.60	9.40	20.0	19	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	19	1.90	3.80	9.40	20.0	19	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	19	2.50	5.00	9.40	20.0	19	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	19	2.00	4.00	9.40	20.0	19	-	-	-	-	0	0%	No
Crayfish	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	19	-	-	-	-	-	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Acenaphthene	ug/kg	Wet	18	0.110	0.110	0.450	0.500	15	3	-	0.120	0.190	3	17%	No
Crayfish	SVOCs	Total	Anthracene	ug/kg	Wet	18	0.0650	0.0650	0.450	0.500	16	2	-	0.0980	0.190	2	11%	No
Crayfish	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	18	0.0660	0.0660	0.450	0.500	16	2	-	0.310	0.400	2	11%	No
Crayfish	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	18	0.0810	0.0810	0.450	0.500	17	1	-	0.120	0.120	1	6%	No
Crayfish	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	18	0.0700	0.0700	0.450	0.500	14	4	-	0.0820	0.230	4	22%	No
Crayfish	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	18	0.0730	0.500	0.450	0.500	18	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	18	0.0560	0.0560	0.450	0.500	14	4	-	0.0720	0.200	4	22%	No
Crayfish	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	18	66.0	66.0	190	200	14	4	-	69.0	87.0	4	22%	No
Crayfish	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	18	7.30	7.30	38.0	40.0	15	3	-	15.0	31.0	3	17%	No
Crayfish	SVOCs	Total	Carbazole	ug/kg	Wet	18	9.10	9.10	38.0	40.0	18	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Chrysene	ug/kg	Wet	18	0.0760	0.0760	0.450	0.500	13	5	-	0.0910	0.270	5	28%	No
Crayfish	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	18	0.0590	0.0590	0.450	0.500	15	3	-	0.0720	0.160	3	17%	No
Crayfish	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	18	16.0	110	38.0	110	18	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	18	11.0	11.0	38.0	40.0	17	1	-	32.0	32.0	1	6%	No
Crayfish	SVOCs	Total	Fluoranthene	ug/kg	Wet	18	0.450	0.500	0.450	0.500	18	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Fluorene	ug/kg	Wet	18	0.150	0.150	0.450	0.500	16	2	-	0.180	0.250	2	11%	No
Crayfish	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	18	0.0640	0.0640	0.450	0.500	15	3	-	0.0870	0.180	3	17%	No
Crayfish	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	18	7.70	7.70	38.0	40.0	18	-	-	-	-	0	0%	No
Crayfish	SVOCs	Total	Phenanthrene	ug/kg	Wet	18	0.360	0.360	0.450	0.500	13	2	3	0.450	0.590	5	28%	No
Crayfish	SVOCs	Total	Pyrene	ug/kg	Wet	18	0.450	0.500	0.450	0.500	18	-	-	-	-	0	0%	No
Smallmouth Bass	Metals	Total	Aluminum	mg/kg	Wet	19	-	-	0.582	0.582	0	1	18	0.330	10.1	19	100%	No
Smallmouth Bass	Metals	Total	Antimony	mg/kg	Wet	19	0.00200	0.00600	0.0110	0.0180	15	3	1	0.00300	0.0250	4	21%	No
Smallmouth Bass	Metals	Total	Arsenic	mg/kg	Wet	19	-	-	-	-	0	-	19	0.159	0.761	19	100%	No
Smallmouth Bass	Metals	Total	Barium	mg/kg	Wet	19	-	-	-	-	0	-	19	0.430	1.72	19	100%	No
Smallmouth Bass	Metals	Total	Beryllium	mg/kg	Wet	19	0.000500	0.00200	0.00400	0.00600	19	-	-	-	-	0	0%	No
Smallmouth Bass	Metals	Total	Cadmium	mg/kg	Wet	19	-	-	0.00800	0.00900	0	6	13	0.00400	0.143	19	100%	No
Smallmouth Bass	Metals	Total	Chromium	mg/kg	Wet	19	0.100	0.100	0.230	0.500	7	11	1	0.0400	7.15	12	63%	No
Smallmouth Bass	Metals	Total	Cobalt	mg/kg	Wet	19	0.0248	0.0361	0.0248	0.0361	7	-	12	0.0487	0.0838	12	63%	No
Smallmouth Bass	Metals	Total	Copper	mg/kg	Wet	19	-	-	-	-	0	-	19	0.327	0.730	19	100%	No
Smallmouth Bass	Metals	Total	Lead	mg/kg	Wet	19	0.0130	0.0150	0.0130	0.0150	7	-	12	1.42	1.81	12	63%	No
Smallmouth Bass	Metals	Total	Mercury	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0548	0.333	19	100%	No

Table I-11a
Data Summary for Random Reference Samples
Bradford Island - River Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Smallmouth Bass	Metals	Total	Nickel	mg/kg	Wet	19	0.277	0.306	0.277	0.306	3	-	16	0.324	1.79	16	84%	No
Smallmouth Bass	Metals	Total	Thallium	mg/kg	Wet	19	-	-	-	-	0	-	19	0.0109	0.0261	19	100%	No
Smallmouth Bass	Metals	Total	Vanadium	mg/kg	Wet	19	0.00600	0.00600	0.0500	0.0600	1	9	9	0.0300	0.104	18	95%	No
Smallmouth Bass	Metals	Total	Zinc	mg/kg	Wet	19	-	-	-	-	0	-	19	11.2	15.5	19	100%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	19	2.40	9.90	9.90	10.0	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	19	2.60	20.0	20.0	20.0	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	19	2.30	11.0	9.90	11.0	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	19	2.20	10.0	9.90	10.0	15	3	1	2.40	14.0	4	21%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	19	0.510	33.0	9.90	33.0	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	19	9.60	130	10.0	130	3	-	16	27.0	110	16	84%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	19	1.90	140	9.90	140	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	19	2.50	110	9.90	110	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	19	2.00	10.0	9.90	10.0	19	-	-	-	-	0	0%	No
Smallmouth Bass	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Wet	19	-	-	-	-	-	-	-	29.2	124	16	84%	No
Smallmouth Bass	SVOCs	Total	Acenaphthene	ug/kg	Wet	19	0.110	0.110	0.490	2.00	1	3	15	0.510	1.30	18	95%	No
Smallmouth Bass	SVOCs	Total	Anthracene	ug/kg	Wet	19	0.0650	0.650	0.470	4.80	16	3	-	0.0900	0.380	3	16%	No
Smallmouth Bass	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	19	0.0660	0.660	0.470	4.80	16	-	3	0.560	0.940	3	16%	No
Smallmouth Bass	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	19	0.0810	0.810	0.470	4.80	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	19	0.0700	0.700	0.470	4.80	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	19	0.0730	0.730	0.470	4.80	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	19	0.0560	0.560	0.470	4.80	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	19	66.0	2,500	180	2,500	17	2	-	81.0	150	2	11%	No
Smallmouth Bass	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	19	7.30	7.30	35.0	40.0	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	Carbazole	ug/kg	Wet	19	7.70	9.10	35.0	40.0	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	Chrysene	ug/kg	Wet	19	0.0760	0.760	0.470	4.80	18	-	1	0.550	0.550	1	5%	No
Smallmouth Bass	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	19	0.0590	0.590	0.470	4.80	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	19	16.0	280	40.0	280	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	19	11.0	11.0	35.0	40.0	18	1	-	15.0	15.0	1	5%	No
Smallmouth Bass	SVOCs	Total	Fluoranthene	ug/kg	Wet	19	0.0900	1.20	0.470	4.80	8	4	7	0.690	2.50	11	58%	No
Smallmouth Bass	SVOCs	Total	Fluorene	ug/kg	Wet	19	0.150	2.00	0.490	2.00	3	3	13	0.890	2.10	16	84%	No
Smallmouth Bass	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	19	0.0640	0.640	0.470	4.80	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	19	7.70	11.0	35.0	40.0	19	-	-	-	-	0	0%	No
Smallmouth Bass	SVOCs	Total	Phenanthrene	ug/kg	Wet	19	-	-	4.70	4.80	0	2	17	1.40	5.10	19	100%	No
Smallmouth Bass	SVOCs	Total	Pyrene	ug/kg	Wet	19	0.0980	0.980	0.470	4.80	17	2	-	0.380	0.420	2	11%	No
Sculpin	Metals	Total	Arsenic	mg/kg	Wet	18	-	-	-	-	0	-	18	0.239	0.484	18	100%	No
Sculpin	Metals	Total	Cadmium	mg/kg	Wet	18	-	-	-	-	0	-	18	0.00870	0.0264	18	100%	No
Sculpin	Metals	Total	Lead	mg/kg	Wet	18	0.0214	0.0214	0.0214	0.0214	1	-	17	0.0239	0.0758	17	94%	No
Sculpin	Metals	Total	Mercury	mg/kg	Wet	18	-	-	-	-	0	-	18	0.0448	0.141	18	100%	No
Sculpin	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	18	2.40	2.40	9.20	10.0	18	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	18	2.60	2.60	19.0	20.0	18	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	18	2.30	2.30	9.20	10.0	18	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	18	2.20	2.20	9.20	10.0	18	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	18	0.510	45.0	9.20	45.0	18	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	18	1.80	44.0	9.70	44.0	18	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	18	1.90	1.90	9.20	10.0	18	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	18	2.50	2.50	9.20	10.0	18	-	-	-	-	0	0%	No
Sculpin	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	18	2.00	2.00	9.20	10.0	18	-	-	-	-	0	0%	No

Table I-11a
Data Summary for Random Reference Samples
Bradford Island - River Operable Unit
(6 of 7)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)
Sculpin	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Wet	18	-	-	-	-	-	-	-	-	-	0	0%	No
Clam	Metals	Total	Aluminum	mg/kg	Wet	18	-	-	-	-	0	-	18	8.00	83.4	18	100%	No
Clam	Metals	Total	Antimony	mg/kg	Wet	18	0.00400	0.00500	0.00900	0.0110	15	3	-	0.00400	0.00800	3	17%	No
Clam	Metals	Total	Arsenic	mg/kg	Wet	18	-	-	-	-	0	-	18	2.00	2.62	18	100%	No
Clam	Metals	Total	Barium	mg/kg	Wet	18	-	-	-	-	0	-	18	1.71	2.38	18	100%	No
Clam	Metals	Total	Beryllium	mg/kg	Wet	18	0.000400	0.000400	0.00360	0.00450	9	9	-	0.000400	0.00140	9	50%	No
Clam	Metals	Total	Cadmium	mg/kg	Wet	18	-	-	-	-	0	-	18	0.247	0.405	18	100%	No
Clam	Metals	Total	Chromium	mg/kg	Wet	18	-	-	-	-	0	-	18	0.450	0.760	18	100%	No
Clam	Metals	Total	Cobalt	mg/kg	Wet	18	-	-	-	-	0	-	18	0.0902	0.150	18	100%	No
Clam	Metals	Total	Copper	mg/kg	Wet	18	-	-	-	-	0	-	18	8.18	11.6	18	100%	No
Clam	Metals	Total	Lead	mg/kg	Wet	18	-	-	-	-	0	-	18	0.0490	0.0720	18	100%	No
Clam	Metals	Total	Mercury	mg/kg	Wet	18	-	-	-	-	0	-	18	0.00460	0.0179	18	100%	No
Clam	Metals	Total	Methyl Mercury	mg/kg	Wet	18	-	-	0.002	0.002	0	2	16	0.00140	0.00990	18	100%	No
Clam	Metals	Total	Nickel	mg/kg	Wet	18	-	-	-	-	0	-	18	0.273	0.482	18	100%	No
Clam	Metals	Total	Thallium	mg/kg	Wet	18	-	-	-	-	0	-	18	0.00530	0.0105	18	100%	No
Clam	Metals	Total	Vanadium	mg/kg	Wet	18	-	-	-	-	0	-	18	0.0740	0.286	18	100%	No
Clam	Metals	Total	Zinc	mg/kg	Wet	18	-	-	-	-	0	-	18	18.5	23.2	18	100%	No
Clam	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	18	8.40	15.0	9.80	15.0	18	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	18	6.30	16.0	20.0	20.0	18	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	18	18.0	35.0	18.0	35.0	18	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	18	7.90	14.0	9.70	14.0	18	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	18	5.50	9.90	9.60	10.0	18	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	18	-	-	-	-	0	-	18	30.0	39.0	18	100%	No
Clam	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	18	5.70	8.10	9.60	10.0	18	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	18	3.70	9.90	9.60	10.0	18	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	18	2.00	2.00	9.60	10.0	18	-	-	-	-	0	0%	No
Clam	PCB Aroclors	Total	Total PCBs As Aroclors (NDs at MDL)	ug/kg	Wet	18	-	-	-	-	-	-	-	30.0	39.0	18	100%	No
Clam	SVOCs	Total	Acenaphthene	ug/kg	Wet	18	-	-	0.480	0.500	0	4	14	0.270	1.20	18	100%	No
Clam	SVOCs	Total	Anthracene	ug/kg	Wet	18	1.30	3.20	2.30	3.20	16	2	-	0.850	1.80	2	11%	No
Clam	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	18	3.70	27.0	3.70	27.0	18	-	-	-	-	0	0%	No
Clam	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	18	0.410	0.410	2.30	2.50	18	-	-	-	-	0	0%	No
Clam	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	18	0.350	0.350	2.30	2.50	18	-	-	-	-	0	0%	No
Clam	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	18	0.370	0.370	2.30	2.50	13	5	-	0.500	1.40	5	28%	No
Clam	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	18	0.280	0.280	2.30	2.50	18	-	-	-	-	0	0%	No
Clam	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	18	-	-	-	-	0	-	18	310	680	18	100%	No
Clam	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	18	7.30	7.30	39.0	98.0	15	3	-	57.0	74.0	3	17%	No
Clam	SVOCs	Total	Carbazole	ug/kg	Wet	18	9.10	9.10	35.0	40.0	18	-	-	-	-	0	0%	No
Clam	SVOCs	Total	Chrysene	ug/kg	Wet	18	1.30	13.0	2.50	13.0	18	-	-	-	-	0	0%	No
Clam	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	18	0.300	0.300	2.30	2.50	18	-	-	-	-	0	0%	No
Clam	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	18	16.0	48.0	35.0	48.0	18	-	-	-	-	0	0%	No
Clam	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	18	11.0	11.0	35.0	40.0	18	-	-	-	-	0	0%	No
Clam	SVOCs	Total	Fluoranthene	ug/kg	Wet	18	-	-	-	-	0	-	18	8.50	17.0	18	100%	No
Clam	SVOCs	Total	Fluorene	ug/kg	Wet	18	-	-	-	-	0	-	18	1.50	3.10	18	100%	No
Clam	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	18	0.320	0.320	2.30	2.50	11	7	-	0.800	2.00	7	39%	No
Clam	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	18	-	-	35.0	39.0	0	6	12	13.0	110	18	100%	No
Clam	SVOCs	Total	Phenanthrene	ug/kg	Wet	18	-	-	-	-	0	-	18	6.70	14.0	18	100%	No
Clam	SVOCs	Total	Pyrene	ug/kg	Wet	18	2.00	5.60	2.50	5.60	18	-	-	-	-	0	0%	No

Table I-11a
Data Summary for Random Reference Samples
Bradford Island - River Operable Unit
(7 of 7)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Minimum MDL of NDs	Maximum MDL of NDs	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Number of Detects Above MRL	Min Detected Value	Max Detected Value	Number of Detections	Detection Rate	Limited Data Set (< 8 samples)

Notes

% = percent
Dry = Dry weight
Max = maximum
MDL = method detection limit
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
Min = minimum
MRL = methode reporting limit
ND = non-detect
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
No. = number
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
Wet = Wet Weight

Table I-11b
PCB Congener Data Summary for Random Reference Samples
Bradford Island - River Operable Unit
(1 of 3)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Minimum RDL of NDs	Maximum RDL of NDs	Number of NDs below RDL	Minimum EMPC Value	Maximum EMPC Value	Number of EMPC Results	Minimum Detected (not ND or EMPC)	Maximum Detected (not ND or EMPC)	Number of Detections (not ND or EMPC)	Detection Rate	Limited Data Set (<8 Samples)
Surface Water	Column	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet	5	0.0410	0.0430	2	-	-	-	0.0470	0.0920	3	60%	Yes
Surface Water	Filter	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet	5	0.0320	0.0390	2	-	-	-	0.0470	0.0710	3	60%	Yes
Surface Water	C+F	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet	5	0.0820	0.0820	-	-	-	-	0.0790	0.151	4	80%	Yes
Surface Water	Column	81	3,4,4',5-Tetrachlorobiphenyl	pg/L	Wet	5	0.00620	0.00730	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	81	3,4,4',5-Tetrachlorobiphenyl	pg/L	Wet	5	0.00430	0.00570	5	-	-	-	-	-	0	0%	Yes
Surface Water	C+F	81	3,4,4',5-Tetrachlorobiphenyl	pg/L	Wet	5	0.0109	0.0128	-	-	-	-	-	-	0	0%	Yes
Surface Water	Column	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.125	0.178	5	100%	Yes
Surface Water	Filter	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.262	0.403	5	100%	Yes
Surface Water	C+F	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.387	0.563	5	100%	Yes
Surface Water	Column	114	2,3,4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	0.00900	0.0170	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	114	2,3,4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	0.0140	0.0220	5	-	-	-	-	-	0	0%	Yes
Surface Water	C+F	114	2,3,4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	0.0250	0.0340	-	-	-	-	-	-	0	0%	Yes
Surface Water	Column	118	2,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.378	0.593	5	100%	Yes
Surface Water	Filter	118	2,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.743	1.22	5	100%	Yes
Surface Water	C+F	118	2,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	1.12	1.77	5	100%	Yes
Surface Water	Column	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/L	Wet	5	0.00700	0.0140	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/L	Wet	5	0.0170	0.0260	5	-	-	-	-	-	0	0%	Yes
Surface Water	C+F	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/L	Wet	5	0.0240	0.0400	-	-	-	-	-	-	0	0%	Yes
Surface Water	Column	126	3,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	0.00390	0.00700	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	126	3,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	0.00550	0.00800	5	-	-	-	-	-	0	0%	Yes
Surface Water	C+F	126	3,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	0.0102	0.0150	-	-	-	-	-	-	0	0%	Yes
Surface Water	Column	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet	5	0.0260	0.0360	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.0850	0.115	5	100%	Yes
Surface Water	C+F	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.111	0.145	5	100%	Yes
Surface Water	Column	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	0.0130	0.0180	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.0410	0.0700	5	100%	Yes
Surface Water	C+F	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	-	-	-	-	-	-	0.0540	0.0860	5	100%	Yes
Surface Water	Column	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	0.00100	0.00300	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	0.00170	0.00340	5	-	-	-	-	-	0	0%	Yes
Surface Water	C+F	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	0.00300	0.00580	-	-	-	-	-	-	0	0%	Yes
Surface Water	Column	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/L	Wet	5	0.00140	0.00360	5	-	-	-	-	-	0	0%	Yes
Surface Water	Filter	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/L	Wet	5	0.00400	0.00600	5	-	-	-	-	-	0	0%	Yes
Surface Water	C+F	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/L	Wet	5	0.00600	0.00860	-	-	-	-	-	-	0	0%	Yes
Surface Water	Column		Total PCBs As Congeners (KM, capped)	pg/L	Wet	5	-	-	-	-	-	-	109	154	5	100%	Yes
Surface Water	Filter		Total PCBs As Congeners (KM, capped)	pg/L	Wet	5	-	-	-	-	-	-	21.2	26.7	5	100%	Yes
Surface Water	C+F		Total PCBs As Congeners (KM, capped)	pg/L	Wet	5	-	-	-	-	-	-	130	178	5	100%	Yes
Sediment	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Dry	18	-	-	-	-	-	-	0.434	2.01	18	100%	No
Sediment	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Dry	18	0.0556	0.0988	12	0.0490	0.100	4	0.0580	0.143	2	11%	No
Sediment	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Dry	18	-	-	-	-	-	-	2.96	27.5	18	100%	No
Sediment	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Dry	18	-	-	-	0.337	0.352	2	0.154	1.63	16	89%	No
Sediment	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	18	-	-	-	-	-	-	8.31	70.5	18	100%	No
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	18	0.309	0.446	7	0.172	0.235	2	0.272	1.22	9	50%	No
Sediment	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	18	0.0583	0.139	2	0.0930	0.185	7	0.0840	0.337	9	50%	No

Table I-11b
PCB Congener Data Summary for Random Reference Samples
Bradford Island - River Operable Unit
(2 of 3)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Minimum RDL of NDs	Maximum RDL of NDs	Number of NDs below RDL	Minimum EMPC Value	Maximum EMPC Value	Number of EMPC Results	Minimum Detected (not ND or EMPC)	Maximum Detected (not ND or EMPC)	Number of Detections (not ND or EMPC)	Detection Rate	Limited Data Set (<8 Samples)
Sediment	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Dry	18	-	-	-	-	-	-	0.930	8.50	18	100%	No
Sediment	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	18	1.01	1.10	2	0.482	0.482	1	0.761	3.84	15	83%	No
Sediment	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	18	0.0542	0.200	17	0.0860	0.0860	1	-	-	0	0%	No
Sediment	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Dry	18	-	-	-	0.159	0.357	4	0.0720	0.573	14	78%	No
Sediment	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Dry	18	-	-	-	-	-	-	0.161	1.20	18	100%	No
Crayfish	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	1.30	4.66	17	100%	No
Crayfish	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	17	0.104	0.401	11	0.146	0.250	4	0.167	0.176	2	12%	No
Crayfish	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	1.97	24.8	17	100%	No
Crayfish	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	2.36	8.15	17	100%	No
Crayfish	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	52.6	323	17	100%	No
Crayfish	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	1.93	7.36	17	100%	No
Crayfish	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	0.207	1.96	9	0.243	0.261	2	0.377	0.530	6	35%	No
Crayfish	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	12.3	39.1	17	100%	No
Crayfish	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	17	-	-	-	-	-	-	8.16	30.1	17	100%	No
Crayfish	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	17	0.0911	0.325	17	-	-	-	-	-	0	0%	No
Crayfish	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	17	-	-	-	1.14	1.14	1	0.767	2.20	16	94%	No
Crayfish	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	17	-	-	-	-	-	-	0.366	1.94	17	100%	No
Smallmouth Bass	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	25.4	195	19	100%	No
Smallmouth Bass	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	19	2.53	20.5	7	-	-	-	2.02	15.9	12	63%	No
Smallmouth Bass	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	498	23,400	19	100%	No
Smallmouth Bass	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	19	-	-	-	68.4	85.6	2	29.2	2,910	17	89%	No
Smallmouth Bass	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	1,330	98,600	19	100%	No
Smallmouth Bass	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	19	-	-	-	43.5	47.0	2	24.8	1,830	17	89%	No
Smallmouth Bass	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	19	10.7	30.1	5	11.6	11.6	1	5.61	74.6	13	68%	No
Smallmouth Bass	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	194	20,000	19	100%	No
Smallmouth Bass	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	19	-	-	-	-	-	-	84.3	6,540	19	100%	No
Smallmouth Bass	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	19	1.30	10.9	19	-	-	-	-	-	0	0%	No
Smallmouth Bass	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	19	-	-	-	16.5	23.2	4	13.3	532	15	79%	No
Smallmouth Bass	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	19	-	-	-	-	-	-	22.1	499	19	100%	No
Sculpin	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	5.19	25.9	18	100%	No
Sculpin	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	18	0.711	0.711	1	0.689	2.21	17	-	-	0	0%	No
Sculpin	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	358	1,040	18	100%	No
Sculpin	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	25.0	82.1	18	100%	No
Sculpin	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	1,050	3,870	18	100%	No
Sculpin	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	18	-	-	-	32.0	32.0	1	15.3	47.0	17	94%	No
Sculpin	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	18	-	-	-	3.35	3.35	1	2.54	5.93	17	94%	No
Sculpin	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	140	464	18	100%	No
Sculpin	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	51.9	175	18	100%	No
Sculpin	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	18	2.14	9.29	18	-	-	-	-	-	0	0%	No
Sculpin	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	18	0.318	0.318	1	11.0	11.0	1	5.20	17.2	16	89%	No
Sculpin	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	18	-	-	-	-	-	-	12.2	38.3	18	100%	No
Clam	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	33.2	46.8	18	100%	No

Table I-11b
PCB Congener Data Summary for Random Reference Samples
Bradford Island - River Operable Unit
(3 of 3)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Minimum RDL of NDs	Maximum RDL of NDs	Number of NDs below RDL	Minimum EMPC Value	Maximum EMPC Value	Number of EMPC Results	Minimum Detected (not ND or EMPC)	Maximum Detected (not ND or EMPC)	Number of Detections (not ND or EMPC)	Detection Rate	Limited Data Set (<8 Samples)
Clam	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	18	-	-	-	0.961	2.23	8	1.80	2.75	10	56%	No
Clam	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	350	556	18	100%	No
Clam	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	21.3	33.0	18	100%	No
Clam	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	1,910	2,820	18	100%	No
Clam	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	36.8	54.0	18	100%	No
Clam	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	18	5.88	5.88	1	-	-	-	4.03	5.64	17	94%	No
Clam	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	123	166	18	100%	No
Clam	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	18	-	-	-	-	-	-	123	170	18	100%	No
Clam	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	18	0.698	1.73	18	-	-	-	-	-	0	0%	No
Clam	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	18	-	-	-	1.51	1.51	1	1.44	2.41	17	94%	No
Clam	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	18	-	-	-	-	-	-	26.9	34.5	18	100%	No

Notes
For C+F RDL values, the values shown are the sum of the RDLs and/or EMPCs for the ND column and filter results.

% = percent
Dry = Dry weight
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
ND = non-detect
PCB = polychlorinated biphenyl
pg/kg = picograms per kilogram
pg/L = picograms per liter
RDL = reported detection limit
Wet = Wet Weight

Table I-12
Statistical Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 6)

											Statistics - ND censored at the MDL				Statistics - ND censored at the MRL			
Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	Metals	Total	Aluminum	0-1 ft	mg/kg	10	10	14,000	15,200	19,100	-	-	16,200	Use 95% Student's-t UCL	-	-	16,200	Use 95% Student's-t UCL
Soil	Metals	Total	Aluminum	0-3 ft	mg/kg	12	12	13,000	13,000	19,100	-	-	15,200	Use 95% Student's-t UCL	-	-	15,200	Use 95% Student's-t UCL
Soil	Metals	Total	Aluminum	0-10 ft	mg/kg	26	26	10,700	10,600	23,100	-	-	12,500	Use 95% Student's-t UCL	-	-	12,500	Use 95% Student's-t UCL
Soil	Metals	Total	Antimony	0-1 ft	mg/kg	20	4	2.80	3.35	4.20	0.815	1.21	1.36	95% KM (t) UCL	0.815	1.21	1.36	95% KM (t) UCL
Soil	Metals	Total	Antimony	0-3 ft	mg/kg	22	6	2.44	2.71	4.20	0.958	1.23	1.48	95% KM (t) UCL	0.958	1.23	1.48	95% KM (t) UCL
Soil	Metals	Total	Antimony	0-10 ft	mg/kg	36	20	2.29	1.22	8.19	1.50	1.86	2.05	95% KM (t) UCL	1.50	1.86	2.05	95% KM (t) UCL
Soil	Metals	Total	Arsenic	0-1 ft	mg/kg	21	21	5.33	3.70	30.1	-	-	11.1	Use 95% Chebyshev (Mean, Sd) UCL	-	-	11.1	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Arsenic	0-3 ft	mg/kg	23	23	5.30	3.70	30.1	-	-	10.5	Use 95% Chebyshev (Mean, Sd) UCL	-	-	10.5	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Arsenic	0-10 ft	mg/kg	37	37	4.73	3.70	30.1	-	-	8.11	Use 95% Chebyshev (Mean, Sd) UCL	-	-	8.11	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Barium	0-1 ft	mg/kg	21	21	116	111	242	-	-	132	Use 95% Approximate Gamma UCL	-	-	132	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Barium	0-3 ft	mg/kg	23	23	114	111	242	-	-	130	Use 95% Approximate Gamma UCL	-	-	130	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Barium	0-10 ft	mg/kg	37	37	104	108	242	-	-	117	Use 95% Approximate Gamma UCL	-	-	117	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Beryllium	0-1 ft	mg/kg	21	17	0.396	0.400	0.576	0.378	0.0842	0.411	95% KM (t) UCL	0.380	0.0834	0.413	95% KM (t) UCL
Soil	Metals	Total	Beryllium	0-3 ft	mg/kg	23	17	0.396	0.400	0.576	0.371	0.0834	0.402	95% KM (t) UCL	0.376	0.0820	0.406	95% KM (t) UCL
Soil	Metals	Total	Beryllium	0-10 ft	mg/kg	37	26	0.344	0.300	0.576	0.298	0.111	0.332	95% KM (Percentile Bootstrap) UCL	0.321	0.0987	0.351	95% KM (t) UCL
Soil	Metals	Total	Cadmium	0-1 ft	mg/kg	21	15	0.940	0.670	2.09	0.769	0.524	0.974	95% KM (Percentile Bootstrap) UCL	0.769	0.524	0.985	95% KM (Percentile Bootstrap) UCL
Soil	Metals	Total	Cadmium	0-3 ft	mg/kg	23	17	1.08	0.720	3.54	0.888	0.756	1.17	95% KM (Percentile Bootstrap) UCL	0.888	0.756	1.19	95% KM (Percentile Bootstrap) UCL
Soil	Metals	Total	Cadmium	0-10 ft	mg/kg	37	31	1.28	1.23	3.54	1.13	0.783	1.37	95% KM (BCA) UCL	1.13	0.783	1.38	95% KM (BCA) UCL
Soil	Metals	Total	Chromium	0-1 ft	mg/kg	21	21	77.2	23.0	801	-	-	242	Use 95% Chebyshev (Mean, Sd) UCL	-	-	242	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Chromium	0-3 ft	mg/kg	23	23	190	23.1	1,950	-	-	594	Use 95% Chebyshev (Mean, Sd) UCL	-	-	594	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Chromium	0-10 ft	mg/kg	37	37	242	27.0	2,300	-	-	656	Use 95% Chebyshev (Mean, Sd) UCL	-	-	656	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Cobalt	0-1 ft	mg/kg	10	10	11.1	10.2	22.7	-	-	14.2	Use 95% Approximate Gamma UCL	-	-	14.2	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Cobalt	0-3 ft	mg/kg	12	12	14.5	11.0	41.0	-	-	20.2	Use 95% Approximate Gamma UCL	-	-	20.2	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Cobalt	0-10 ft	mg/kg	26	26	15.3	12.0	42.3	-	-	18.6	Use 95% Approximate Gamma UCL	-	-	18.6	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Copper	0-1 ft	mg/kg	21	21	73.6	45.4	494	-	-	170	Use 95% Chebyshev (Mean, Sd) UCL	-	-	170	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Copper	0-3 ft	mg/kg	23	23	85.2	45.4	494	-	-	191	Use 95% Chebyshev (Mean, Sd) UCL	-	-	191	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Copper	0-10 ft	mg/kg	37	37	79.0	43.2	494	-	-	152	Use 95% Chebyshev (Mean, Sd) UCL	-	-	152	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Lead	0-1 ft	mg/kg	21	21	211	131	741	-	-	332	Use 95% Approximate Gamma UCL	-	-	332	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Lead	0-3 ft	mg/kg	29	29	342	147	1,660	-	-	511	Use 95% Approximate Gamma UCL	-	-	511	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Lead	0-10 ft	mg/kg	43	43	366	157	1,660	-	-	796	Use 95% H-UCL	-	-	796	Use 95% H-UCL
Soil	Metals	Total	Manganese	0-1 ft	mg/kg	21	21	382	366	720	-	-	437	Use 95% Approximate Gamma UCL	-	-	437	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Manganese	0-3 ft	mg/kg	23	23	462	367	1,710	-	-	585	or 95% Modified-t UCL	-	-	585	or 95% Modified-t UCL
Soil	Metals	Total	Manganese	0-10 ft	mg/kg	37	37	463	372	1,710	-	-	546	or 95% Modified-t UCL	-	-	546	or 95% Modified-t UCL
Soil	Metals	Total	Mercury	0-1 ft	mg/kg	23	18	0.524	0.160	4.15	0.427	0.851	1.57	97.5% KM (Chebyshev) UCL	0.427	0.851	1.57	97.5% KM (Chebyshev) UCL
Soil	Metals	Total	Mercury	0-3 ft	mg/kg	25	20	0.478	0.126	4.15	0.397	0.823	1.45	97.5% KM (Chebyshev) UCL	0.397	0.823	1.45	97.5% KM (Chebyshev) UCL
Soil	Metals	Total	Mercury	0-10 ft	mg/kg	39	34	0.366	0.120	4.15	0.327	0.686	1.02	97.5% KM (Chebyshev) UCL	0.327	0.686	1.02	97.5% KM (Chebyshev) UCL
Soil	Metals	Total	Nickel	0-1 ft	mg/kg	21	21	58.4	20.0	570	-	-	175	Use 95% Chebyshev (Mean, Sd) UCL	-	-	175	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Nickel	0-3 ft	mg/kg	23	23	148	20.2	1,610	-	-	472	Use 95% Chebyshev (Mean, Sd) UCL	-	-	472	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Nickel	0-10 ft	mg/kg	37	37	166	21.0	1,760	-	-	455	Use 95% Chebyshev (Mean, Sd) UCL	-	-	455	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Selenium	0-1 ft	mg/kg	21	3	0.451	0.300	0.848	0.245	0.144	0.315	95% KM (t) UCL	0.245	0.144	0.315	95% KM (t) UCL
Soil	Metals	Total	Selenium	0-3 ft	mg/kg	23	5	0.492	0.300	0.879	0.276	0.192	0.356	95% KM (t) UCL	0.276	0.192	0.356	95% KM (t) UCL
Soil	Metals	Total	Selenium	0-10 ft	mg/kg	37	11	0.332	0.226	0.879	0.190	0.176	0.262	95% KM (% Bootstrap) UCL	0.223	0.167	0.277	95% KM (t) UCL
Soil	Metals	Total	Silver	0-1 ft	mg/kg	21	7	0.548	0.400	1.50	0.346	0.286	0.468	95% KM (t) UCL	0.346	0.286	0.468	95% KM (t) UCL
Soil	Metals	Total	Silver	0-3 ft	mg/kg	23	9	0.523	0.400	1.50	0.327	0.304	0.450	95% KM (t) UCL	0.327	0.304	0.450	95% KM (t) UCL
Soil	Metals	Total	Silver	0-10 ft	mg/kg	37	23	0.503	0.300	1.52	0.387	0.403	0.506	95% KM (Percentile Bootstrap) UCL	0.387	0.403	0.505	95% KM (Percentile Bootstrap) UCL
Soil	Metals	Total	Thallium	0-1 ft	mg/kg	21	2	0.237	0.237	0.378	0.109	0.0602	0.141	95% KM (t) UCL	0.109	0.0602	0.141	95% KM (t) UCL
Soil	Metals	Total	Thallium	0-3 ft	mg/kg	23	4	0.154	0.0891	0.378	0.0917	0.0629	0.122	95% KM (t) UCL	0.0917	0.0629	0.122	95% KM (t) UCL
Soil	Metals	Total	Thallium	0-10 ft	mg/kg	37	18	0.118	0.0974	0.378	0.109	0.0591	0.129	95% KM (t) UCL	0.109	0.0591	0.129	95% KM (t) UCL
Soil	Metals	Total	Vanadium	0-1 ft	mg/kg	10	10	42.3	39.4	56.3	-	-	47.0	Use 95% Student's-t UCL	-	-	47.0	Use 95% Student's-t UCL
Soil	Metals	Total	Vanadium	0-3 ft	mg/kg	12	12	43.2	41.0	56.3	-	-	47.6	Use 95% Student's-t UCL	-	-	47.6	Use 95% Student's-t UCL
Soil	Metals	Total	Vanadium	0-10 ft	mg/kg	26	26	48.0	42.6	93.4	-	-	54.4	Use 95% Approximate Gamma UCL	-	-	54.4	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Zinc	0-1 ft	mg/kg	21	21	164	144	635	-	-	207	Use 95% Approximate Gamma UCL	-	-	207	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Zinc	0-3 ft	mg/kg	23	23	204	144	1,140	-	-	417	Use 95% Chebyshev (Mean, Sd) UCL	-	-	417	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Zinc	0-10 ft	mg/kg	37	37	204	151	1,140	-	-	245	Use 95% H-UCL	-	-	245	Use 95% H-UCL
Soil	Butyltins	Total	Dibutyltin	0-1 ft	ug/kg	7	2	20.1	20.1	20.2	20.0	0.0700	-	-	20.0	0.0700	-	-
Soil	Butyltins	Total	Dibutyltin	0-3 ft	ug/kg	9	2	20.1	20.1	20.2	20.0	0.0629	20.1	95% KM (t) UCL	20.0	0.0629	20.1	95% KM (t) UCL
Soil	Butyltins	Total	Dibutyltin	0-10 ft	ug/kg	22	2	20.1	20.1	20.2	20.0	0.0417	20.0	95% KM (t) UCL	20.0	0.0426	20.0	95% KM (t) UCL
Soil	Butyltins	Total	Monobutyltin	0-1 ft	ug/kg	7	2	23.5	23.5	38.0	13.2	10.1	-	-	13.2	10.1	-	-
Soil	Butyltins	Total	Monobutyltin	0-3 ft	ug/kg	9	2	23.5	23.5	38.0	12.3	9.09	38.0	95% KM (BCA) UCL	12.3	9.09	38.0	95% KM (BCA) UCL
Soil	Butyltins	Total	Monobutyltin	0-10 ft	ug/kg	22	2	23.5	23.5	38.0	10.4	6.02	-	-	10.4	6.02	38.0	95% KM (BCA) UCL
Soil	Butyltins	Total	Tributyltin	0-1 ft	ug/kg	7	3	59.7	9.01	165	28.5	55.7	-	-	28.5	55.7	-	-
Soil	Butyltins	Total	Tributyltin	0-3 ft	ug/kg	9	4	48.6	12.2	165	24.5	49.8	60.1	95% KM (t) UCL	24.5	49.8	60.1	95% KM (t) UCL
Soil	Butyltins	Total	Tributyltin	0-10 ft	ug/kg	22	4	48.6	12.2	165	13.0	33.2	27.1	95% KM (t) UCL	13.1	33.2	27.2	95% KM (t) UCL
Soil	Herbicides	Total	2,4,5-T	0-1 ft	ug/kg	12	2	78.0	78.0	93.0	65.5	8.29	71.6	95% KM (t) UCL	65.5	8.29	71.6	95% KM (t) UCL
Soil	Herbicides	Total	2,4,5-T	0-3 ft	ug/kg	14	2	78.0	78.0	93.0	65.1	7.73	70.3	95% KM (t) UCL	65.1	7.73	70.3	95% KM (t) UCL
Soil	Herbicides	Total	2,4,5-T	0-10 ft	ug/kg	21	2	78.0	78.0	93.0	64.4	6.39	67.8	95% KM (t) UCL	64.4	6.39	67.8	95% KM (t) UCL
Soil	Herbicides	Total	Dichloroprop	0-1 ft	ug/kg	12	2	175	175	180	171	3.50	175	95% KM (t) UCL	171	3.50	175	95% KM (t) UCL

Table I-12
Statistical Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(2 of 6)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	Herbicides	Total	Dichloroprop	0-3 ft	ug/kg	14	2	175	175	180	171	3.14	174	95% KM (t) UCL	171	3.14	174	95% KM (t) UCL
Soil	Herbicides	Total	Dichloroprop	0-10 ft	ug/kg	21	2	175	175	180	171	2.42	172	95% KM (t) UCL	171	2.42	172	95% KM (t) UCL
Soil	Herbicides	Total	MCPP	0-1 ft	ug/kg	12	2	11,800	11,800	14,000	10,100	1,580	11,700	95% KM (t) UCL	10,100	1,580	11,700	95% KM (t) UCL
Soil	Herbicides	Total	MCPP	0-3 ft	ug/kg	14	2	11,800	11,800	14,000	10,000	1,410	11,200	95% KM (t) UCL	10,000	1,410	11,200	95% KM (t) UCL
Soil	Herbicides	Total	MCPP	0-10 ft	ug/kg	21	2	11,800	11,800	14,000	9,780	1,090	10,400	95% KM (t) UCL	9,780	1,090	10,400	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDT	0-1 ft	ug/kg	21	7	16.5	14.0	28.0	9.76	6.08	12.2	95% KM (t) UCL	9.76	6.08	12.2	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDT	0-3 ft	ug/kg	23	7	16.5	14.0	28.0	9.47	5.89	11.8	95% KM (t) UCL	9.47	5.89	11.8	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDT	0-10 ft	ug/kg	30	7	16.5	14.0	28.0	8.75	5.32	10.5	95% KM (t) UCL	8.75	5.32	10.5	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (technical)	0-1 ft	ug/kg	1	1	1,560	1,560	1,560	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Chlordane (technical)	0-3 ft	ug/kg	3	3	573	92.7	1,560	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Chlordane (technical)	0-10 ft	ug/kg	10	6	372	79.2	1,560	243	452	1,220	97.5% KM (Chebyshev) UCL	243	452	1,220	97.5% KM (Chebyshev) UCL
Soil	Pesticides	Total	Heptachlor	0-1 ft	ug/kg	21	1	2.83	2.83	2.83	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Heptachlor	0-3 ft	ug/kg	23	2	2.95	2.95	3.07	2.84	0.0489	2.86	95% KM (t) UCL	2.84	0.0489	2.86	95% KM (t) UCL
Soil	Pesticides	Total	Heptachlor	0-10 ft	ug/kg	30	2	2.95	2.95	3.07	2.84	0.0431	2.86	95% KM (t) UCL	2.84	0.0431	2.86	95% KM (t) UCL
Soil	PCB Aroclors	Total	Aroclor 1248	0-1 ft	ug/kg	27	2	515	515	968	95.1	171	386	97.5% KM (Chebyshev) UCL	95.1	171	386	97.5% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Aroclor 1248	0-3 ft	ug/kg	29	2	515	515	968	92.8	165	364	97.5% KM (Chebyshev) UCL	92.8	165	364	97.5% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Aroclor 1248	0-10 ft	ug/kg	43	2	515	515	968	82.6	137	-	-	82.6	137	-	-
Soil	PCB Aroclors	Total	Aroclor 1254	0-1 ft	ug/kg	27	9	29.0	24.0	78.6	16.2	16.5	22.5	95% KM (t) UCL	16.5	16.3	22.8	95% KM (t) UCL
Soil	PCB Aroclors	Total	Aroclor 1254	0-3 ft	ug/kg	29	11	37.6	26.0	104	20.4	23.2	31.1	95% KM (Percentile Bootstrap) UCL	20.7	23.0	31.7	95% KM (Percentile Bootstrap) UCL
Soil	PCB Aroclors	Total	Aroclor 1254	0-10 ft	ug/kg	43	16	67.9	32.1	499	30.0	75.6	60.4	95% KM (BCA) UCL	30.5	75.4	60.8	95% KM (BCA) UCL
Soil	PCB Aroclors	Total	Aroclor 1260	0-1 ft	ug/kg	27	22	94.6	47.2	660	81.2	138	251	97.5% KM (Chebyshev) UCL	81.2	138	251	97.5% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Aroclor 1260	0-3 ft	ug/kg	29	24	92.1	47.2	660	80.1	133	190	95% KM (Chebyshev) UCL	80.1	133	190	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Aroclor 1260	0-10 ft	ug/kg	43	36	87.6	44.2	660	75.5	127	161	95% KM (Chebyshev) UCL	75.7	127	161	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	ug/kg	27	22	177	97.5	996	154	224	429	97.5% KM (Chebyshev) UCL	158	224	350	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-3 ft	ug/kg	29	24	175	104	996	154	216	410	97.5% KM (Chebyshev) UCL	158	216	337	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-10 ft	ug/kg	43	36	164	82.0	996	143	207	283	95% KM (Chebyshev) UCL	150	207	289	95% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	mg/kg	18	17	650	126	5,100	615	1,260	3,670	99% KM (Chebyshev) UCL	615	1,260	3,670	99% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-3 ft	mg/kg	20	19	609	126	5,100	579	1,210	3,340	99% KM (Chebyshev) UCL	579	1,210	3,340	99% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-10 ft	mg/kg	34	30	1,280	194	9,740	1,130	2,390	5,270	99% KM (Chebyshev) UCL	1,130	2,390	5,270	99% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	mg/kg	18	17	3,280	676	23,900	3,110	6,020	17,700	99% KM (Chebyshev) UCL	3,110	6,020	17,700	99% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Residual Range Organics	0-3 ft	mg/kg	20	19	3,020	676	23,900	2,880	5,750	16,000	99% KM (Chebyshev) UCL	2,880	5,750	16,000	99% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Residual Range Organics	0-10 ft	mg/kg	34	32	5,740	690	41,900	5,410	11,100	24,700	99% KM (Chebyshev) UCL	5,410	11,100	24,700	99% KM (Chebyshev) UCL
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	mg/kg	13	3	356	267	586	247	99.0	307	95% KM (t) UCL	247	99.0	307	95% KM (t) UCL
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-3 ft	mg/kg	15	4	268	240	586	73.8	159	157	95% KM (t) UCL	73.8	159	157	95% KM (t) UCL
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-10 ft	mg/kg	22	6	179	109	586	50.9	135	105	95% KM (t) UCL	50.9	135	105	95% KM (t) UCL
Soil	SVOCs	Total	Benzoic Acid	0-1 ft	ug/kg	23	7	173	130	553	123	142	200	95% KM (t) UCL	126	146	206	95% KM (t) UCL
Soil	SVOCs	Total	Benzoic Acid	0-3 ft	ug/kg	25	9	189	140	553	148	139	218	95% KM (t) UCL	150	142	222	95% KM (t) UCL
Soil	SVOCs	Total	Benzoic Acid	0-10 ft	ug/kg	32	10	200	166	553	114	134	176	95% KM (Percentile Bootstrap) UCL	152	133	214	95% KM (t) UCL
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	ug/kg	27	24	2,010	425	21,000	1,800	4,030	9,680	99% KM (Chebyshev) UCL	1,840	4,020	9,730	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-3 ft	ug/kg	29	26	1,970	595	21,000	1,780	3,890	6,380	97.5% KM (Chebyshev) UCL	1,820	3,880	6,430	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-10 ft	ug/kg	36	33	1,800	770	21,000	1,670	3,510	4,260	95% KM (Chebyshev) UCL	1,700	3,510	4,300	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	ug/kg	26	3	52.6	67.2	68.7	28.1	15.6	36.6	95% KM (t) UCL	29.1	16.6	38.7	95% KM (t) UCL
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-3 ft	ug/kg	28	3	52.6	67.2	68.7	27.4	14.8	34.9	95% KM (t) UCL	29.1	16.6	38.7	95% KM (t) UCL
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-10 ft	ug/kg	35	5	69.0	67.2	152	31.8	28.1	42.7	95% KM (t) UCL	35.5	30.4	48.8	95% KM (t) UCL
Soil	SVOCs	Total	Carbazole	0-1 ft	ug/kg	27	19	384	144	2,650	279	547	751	95% KM (Chebyshev) UCL	280	547	752	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Carbazole	0-3 ft	ug/kg	29	21	510	210	2,840	378	706	964	95% KM (Chebyshev) UCL	379	706	964	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Carbazole	0-10 ft	ug/kg	36	26	546	215	2,840	402	684	909	95% KM (Chebyshev) UCL	403	684	910	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Dibenzofuran	0-1 ft	ug/kg	27	11	160	67.7	810	84.0	159	152	95% KM (BCA) UCL	87.3	165	162	95% KM (BCA) UCL
Soil	SVOCs	Total	Dibenzofuran	0-3 ft	ug/kg	29	13	174	76.0	810	96.2	165	164	95% KM (BCA) UCL	99.9	170	171	95% KM (BCA) UCL
Soil	SVOCs	Total	Dibenzofuran	0-10 ft	ug/kg	36	18	154	79.5	810	93.4	152	138	95% KM (t) UCL	97.8	155	144	95% KM (t) UCL
Soil	SVOCs	Total	Diethyl Phthalate	0-1 ft	ug/kg	26	3	55.8	50.0	73.4	46.2	7.17	50.0	95% KM (t) UCL	46.8	7.86	51.3	95% KM (t) UCL
Soil	SVOCs	Total	Diethyl Phthalate	0-3 ft	ug/kg	28	5	45.6	44.0	73.4	33.8	11.3	38.9	95% KM (t) UCL	34.8	12.2	40.9	95% KM (t) UCL
Soil	SVOCs	Total	Diethyl Phthalate	0-10 ft	ug/kg	35	6	43.1	37.9	73.4	32.4	9.79	36.1	95% KM (t) UCL	34.5	11.8	40.1	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	ug/kg	26	4	496	84.5	1,800	98.5	342	232	95% KM (t) UCL	104	355	248	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-3 ft	ug/kg	28	4	496	84.5	1,800	93.6	330	217	95% KM (t) UCL	98.5	342	231	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-10 ft	ug/kg	35	4	496	84.5	1,800	81.0	296	180	95% KM (t) UCL	84.1	305	189	95% KM (t) UCL
Soil	SVOCs	Total	Pentachlorophenol	0-1 ft	ug/kg	27	2	136	136	201	81.2	33.2	103	95% KM (t) UCL	81.2	33.2	103	95% KM (t) UCL
Soil	SVOCs	Total	Pentachlorophenol	0-3 ft	ug/kg	29	2	136	136	201	80.1	31.2	98.8	95% KM (t) UCL	80.1	31.2	98.8	95% KM (t) UCL
Soil	SVOCs	Total	Pentachlorophenol	0-10 ft	ug/kg	36	2	136	136	201	77.6	26.3	90.7	95% KM (t) UCL	77.6	26.3	90.7	95% KM (t) UCL
Soil	SVOCs	Total	2-Methylnaphthalene	0-1 ft	ug/kg	27	8	320	66.5	1,530	106	304	213	95% KM (t) UCL	106	304	213	95% KM (t) UCL
Soil	SVOCs	Total	2-Methylnaphthalene	0-3 ft	ug/kg	29	9	290	57.0	1,530	101	294	199	95% KM (t) UCL	101	294	199	95% KM (t) UCL
Soil	SVOCs	Total	2-Methylnaphthalene	0-10 ft	ug/kg	36	12	224	42.7	1,530	85.0	266	170	95% KM (BCA) UCL	85.0	266	186	95% KM (BCA) UCL
Soil	SVOCs	Total	Acenaphthene	0-1 ft	ug/kg	27	19	353	168	2,600	261	523	713	95% KM (Chebyshev) UCL	262	523	713	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Acenaphthene	0-3 ft	ug/kg	33	25	507	171	2,600	395	669	913	95% KM (Chebyshev) UCL	395	669	914	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Acenaphthene	0-10 ft	ug/kg	44	34	553	243	3,040	436	719	915	95% KM (Chebyshev) UCL	441	718	921	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Acenaphthylene	0-1 ft	ug/kg	27	7	32.1	19.0	78.1	19.9	20.1	29.2	95% KM (t) UCL	20.7	21.0	30.8	95% KM (t) UCL
Soil	SVOCs	Total	Acenaphthylene	0-3 ft	ug/kg	33	13	36.0	19.0	111	25.5	25.9	34.9	95% KM (t) UCL	26.2	26.7	36.2	95% KM (t) UCL
Soil	SVOCs	Total	Acenaphthylene	0-10 ft	ug/kg	44	19	37.4	22.0	111	23.9	26.1	31.7	95% KM (t) UCL	26.7	25.2	34.5	95% KM (t) UCL

Table I-12
Statistical Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(3 of 6)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	SVOCs	Total	Anthracene	0-1 ft	ug/kg	27	23	458	110	2,700	398	613	924	95% KM (Chebyshev) UCL	398	613	924	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Anthracene	0-3 ft	ug/kg	33	29	859	400	8,440	761	1,510	1,930	95% KM (Chebyshev) UCL	761	1,510	1,930	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Anthracene	0-10 ft	ug/kg	44	39	1,240	503	8,440	1,100	1,900	2,370	95% KM (Chebyshev) UCL	1,100	1,900	2,370	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluorene	0-1 ft	ug/kg	27	16	197	102	1,200	130	239	222	95% KM (BCA) UCL	133	239	217	95% KM (BCA) UCL
Soil	SVOCs	Total	Fluorene	0-3 ft	ug/kg	33	22	287	142	1,610	203	343	324	95% KM (BCA) UCL	205	342	315	95% KM (BCA) UCL
Soil	SVOCs	Total	Fluorene	0-10 ft	ug/kg	44	32	330	178	1,610	249	375	500	95% KM (Chebyshev) UCL	251	374	501	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Naphthalene	0-1 ft	ug/kg	27	11	213	78.1	823	98.5	212	172	95% KM (t) UCL	98.5	212	172	95% KM (t) UCL
Soil	SVOCs	Total	Naphthalene	0-3 ft	ug/kg	33	17	166	57.0	823	98.7	193	157	95% KM (BCA) UCL	98.7	193	158	95% KM (BCA) UCL
Soil	SVOCs	Total	Naphthalene	0-10 ft	ug/kg	44	24	203	56.6	1,710	120	296	319	95% KM (Chebyshev) UCL	120	296	319	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Phenanthrene	0-1 ft	ug/kg	27	26	1,600	360	12,000	1,540	2,480	3,660	95% KM (Chebyshev) UCL	1,540	2,480	3,660	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Phenanthrene	0-3 ft	ug/kg	33	32	2,580	1,360	21,900	2,500	4,260	5,780	95% KM (Chebyshev) UCL	2,500	4,260	5,780	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Phenanthrene	0-10 ft	ug/kg	44	42	2,930	1,490	21,900	2,800	4,370	5,700	95% KM (Chebyshev) UCL	2,840	4,360	5,750	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	27	26	3,813	1,452	18,674	2,549	3,812	5,810	95% KM (Chebyshev) UCL	2,566	3,828	5,841	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	ug/kg	33	32	4,992	2,616	34,767	4,065	6,694	9,226	95% KM (Chebyshev) UCL	4,079	6,699	9,243	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)anthracene	0-1 ft	ug/kg	27	25	3,200	960	32,000	2,970	6,280	8,340	95% KM (Chebyshev) UCL	2,970	6,280	8,350	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)anthracene	0-3 ft	ug/kg	33	31	4,600	1,400	32,000	4,330	7,300	9,960	95% KM (Chebyshev) UCL	4,330	7,300	9,960	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)anthracene	0-10 ft	ug/kg	44	42	5,920	3,560	32,000	5,650	8,160	11,100	95% KM (Chebyshev) UCL	5,650	8,160	11,100	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)pyrene	0-1 ft	ug/kg	27	25	3,440	1,200	33,000	3,180	6,450	8,700	95% KM (Chebyshev) UCL	3,180	6,450	8,700	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)pyrene	0-3 ft	ug/kg	33	31	5,200	1,600	34,000	4,890	8,130	11,200	95% KM (Chebyshev) UCL	4,890	8,130	11,200	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)pyrene	0-10 ft	ug/kg	44	42	5,890	3,240	34,000	5,620	7,740	10,800	95% KM (Chebyshev) UCL	5,620	7,730	10,800	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	ug/kg	24	23	4,520	680	65,000	4,330	12,900	16,000	95% KM (Chebyshev) UCL	4,330	12,900	16,000	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-3 ft	ug/kg	28	27	5,210	1,200	65,000	5,030	12,100	15,200	95% KM (Chebyshev) UCL	5,030	12,100	15,200	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-10 ft	ug/kg	28	27	5,210	1,200	65,000	5,030	12,100	15,200	95% KM (Chebyshev) UCL	5,030	12,100	15,200	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	ug/kg	27	24	1,780	470	18,000	1,580	3,510	4,590	95% KM (Chebyshev) UCL	1,580	3,510	4,590	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-3 ft	ug/kg	33	30	2,740	830	18,000	2,490	4,320	5,820	95% KM (Chebyshev) UCL	2,490	4,320	5,830	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-10 ft	ug/kg	44	41	3,050	1,800	18,000	2,850	4,040	5,540	95% KM (Chebyshev) UCL	2,850	4,040	5,540	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	ug/kg	24	23	3,610	340	65000	3,460	12,900	30,200	99% KM (Chebyshev) UCL	3,460	12,900	30,200	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-3 ft	ug/kg	28	27	3,560	990	65000	3,440	11,900	26,300	99% KM (Chebyshev) UCL	3,440	11,900	26,300	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-10 ft	ug/kg	28	27	3,560	990	65000	3,440	11,900	26,300	99% KM (Chebyshev) UCL	3,440	11,900	26,300	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-1 ft	ug/kg	3	3	6,960	5,100	14,700	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-3 ft	ug/kg	5	5	12,100	8,490	31,300	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-10 ft	ug/kg	16	16	9,810	8,460	31,300	-	-	13,100	Use 95% Student's-t UCL	-	-	13,100	Use 95% Student's-t UCL
Soil	SVOCs	Total	Chrysene	0-1 ft	ug/kg	27	26	3,230	1,250	32,000	3,110	6,180	8,400	95% KM (Chebyshev) UCL	3,110	6,180	8,400	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Chrysene	0-3 ft	ug/kg	33	32	4,930	1,620	35,300	4,780	8,050	11,000	95% KM (Chebyshev) UCL	4,780	8,050	11,000	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Chrysene	0-10 ft	ug/kg	44	43	5,820	2,990	35,300	5,680	8,030	11,000	95% KM (Chebyshev) UCL	5,680	8,030	11,000	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	ug/kg	27	22	732	150	9,900	612	1,850	4,230	99% KM (Chebyshev) UCL	615	1,850	4,230	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-3 ft	ug/kg	33	28	854	345	9,900	739	1,710	2,060	95% KM (Chebyshev) UCL	742	1,710	2,060	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-10 ft	ug/kg	44	36	783	474	9,900	653	1,500	2,080	97.5% KM (Chebyshev) UCL	655	1,500	2,090	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluoranthene	0-1 ft	ug/kg	27	25	5,740	1,300	54,000	5,320	10,800	14,500	95% KM (Chebyshev) UCL	5,320	10,800	14,600	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluoranthene	0-3 ft	ug/kg	33	31	8,240	2,700	54,000	7,750	12,600	17,500	95% KM (Chebyshev) UCL	7,750	12,600	17,500	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluoranthene	0-10 ft	ug/kg	44	42	10,000	6,920	54,000	9,600	12,600	17,900	95% KM (Chebyshev) UCL	9,600	12,600	17,900	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	ug/kg	27	24	2,010	520	19,000	1,790	3,790	5,040	95% KM (Chebyshev) UCL	1,790	3,790	5,040	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-3 ft	ug/kg	33	30	3,230	800	20,000	2,940	5,000	6,800	95% KM (Chebyshev) UCL	2,940	5,000	6,800	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-10 ft	ug/kg	44	41	3,620	1,990	20,000	3,370	4,710	6,510	95% KM (Chebyshev) UCL	3,380	4,710	6,510	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Pyrene	0-1 ft	ug/kg	27	26	5,130	1,900	40,000	4,940	8,640	12,300	95% KM (Chebyshev) UCL	4,940	8,640	12,300	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Pyrene	0-3 ft	ug/kg	33	32	8,470	2,720	67,100	8,220	13,700	18,800	95% KM (Chebyshev) UCL	8,220	13,700	18,800	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Pyrene	0-10 ft	ug/kg	44	43	10,800	6,700	67,100	10,600	13,900	19,800	95% KM (Chebyshev) UCL	10,600	13,900	19,800	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	27	26	37,211	13,060	367,900	30,467	69,775	90,158	95% KM (Chebyshev) UCL	30,511	69,770	90,198	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	ug/kg	33	32	47,894	16,735	367,900	43,348	75,465	101,525	95% KM (Chebyshev) UCL	43,384	75,455	101,554	95% KM (Chebyshev) UCL
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	ug/kg	18	3	5,420	1,280	14,300	1,460	3,120	3,030	95% KM (t) UCL	1,460	3,120	3,030	95% KM (t) UCL
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-3 ft	ug/kg	20	3	5,420	1,280	14,300	1,380	2,970	2,790	95% KM (t) UCL	1,380	2,970	2,790	95% KM (t) UCL
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-10 ft	ug/kg	27	4	4,060	976	14300	602	2,700	1,620	95% KM (t) UCL	602	2,700	1,620	95% KM (t) UCL
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	ug/kg	18	3	2,080	493	5,410	618	1,160	1,200	95% KM (t) UCL	618	1,160	1,200	95% KM (t) UCL
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-3 ft	ug/kg	20	3	2,080	493	5,410	589	1,110	1,110	95% KM (t) UCL	589	1,110	1,110	95% KM (t) UCL
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-10 ft	ug/kg	27	3	2,080	493	5,410	520	959	906	95% KM (t) UCL	520	959	906	95% KM (t) UCL
Soil	VOCs	Total	Ethylbenzene	0-1 ft	ug/kg	18	1	2,700	2,700	2,700	-	-	-	-	-	-	-	-
Soil	VOCs	Total	Ethylbenzene	0-3 ft	ug/kg	20	1	2,700	2,700	2,700	-	-	-	-	-	-	-	-
Soil	VOCs	Total	Ethylbenzene	0-10 ft	ug/kg	27	2	1,350	1,350	2,700	100	510	1,480	99% KM (Chebyshev) UCL	100	510	1,480	99% KM (Chebyshev) UCL
Soil	VOCs	Total	m,p-Xylenes	0-1 ft	ug/kg	18	1	9,800	9,800	9,800	-	-	-	-	-	-	-	-
Soil	VOCs	Total	m,p-Xylenes	0-3 ft	ug/kg	20	1	9,800	9,800	9,800	-	-	-	-	-	-	-	-
Soil	VOCs	Total	m,p-Xylenes	0-10 ft	ug/kg	27	2	4,900	4,900	9,800	364	1,850	5,380	99% KM (Chebyshev) UCL	364	1,850	5,380	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Naphthalene	0-1 ft	ug/kg	18	3	3,140	542	8,360	943	1,800	4,190	97.5% KM (Chebyshev) UCL	943	1,800	4,190	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	Naphthalene	0-3 ft	ug/kg	20	3	3,140	542	8,360	899	1,710	3,830	97.5% KM (Chebyshev) UCL	899	1,710	3,830	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	Naphthalene	0-10 ft	ug/kg	27	3	3,140	542	8,360	796	1,480	2,980	97.5% KM (Chebyshev) UCL	796	1,480	2,980	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	o-Xylene	0-1 ft	ug/kg	18	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	o-Xylene	0-3 ft	ug/kg	24	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	o-Xylene	0-10 ft	ug/kg	35	3	1,420	0.735	4,260	122	710	1,580	99% KM (Chebyshev) UCL	122	710	1,580	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	ug/kg	18	8	15.5	7.80	65.0	8.87	16.2	16.7	95% KM (t) UCL	8.87	16.2	16.7	95% KM (t) UCL

Table I-12
Statistical Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(4 of 6)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-3 ft	ug/kg	24	14	14.4	7.80	65.0	9.98	15.1	16.5	95% KM (BCA) UCL	9.98	15.1	16.4	95% KM (BCA) UCL
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-10 ft	ug/kg	35	25	16,100	5.19	403,000	11,500	67,100	127,000	99% KM (Chebyshev) UCL	11,500	67,100	127,000	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Toluene	0-1 ft	ug/kg	18	5	1.82	1.30	5.30	1.13	1.20	1.80	95% KM (t) UCL	1.13	1.20	1.80	95% KM (t) UCL
Soil	VOCs	Total	Toluene	0-3 ft	ug/kg	24	10	1.61	1.10	5.30	1.09	1.28	1.64	95% KM (t) UCL	1.11	1.27	1.65	95% KM (t) UCL
Soil	VOCs	Total	Toluene	0-10 ft	ug/kg	35	19	7,000	0.900	133,000	3,800	22,200	42,100	99% KM (Chebyshev) UCL	3,800	22,200	42,100	99% KM (Chebyshev) UCL
MW Soil Subset	Metals	Total	Aluminum	0-1 ft	mg/kg	9	9	14,700	15,500	19,100	-	-	16,700	95% Student's-t UCL	-	-	16,700	95% Student's-t UCL
MW Soil Subset	Metals	Total	Arsenic	0-1 ft	mg/kg	10	10	4.18	3.85	6.20	-	-	4.95	95% Student's-t UCL	-	-	4.95	95% Student's-t UCL
MW Soil Subset	Metals	Total	Barium	0-1 ft	mg/kg	10	10	126	115	242	-	-	151	95% Approximate Gamma UCL	-	-	151	95% Approximate Gamma UCL
MW Soil Subset	Metals	Total	Beryllium	0-1 ft	mg/kg	10	10	0.388	0.400	0.576	-	-	0.447	95% Approximate Gamma UCL	-	-	0.447	95% Approximate Gamma UCL
MW Soil Subset	Metals	Total	Cadmium	0-1 ft	mg/kg	10	10	0.801	0.665	1.70	-	-	1.04	95% Student's-t UCL	-	-	1.04	95% Student's-t UCL
MW Soil Subset	Metals	Total	Chromium	0-1 ft	mg/kg	10	10	109	23.0	801	-	-	447	95% Chebyshev (Mean, Sd) UCL	-	-	447	95% Chebyshev (Mean, Sd) UCL
MW Soil Subset	Metals	Total	Cobalt	0-1 ft	mg/kg	9	9	11.1	9.60	22.7	-	-	14.3	95% Student's-t UCL	-	-	14.3	95% Student's-t UCL
MW Soil Subset	Metals	Total	Copper	0-1 ft	mg/kg	10	10	45.0	45.6	60.5	-	-	52.1	95% Student's-t UCL	-	-	52.1	95% Student's-t UCL
MW Soil Subset	Metals	Total	Lead	0-1 ft	mg/kg	10	10	163	129	680	-	-	324	95% Approximate Gamma UCL	-	-	324	95% Approximate Gamma UCL
MW Soil Subset	Metals	Total	Manganese	0-1 ft	mg/kg	10	10	387	398	614	-	-	447	95% Student's-t UCL	-	-	447	95% Student's-t UCL
MW Soil Subset	Metals	Total	Mercury	0-1 ft	mg/kg	10	10	0.162	0.120	0.320	-	-	0.214	95% Student's-t UCL	-	-	0.214	95% Student's-t UCL
MW Soil Subset	Metals	Total	Nickel	0-1 ft	mg/kg	10	10	79.9	20.6	570	-	-	318	95% Chebyshev (Mean, Sd) UCL	-	-	318	95% Chebyshev (Mean, Sd) UCL
MW Soil Subset	Metals	Total	Selenium	0-1 ft	mg/kg	10	2	0.574	0.574	0.848	0.355	0.164	0.490	95% KM (t) UCL	0.355	0.164	0.490	95% KM (t) UCL
MW Soil Subset	Metals	Total	Silver	0-1 ft	mg/kg	10	5	0.340	0.300	0.500	0.270	0.100	0.335	95% KM (t) UCL	0.270	0.100	0.335	95% KM (t) UCL
MW Soil Subset	Metals	Total	Vanadium	0-1 ft	mg/kg	9	9	43.2	42.6	56.3	-	-	48.2	95% Student's-t UCL	-	-	48.2	95% Student's-t UCL
MW Soil Subset	Metals	Total	Zinc	0-1 ft	mg/kg	10	10	156	154	221	-	-	184	95% Student's-t UCL	-	-	184	95% Student's-t UCL
MW Soil Subset	Pesticides	Total	4,4'-DDT	0-1 ft	ug/kg	10	7	16.5	14.0	28.0	13.5	7.18	18.0	95% KM (t) UCL	13.5	7.18	18.0	95% KM (t) UCL
MW Soil Subset	PCB Aroclors	Total	Aroclor 1254	0-1 ft	ug/kg	10	7	22.7	24.0	49.0	19.0	13.6	28.0	95% KM (t) UCL	19.0	13.6	28.0	95% KM (t) UCL
MW Soil Subset	PCB Aroclors	Total	Aroclor 1260	0-1 ft	ug/kg	10	9	41.9	33.0	92.0	40.4	24.2	55.4	95% KM (t) UCL	40.4	24.2	55.4	95% KM (t) UCL
MW Soil Subset	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	ug/kg	10	9	66.0	54.9	127	66.0	34.3	88.2	95% KM (t) UCL	66.0	34.3	88.2	95% KM (t) UCL
MW Soil Subset	SVOCs	Total	Benzoic Acid	0-1 ft	ug/kg	10	3	190	140	300	153	52.1	193	95% KM (t) UCL	153	52.1	193	95% KM (t) UCL
MW Soil Subset	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	ug/kg	10	9	181	140	420	172	97.6	229	95% KM (BCA) UCL	172	97.6	228	95% KM (BCA) UCL
MW Soil Subset	SVOCs	Total	Carbazole	0-1 ft	ug/kg	10	8	51.6	21.0	210	44.9	58.0	81.5	95% KM (BCA) UCL	44.9	58.0	79.0	95% KM (BCA) UCL
MW Soil Subset	SVOCs	Total	Dibenzofuran	0-1 ft	ug/kg	10	2	33.5	33.5	36.0	31.6	1.57	32.9	95% KM (t) UCL	31.6	1.57	32.9	95% KM (t) UCL
MW Soil Subset	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	ug/kg	10	4	496	84.5	1,800	207	532	563	95% KM (t) UCL	207	532	563	95% KM (t) UCL
MW Soil Subset	SVOCs	Total	Acenaphthene	0-1 ft	ug/kg	14	11	247	66.0	1,160	198	323	592	95% KM (Chebyshev) UCL	198	323	592	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Acenaphthylene	0-1 ft	ug/kg	14	4	12.6	14.0	19.0	12.6	5.73	18.5	95% KM (t) UCL	12.6	5.73	18.5	95% KM (t) UCL
MW Soil Subset	SVOCs	Total	Anthracene	0-1 ft	ug/kg	14	13	303	99.0	1,070	283	362	722	95% KM (Chebyshev) UCL	283	362	722	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Fluorene	0-1 ft	ug/kg	14	10	128	53.0	510	95.4	145	273	95% KM (Chebyshev) UCL	95.4	145	273	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Naphthalene	0-1 ft	ug/kg	14	5	33.4	20.0	79.0	18.7	20.4	30.6	95% KM (t) UCL	18.7	20.4	30.6	95% KM (t) UCL
MW Soil Subset	SVOCs	Total	Phenanthrene	0-1 ft	ug/kg	14	13	1,240	350	4,200	1,150	1,380	2,820	95% KM (Chebyshev) UCL	1,150	1,380	2,820	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	14	13	1,896	556	7,043	1,778	2,188	4,431	95% KM (Chebyshev) UCL	1,778	2,188	4,431	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Benzo(a)anthracene	0-1 ft	ug/kg	14	13	1,740	960	4,500	1,620	1,790	3,790	95% KM (Chebyshev) UCL	1,620	1,790	3,790	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Benzo(a)pyrene	0-1 ft	ug/kg	14	13	2,230	1,200	6,200	2,070	2,330	4,890	95% KM (Chebyshev) UCL	2,070	2,330	4,890	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	ug/kg	14	13	2,600	1,200	8,200	2,420	2,790	5,800	95% KM (Chebyshev) UCL	2,420	2,790	5,800	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	ug/kg	14	13	1,080	480	3,300	1,000	1,150	2,400	95% KM (Chebyshev) UCL	1,000	1,150	2,400	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	ug/kg	14	13	1,070	990	2,500	997	887	2,070	95% KM (Chebyshev) UCL	997	887	2,070	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Chrysene	0-1 ft	ug/kg	14	13	2,100	1,200	5,900	1,960	2,120	4,530	95% KM (Chebyshev) UCL	1,960	2,120	4,530	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	ug/kg	14	13	328	150	1,000	307	345	725	95% KM (Chebyshev) UCL	307	345	725	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Fluoranthene	0-1 ft	ug/kg	14	13	3,810	2,100	14,000	3,550	4,100	8,520	95% KM (Chebyshev) UCL	3,550	4,100	8,520	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	ug/kg	14	13	1,370	530	4,600	1,280	1,610	3,230	95% KM (Chebyshev) UCL	1,280	1,610	3,230	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Pyrene	0-1 ft	ug/kg	14	13	3,390	2,400	9,100	3,160	3,210	7,050	95% KM (Chebyshev) UCL	3,160	3,210	7,050	95% KM (Chebyshev) UCL
MW Soil Subset	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	14	13	19,712	11,350	55,030	18,367	19,916	42,516	95% KM (Chebyshev) UCL	18,367	19,916	42,516	95% KM (Chebyshev) UCL
MW Soil Subset	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	ug/kg	5	4	5.00	4.40	9.70	5.00	3.14	-	-	5.00	3.14	-	-
MW Soil Subset	VOCs	Total	Toluene	0-1 ft	ug/kg	5	4	0.950	0.995	1.46	0.950	0.450	-	-	0.950	0.450	-	-
Groundwater	Metals	Total	Antimony	N/A	ug/L	19	8	1.53	1.07	3.89	1.49	1.15	2.23	95% KM (t) UCL	1.49	1.15	2.23	95% KM (t) UCL
Groundwater	Metals	Total	Arsenic	N/A	ug/L	53	43	7.73	6.00	21.3	6.48	6.54	10.4	95% KM (Chebyshev) UCL	6.48	6.54	10.4	95% KM (Chebyshev) UCL
Groundwater	Metals	Total	Barium	N/A	ug/L	19	19	111	100	304	-	-	165	95% Approximate Gamma UCL	-	-	165	95% Approximate Gamma UCL
Groundwater	Metals	Total	Beryllium	N/A	ug/L	19	7	0.328	0.324	0.435	0.304	0.0739	0.351	95% KM (t) UCL	0.328	0.0673	0.376	95% KM (t) UCL
Groundwater	Metals	Total	Cadmium	N/A	ug/L	19	6	1.91	0.570	5.60	0.915	1.80	1.91	95% KM (t) UCL	0.932	1.79	1.92	95% KM (t) UCL
Groundwater	Metals	Total	Chromium	N/A	ug/L	19	7	8.03	7.43	18.5	6.23	3.49	8.00	95% KM (t) UCL	6.23	3.49	8.00	95% KM (t) UCL
Groundwater	Metals	Total	Copper	N/A	ug/L	19	11	38.5	17.6	201	23.7	44.5	45.4	95% KM (BCA) UCL	23.7	44.5	45.0	95% KM (BCA) UCL
Groundwater	Metals	Total	Iron	N/A	ug/L	53	50	11,600	3,590	42,900	10,900	13,200	29,100	99% KM (Chebyshev) UCL	10,900	13,200	29,100	99% KM (Chebyshev) UCL
Groundwater	Metals	Total	Lead	N/A	ug/L	53	32	4.89	0.638	78.2	3.06	11.1	12.8	97.5% KM (Chebyshev) UCL	3.06	11.1	12.8	97.5% KM (Chebyshev) UCL
Groundwater	Metals	Total	Manganese	N/A	ug/L	53	52	1,080	229	5,380	1,060	1,410	1,910	95% KM (Chebyshev) UCL	1,060	1,410	1,910	95% KM (Chebyshev) UCL
Groundwater	Metals	Total	Mercury	N/A	ug/L	24	4	0.148	0.115	0.330	0.0496	0.0676	0.0769	95% KM (t) UCL	0.0496	0.0676	0.0769	95% KM (t) UCL
Groundwater	Metals	Total	Nickel	N/A	ug/L	19	11	35.9	7.61	116	22.9	39.0	117	99% KM (Chebyshev) UCL	22.9	39.0	117	99% KM (Chebyshev) UCL
Groundwater	Metals	Total	Selenium	N/A	ug/L	19	7	11.2	5.63	32.9	4.55	9.23	8.52	95% KM (t) UCL	4.78	9.15	8.74	95% KM (t) UCL
Groundwater	Metals	Total	Silver	N/A	ug/L	19	5	0.226	0.131	0.658	0.162	0.177	0.276	95% KM (t) UCL	0.162	0.177	0.276	95% KM (t) UCL
Groundwater	Metals	Total	Thallium	N/A	ug/L	19	9	0.202	0.197	0.323	0.202	0.0582	0.238	95% KM (t) UCL	0.202	0.0582	0.238	95% KM (t) UCL
Groundwater	Metals	Total	Zinc	N/A	ug/L	19	15	416	23.7	2,660	329	736	2,070	99% KM (Chebyshev) UCL	329	736	2,070	99% KM (Chebyshev) UCL
Groundwater	Metals	Dissolved	Arsenic	N/A	ug/L	36	29	6.99	5.65	19.3	5.76	5.67	7.49	95% KM (BCA) UCL	5.76	5.67	7.47	95% KM (BCA) UCL
Groundwater	Metals	Dissolved	Barium	N/A	ug/L	3	3	64.1	37.5	134	-	-	-	-	-	-	-	-

Table I-12
Statistical Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(5 of 6)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Groundwater	Metals	Dissolved	Calcium	N/A	ug/L	9	9	59,000	43,100	172,000	-	-	91,600	95% Student's-t UCL	-	-	91,600	95% Student's-t UCL
Groundwater	Metals	Dissolved	Iron	N/A	ug/L	36	25	14,100	18,800	35,400	9,800	12,600	31,000	99% KM (Chebyshev) UCL	9,800	12,600	31,000	99% KM (Chebyshev) UCL
Groundwater	Metals	Dissolved	Lead	N/A	ug/L	36	16	0.622	0.0755	3.50	0.292	0.794	0.524	95% KM (t) UCL	0.293	0.793	0.526	95% KM (t) UCL
Groundwater	Metals	Dissolved	Magnesium	N/A	ug/L	9	9	10,600	7,550	25,800	-	-	16,300	95% Student's-t UCL	-	-	16,300	95% Student's-t UCL
Groundwater	Metals	Dissolved	Manganese	N/A	ug/L	36	34	1,140	205	5,540	1,080	1,440	3,500	99% KM (Chebyshev) UCL	1,080	1,440	3,500	99% KM (Chebyshev) UCL
Groundwater	Metals	Dissolved	Potassium	N/A	ug/L	9	9	5,280	4,620	12,900	-	-	7,470	95% Student's-t UCL	-	-	7,470	95% Student's-t UCL
Groundwater	Metals	Dissolved	Sodium	N/A	ug/L	9	9	140,000	15,400	740,000	-	-	648,000	95% Adjusted Gamma UCL	-	-	648,000	95% Adjusted Gamma UCL
Groundwater	Butyltins	Total	Dibutyltin	N/A	ug/L	39	11	0.112	0.0910	0.447	0.0351	0.0832	0.0586	95% KM (t) UCL	0.0380	0.0822	0.0614	95% KM (t) UCL
Groundwater	Butyltins	Total	Monobutyltin	N/A	ug/L	39	7	0.0515	0.0189	0.240	0.0143	0.0377	0.0254	95% KM (t) UCL	0.0194	0.0383	0.0322	95% KM (t) UCL
Groundwater	Butyltins	Total	Tributyltin	N/A	ug/L	8	6	0.0298	0.0259	0.0601	0.0266	0.0134	0.0364	95% KM (Percentile Bootstrap) UCL	0.0266	0.0134	0.0364	95% KM (Percentile Bootstrap) UCL
Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	55	37	409	340	1,800	291	362	388	95% KM (BCA) UCL	294	359	381	95% KM (BCA) UCL
Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	ug/L	55	27	425	260	1,900	260	355	344	95% KM (t) UCL	262	354	345	95% KM (t) UCL
Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	57	17	95.5	32.0	430	39.9	75.4	60.4	95% KM (BCA) UCL	52.7	74.4	76.4	95% KM (BCA) UCL
Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	54	2	0.0430	0.0430	0.0601	0.0267	0.00549	-	-	0.0430	0.0172	-	-
Groundwater	SVOCs	Total	2-Methylnaphthalene	N/A	ug/L	23	4	0.181	0.163	0.360	0.103	0.109	0.175	95% KM (t) UCL	0.124	0.107	0.203	95% KM (t) UCL
Groundwater	SVOCs	Total	Acenaphthene	N/A	ug/L	23	2	0.175	0.175	0.239	0.125	0.0402	0.158	95% KM (t) UCL	0.125	0.0402	0.158	95% KM (t) UCL
Groundwater	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	ug/L	23	4	8.37	6.35	19.0	3.05	3.90	4.70	95% KM (t) UCL	3.05	3.90	4.70	95% KM (t) UCL
Groundwater	SVOCs	Total	Diethyl Phthalate	N/A	ug/L	23	3	1.04	1.03	1.90	0.475	0.568	0.873	95% KM (t) UCL	0.475	0.568	0.873	95% KM (t) UCL
Groundwater	SVOCs	Total	Di-n-octyl Phthalate	N/A	ug/L	23	3	5.07	5.29	7.08	3.59	1.45	4.61	95% KM (t) UCL	3.59	1.45	4.61	95% KM (t) UCL
Groundwater	SVOCs	Total	Isophorone	N/A	ug/L	23	2	0.199	0.199	0.282	0.134	0.0522	0.177	95% KM (t) UCL	0.140	0.0581	0.193	95% KM (t) UCL
Groundwater	SVOCs	Total	Naphthalene	N/A	ug/L	23	3	0.0993	0.101	0.157	0.0598	0.0393	0.0873	95% KM (t) UCL	0.0620	0.0398	0.0913	95% KM (t) UCL
Groundwater	SVOCs	Total	Phenanthrene	N/A	ug/L	54	5	0.940	0.211	3.90	0.188	0.596	0.591	95% KM (BCA) UCL	0.190	0.596	0.615	95% KM (BCA) UCL
Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	ug/L	22	2	3.10	3.10	5.20	1.19	0.875	-	-	1.19	0.875	-	-
Groundwater	VOCs	Total	Acetone	N/A	ug/L	22	4	13.2	14.6	15.4	9.27	2.22	10.2	95% KM (t) UCL	9.27	2.22	10.2	95% KM (t) UCL
Groundwater	VOCs	Total	Chloroform	N/A	ug/L	56	8	1.59	1.19	3.70	0.320	0.739	0.498	95% KM (t) UCL	0.450	0.715	0.666	95% KM (t) UCL
Groundwater	VOCs	Total	Isopropylbenzene	N/A	ug/L	22	2	3.90	3.90	4.60	3.26	0.292	3.42	95% KM (t) UCL	3.26	0.292	3.42	95% KM (t) UCL
Groundwater	VOCs	Total	n-Propylbenzene	N/A	ug/L	22	2	1.60	1.60	2.00	1.24	0.167	1.32	95% KM (t) UCL	1.24	0.167	1.32	95% KM (t) UCL
Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	56	13	4.18	4.80	8.78	1.15	2.08	2.80	95% KM (Percentile Bootstrap) UCL	1.15	2.08	2.79	95% KM (Percentile Bootstrap) UCL
Groundwater	VOCs	Total	Vinyl Chloride	N/A	ug/L	56	16	0.404	0.335	0.955	0.257	0.189	0.307	95% KM (t) UCL	0.326	0.188	0.389	95% KM (t) UCL
Seep Water	Metals	Total	Arsenic	N/A	ug/L	5	4	3.86	1.07	12.8	3.19	4.81	-	-	3.19	4.81	-	-
Seep Water	Metals	Total	Iron	N/A	ug/L	5	5	27,000	5,300	121,000	-	-	-	-	-	-	-	-
Seep Water	Metals	Total	Lead	N/A	ug/L	5	4	7.10	1.29	25.7	5.72	10.0	-	-	5.72	10.0	-	-
Seep Water	Metals	Total	Manganese	N/A	ug/L	5	5	963	75.0	3,240	-	-	-	-	-	-	-	-
Seep Water	Metals	Dissolved	Arsenic	N/A	ug/L	5	3	0.833	1.00	1.00	0.700	0.245	-	-	0.700	0.245	-	-
Seep Water	Metals	Dissolved	Calcium	N/A	ug/L	2	2	49,500	49,500	76,400	-	-	-	-	-	-	-	-
Seep Water	Metals	Dissolved	Iron	N/A	ug/L	5	3	1,080	14.9	3,210	652	1,280	-	-	652	1,280	-	-
Seep Water	Metals	Dissolved	Lead	N/A	ug/L	5	3	0.0303	0.0180	0.0650	0.0260	0.0229	-	-	0.0260	0.0229	-	-
Seep Water	Metals	Dissolved	Magnesium	N/A	ug/L	2	2	10,800	10,800	16,600	-	-	-	-	-	-	-	-
Seep Water	Metals	Dissolved	Manganese	N/A	ug/L	5	3	496	5.41	1,480	298	591	-	-	298	591	-	-
Seep Water	Metals	Dissolved	Potassium	N/A	ug/L	2	2	2,470	2,470	4,160	-	-	-	-	-	-	-	-
Seep Water	Metals	Dissolved	Sodium	N/A	ug/L	2	2	13,200	13,200	19,700	-	-	-	-	-	-	-	-
Seep Water	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	5	2	79.5	79.5	130	54.2	43.7	-	-	54.2	43.7	-	-
Seep Water	VOCs	Total	Chloroform	N/A	ug/L	5	2	1.77	1.77	2.80	1.15	0.824	-	-	1.15	0.824	-	-
Seep Water	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	5	3	2.08	1.70	4.40	1.31	1.66	-	-	1.31	1.66	-	-
Surface Water	Metals	Total	Arsenic	N/A	ug/L	4	3	0.957	0.900	1.17	-	-	-	-	-	-	-	-
Surface Water	Metals	Total	Iron	N/A	ug/L	4	4	263	220	446	-	-	-	-	-	-	-	-
Surface Water	Metals	Total	Lead	N/A	ug/L	4	4	0.261	0.266	0.407	-	-	-	-	-	-	-	-
Surface Water	Metals	Total	Manganese	N/A	ug/L	4	4	9.24	8.74	13.6	-	-	-	-	-	-	-	-
Surface Water	Metals	Dissolved	Arsenic	N/A	ug/L	4	4	0.870	0.835	1.01	-	-	-	-	-	-	-	-
Surface Water	Metals	Dissolved	Calcium	N/A	ug/L	2	2	20,200	20,200	20,500	-	-	-	-	-	-	-	-
Surface Water	Metals	Dissolved	Lead	N/A	ug/L	4	3	0.0120	0.0100	0.0160	-	-	-	-	-	-	-	-
Surface Water	Metals	Dissolved	Magnesium	N/A	ug/L	2	2	6,260	6,260	6,330	-	-	-	-	-	-	-	-
Surface Water	Metals	Dissolved	Manganese	N/A	ug/L	4	4	0.748	0.745	1.01	-	-	-	-	-	-	-	-
Surface Water	Metals	Dissolved	Potassium	N/A	ug/L	2	2	1,500	1,500	1,510	-	-	-	-	-	-	-	-
Surface Water	Metals	Dissolved	Sodium	N/A	ug/L	2	2	7,760	7,760	7,900	-	-	-	-	-	-	-	-
Surface Water	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	4	2	28.0	28.0	30.0	-	-	-	-	-	-	-	-

Notes
Only those analytes with at least 2 detected results are shown on this table.
If not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.
The potentially mass wasting soil subset is comprised of the following samples: BIL01USE through BIL09USE, BIL13SSI, and L-01 through L-04.

% = percent
KM = Kaplan-Meier
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = method reporting limit
MW Soil = Mass Wasting Soil

Table I-12
Statistical Summary for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(6 of 6)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type

ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SD = standard deviation
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
UCL = upper confidence limit

Table I-13
Statistical Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 9)

												Statistics - ND censored at the MDL				Statistics - ND censored at the MRL			
Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	Metals	Total	Aluminum	0-1 ft	N/A	mg/kg	58	58	6,910	5,630	24,300	-	-	8,060	Use 95% Approximate Gamma UCL	-	-	8,060	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Aluminum	0-3 ft	N/A	mg/kg	75	75	8,260	7,100	24,300	-	-	9,430	Use 95% Approximate Gamma UCL	-	-	9,430	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Aluminum	0-10 ft	N/A	mg/kg	78	78	8,520	7,220	24,300	-	-	9,700	Use 95% Approximate Gamma UCL	-	-	9,700	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Aluminum	>10 ft	N/A	mg/kg	6	6	11,700	12,000	15,600	-	-	-	-	-	-	-	-
Soil	Metals	Total	Antimony	0-1 ft	N/A	mg/kg	58	41	1.90	1.14	13.7	1.62	2.23	2.94	95% KM (Chebyshev) UCL	1.62	2.23	2.94	95% KM (Chebyshev) UCL
Soil	Metals	Total	Antimony	0-3 ft	N/A	mg/kg	75	55	1.57	1.07	13.7	1.38	2.02	2.42	95% KM (Chebyshev) UCL	1.38	2.02	2.42	95% KM (Chebyshev) UCL
Soil	Metals	Total	Antimony	0-10 ft	N/A	mg/kg	78	58	1.52	1.06	13.7	1.35	1.99	2.36	95% KM (Chebyshev) UCL	1.35	1.99	2.36	95% KM (Chebyshev) UCL
Soil	Metals	Total	Antimony	>10 ft	N/A	mg/kg	6	6	0.234	0.211	0.433	-	-	-	-	-	-	-	-
Soil	Metals	Total	Arsenic	0-1 ft	N/A	mg/kg	58	57	7.76	4.81	80.9	7.64	12.9	15.1	95% KM (Chebyshev) UCL	7.64	12.9	15.1	95% KM (Chebyshev) UCL
Soil	Metals	Total	Arsenic	0-3 ft	N/A	mg/kg	75	74	7.24	5.02	80.9	7.15	11.4	9.71	95% KM (BCA) UCL	7.15	11.4	9.69	95% KM (BCA) UCL
Soil	Metals	Total	Arsenic	0-10 ft	N/A	mg/kg	78	77	7.17	4.99	80.9	7.08	11.2	9.86	95% KM (BCA) UCL	7.09	11.2	9.32	95% KM (BCA) UCL
Soil	Metals	Total	Arsenic	>10 ft	N/A	mg/kg	6	6	5.44	5.79	9.82	-	-	-	-	-	-	-	-
Soil	Metals	Total	Barium	0-1 ft	N/A	mg/kg	58	58	67.2	64.0	133	-	-	74.5	Use 95% Student's-t UCL	-	-	74.5	Use 95% Student's-t UCL
Soil	Metals	Total	Barium	0-3 ft	N/A	mg/kg	75	75	71.7	70.4	138	-	-	78.0	Use 95% Student's-t UCL	-	-	78.0	Use 95% Student's-t UCL
Soil	Metals	Total	Barium	0-10 ft	N/A	mg/kg	78	78	73.0	71.4	138	-	-	79.1	Use 95% Student's-t UCL	-	-	79.1	Use 95% Student's-t UCL
Soil	Metals	Total	Barium	>10 ft	N/A	mg/kg	6	6	74.4	83.4	97.3	-	-	-	-	-	-	-	-
Soil	Metals	Total	Beryllium	0-1 ft	N/A	mg/kg	58	27	0.287	0.260	0.630	0.186	0.127	0.223	95% KM (t) UCL	0.269	0.0987	0.298	95% KM (t) UCL
Soil	Metals	Total	Beryllium	0-3 ft	N/A	mg/kg	75	44	0.332	0.319	0.630	0.236	0.153	0.282	95% KM (Percentile Bootstrap) UCL	0.309	0.114	0.335	95% KM (t) UCL
Soil	Metals	Total	Beryllium	0-10 ft	N/A	mg/kg	78	47	0.335	0.349	0.630	0.241	0.152	0.282	95% KM (Percentile Bootstrap) UCL	0.314	0.112	0.339	95% KM (t) UCL
Soil	Metals	Total	Beryllium	>10 ft	N/A	mg/kg	6	6	0.379	0.380	0.488	-	-	-	-	-	-	-	-
Soil	Metals	Total	Cadmium	0-1 ft	N/A	mg/kg	58	53	1.82	1.04	17.3	1.66	2.65	3.20	95% KM (Chebyshev) UCL	1.67	2.64	3.20	95% KM (Chebyshev) UCL
Soil	Metals	Total	Cadmium	0-3 ft	N/A	mg/kg	75	67	1.58	0.963	17.3	1.42	2.38	2.63	95% KM (Chebyshev) UCL	1.43	2.38	2.64	95% KM (Chebyshev) UCL
Soil	Metals	Total	Cadmium	0-10 ft	N/A	mg/kg	78	67	1.58	0.963	17.3	1.37	2.35	2.54	95% KM (Chebyshev) UCL	1.38	2.34	2.55	95% KM (Chebyshev) UCL
Soil	Metals	Total	Cadmium	>10 ft	N/A	mg/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Metals	Total	Chromium	0-1 ft	N/A	mg/kg	61	61	383	94.9	2,650	-	-	720	Use 95% Chebyshev (Mean, Sd) UCL	-	-	720	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Chromium	0-3 ft	N/A	mg/kg	78	78	306	50.6	2,650	-	-	579	Use 95% Chebyshev (Mean, Sd) UCL	-	-	579	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Chromium	0-10 ft	N/A	mg/kg	81	81	296	49.5	2,650	-	-	560	Use 95% Chebyshev (Mean, Sd) UCL	-	-	560	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Chromium	>10 ft	N/A	mg/kg	6	6	19.1	20.1	23.6	-	-	-	-	-	-	-	-
Soil	Metals	Total	Cobalt	0-1 ft	N/A	mg/kg	58	58	12.7	12.6	25.0	-	-	13.6	Use 95% Student's-t UCL	-	-	13.6	Use 95% Student's-t UCL
Soil	Metals	Total	Cobalt	0-3 ft	N/A	mg/kg	75	75	13.2	13.4	25.0	-	-	14.0	Use 95% Student's-t UCL	-	-	14.0	Use 95% Student's-t UCL
Soil	Metals	Total	Cobalt	0-10 ft	N/A	mg/kg	78	78	13.3	13.4	25.0	-	-	14.0	Use 95% Student's-t UCL	-	-	14.0	Use 95% Student's-t UCL
Soil	Metals	Total	Cobalt	>10 ft	N/A	mg/kg	6	6	14.5	14.0	18.7	-	-	-	-	-	-	-	-
Soil	Metals	Total	Copper	0-1 ft	N/A	mg/kg	58	58	64.8	37.3	319	-	-	103	Use 95% Chebyshev (Mean, Sd) UCL	-	-	103	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Copper	0-3 ft	N/A	mg/kg	75	75	62.4	45.7	319	-	-	91.8	Use 95% Chebyshev (Mean, Sd) UCL	-	-	91.8	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Copper	0-10 ft	N/A	mg/kg	78	78	61.8	45.5	319	-	-	70.3	Use 95% H-UCL	-	-	70.3	Use 95% H-UCL
Soil	Metals	Total	Copper	>10 ft	N/A	mg/kg	6	6	49.8	51.8	67.6	-	-	-	-	-	-	-	-
Soil	Metals	Total	Lead	0-1 ft	<250um	mg/kg	8	8	300	160	921	-	-	639	Use 95% Approximate Gamma UCL	-	-	639	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Lead	0-1 ft	<2mm	mg/kg	8	8	233	133	768	-	-	551	Use 95% Approximate Gamma UCL	-	-	551	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Lead	0-1 ft	N/A	mg/kg	61	61	362	272	3,260	-	-	465	Use 95% Approximate Gamma UCL	-	-	465	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Lead	0-3 ft	<250um	mg/kg	16	16	202	72.2	921	-	-	418	Use 95% Approximate Gamma UCL	-	-	418	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Lead	0-3 ft	<2mm	mg/kg	16	16	148	34.9	768	-	-	303	Use 95% Approximate Gamma UCL	-	-	303	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Lead	0-3 ft	N/A	mg/kg	78	78	309	139	3,260	-	-	529	Use 95% Chebyshev (Mean, Sd) UCL	-	-	529	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Lead	0-10 ft	<250um	mg/kg	16	16	202	72.2	921	-	-	418	Use 95% Approximate Gamma UCL	-	-	418	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Lead	0-10 ft	<2mm	mg/kg	16	16	148	34.9	768	-	-	303	Use 95% Approximate Gamma UCL	-	-	303	Use 95% Approximate Gamma UCL
Soil	Metals	Total	Lead	0-10 ft	N/A	mg/kg	81	81	298	128	3,260	-	-	512	Use 95% Chebyshev (Mean, Sd) UCL	-	-	512	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Lead	>10 ft	N/A	mg/kg	6	6	5.37	5.72	6.64	-	-	-	-	-	-	-	-
Soil	Metals	Total	Manganese	0-1 ft	N/A	mg/kg	58	58	416	396	789	-	-	448	Use 95% Student's-t UCL	-	-	448	Use 95% Student's-t UCL
Soil	Metals	Total	Manganese	0-3 ft	N/A	mg/kg	75	75	426	413	816	-	-	454	Use 95% Student's-t UCL	-	-	454	Use 95% Student's-t UCL
Soil	Metals	Total	Manganese	0-10 ft	N/A	mg/kg	78	78	433	416	818	-	-	461	Use 95% Student's-t UCL	-	-	461	Use 95% Student's-t UCL
Soil	Metals	Total	Manganese	>10 ft	N/A	mg/kg	6	6	470	460	599	-	-	-	-	-	-	-	-
Soil	Metals	Total	Mercury	0-1 ft	N/A	mg/kg	58	43	0.104	0.0440	0.723	0.0812	0.130	0.113	95% KM (BCA) UCL	0.0847	0.128	0.112	95% KM (BCA) UCL
Soil	Metals	Total	Mercury	0-3 ft	N/A	mg/kg	75	58	0.0911	0.0433	0.723	0.0741	0.116	0.0976	95% KM (BCA) UCL	0.0771	0.115	0.101	95% KM (BCA) UCL
Soil	Metals	Total	Mercury	0-10 ft	N/A	mg/kg	78	61	0.0882	0.0425	0.723	0.0727	0.114	0.0988	95% KM (BCA) UCL	0.0753	0.113	0.0989	95% KM (BCA) UCL
Soil	Metals	Total	Mercury	>10 ft	N/A	mg/kg	6	6	0.0305	0.0258	0.0544	-	-	-	-	-	-	-	-
Soil	Metals	Total	Nickel	0-1 ft	N/A	mg/kg	58	58	167	50.0	1,060	-	-	353	Use 95% H-UCL	-	-	353	Use 95% H-UCL
Soil	Metals	Total	Nickel	0-3 ft	N/A	mg/kg	75	75	135	33.3	1,060	-	-	251	Use 95% Chebyshev (Mean, Sd) UCL	-	-	251	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Nickel	0-10 ft	N/A	mg/kg	78	78	131	30.6	1,060	-	-	243	Use 95% Chebyshev (Mean, Sd) UCL	-	-	243	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Nickel	>10 ft	N/A	mg/kg	6	6	19.7	20.6	24.4	-	-	-	-	-	-	-	-
Soil	Metals	Total	Selenium	0-1 ft	N/A	mg/kg	58	30	0.558	0.600	0.900	0.411	0.206	0.466	95% KM (Percentile Bootstrap) UCL	0.547	0.191	0.605	95% KM (t) UCL
Soil	Metals	Total	Selenium	0-3 ft	N/A	mg/kg	75	43	0.563	0.600	0.900	0.436	0.207	0.479	95% KM (t) UCL	0.555	0.189	0.603	95% KM (t) UCL
Soil	Metals	Total	Selenium	0-10 ft	N/A	mg/kg	78	46	0.546	0.600	0.900	0.435	0.201	0.476	95% KM (% Bootstrap) UCL	0.539	0.193	0.586	95% KM (t) UCL
Soil	Metals	Total	Selenium	>10 ft	N/A	mg/kg	6	6	0.359	0.333	0.602	-	-	-	-	-	-	-	-
Soil	Metals	Total	Silver	0-1 ft	N/A	mg/kg	58	55	0.145	0.127	0.431	0.141	0.0798	0.187	95% KM (Chebyshev) UCL	0.145	0.0795	0.192	95% KM (Chebyshev) UCL
Soil	Metals	Total	Silver	0-3 ft	N/A	mg/kg	75	72	0.141	0.127	0.431	0.137	0.0758	0.152	95% KM (BCA) UCL	0.141	0.0749	0.156	95% KM (BCA) UCL
Soil	Metals	Total	Silver	0-10 ft	N/A	mg/kg	78	75	0.141	0.128	0.431	0.137	0.0744	0.151	95% KM (BCA) UCL	0.141	0.0735	0.154	95% KM (BCA) UCL
Soil	Metals	Total	Silver	>10 ft	N/A	mg/kg	6	6	0.128	0.125	0.158	-	-	-	-	-	-	-	-
Soil	Metals	Total	Thallium	0-1 ft	N/A	mg/kg	58	46	0.0991	0.0931	0.239	0.0859	0.0471	0.0967	95% KM (Percentile Bootstrap) UCL	0.0991	0.0441	0.110	95% KM (Percentile Bootstrap) UCL
Soil	Metals	Total	Thallium	0-3 ft	N/A	mg/kg	75	63	0.107	0.103	0.255	0.0959	0.0487	0.107	95% KM (BCA) UCL	0.107	0.0445	0.118	95% KM (BCA) UCL
Soil	Metals	Total	Thallium	0-10 ft	N/A	mg/kg	78	66	0.109	0.104	0.255	0.0980	0.0498	0.108	95% KM (BCA) UCL	0.109	0.0456	0.119	95% KM (BCA) UCL
Soil	Metals	Total	Thallium	>10 ft	N/A	mg/kg	6	6	0.130	0.138	0.180	-	-	-	-	-	-	-	-

Table I-13
Statistical Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(2 of 9)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	Metals	Total	Vanadium	0-1 ft	N/A	mg/kg	58	58	44.4	42.2	84.7	-	-	49.0	Use 95% Student's-t UCL	-	-	49.0	Use 95% Student's-t UCL
Soil	Metals	Total	Vanadium	0-3 ft	N/A	mg/kg	75	75	48.1	48.2	89.1	-	-	52.1	Use 95% Student's-t UCL	-	-	52.1	Use 95% Student's-t UCL
Soil	Metals	Total	Vanadium	0-10 ft	N/A	mg/kg	78	78	48.9	49.4	89.1	-	-	59.1	Use 95% Chebyshev (Mean, Sd) UCL	-	-	59.1	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Vanadium	>10 ft	N/A	mg/kg	6	6	53.8	53.8	60.3	-	-	-	-	-	-	-	-
Soil	Metals	Total	Zinc	0-1 ft	N/A	mg/kg	58	58	173	110	1,160	-	-	212	Use 95% H-UCL	-	-	212	Use 95% H-UCL
Soil	Metals	Total	Zinc	0-3 ft	N/A	mg/kg	75	75	148	85.4	1,160	-	-	237	Use 95% Chebyshev (Mean, Sd) UCL	-	-	237	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Zinc	0-10 ft	N/A	mg/kg	78	78	145	85.4	1,160	-	-	231	Use 95% Chebyshev (Mean, Sd) UCL	-	-	231	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Zinc	>10 ft	N/A	mg/kg	6	6	49.5	53.6	54.1	-	-	-	-	-	-	-	-
Soil	Butyltins	Total	Dibutyltin	0-1 ft	N/A	ug/kg	47	18	30.8	6.25	210	12.3	34.1	34.6	95% KM (Chebyshev) UCL	12.4	34.0	34.6	95% KM (Chebyshev) UCL
Soil	Butyltins	Total	Dibutyltin	0-3 ft	N/A	ug/kg	62	18	30.8	6.25	210	9.52	30.1	26.6	95% KM (Chebyshev) UCL	9.55	30.1	26.7	95% KM (Chebyshev) UCL
Soil	Butyltins	Total	Dibutyltin	0-10 ft	N/A	ug/kg	62	18	30.8	6.25	210	9.52	30.1	26.6	95% KM (Chebyshev) UCL	9.55	30.1	26.7	95% KM (Chebyshev) UCL
Soil	Butyltins	Total	Dibutyltin	>10 ft	N/A	ug/kg	5	5	12.4	7.75	28.3	-	-	-	-	-	-	-	-
Soil	Butyltins	Total	Monobutyltin	0-1 ft	N/A	ug/kg	47	22	12.2	3.76	108	5.96	17.4	11.0	95% KM (BCA) UCL	6.26	17.3	10.6	95% KM (BCA) UCL
Soil	Butyltins	Total	Monobutyltin	0-3 ft	N/A	ug/kg	62	22	12.2	3.76	108	4.62	15.3	8.62	95% KM (BCA) UCL	4.94	15.2	8.48	95% KM (BCA) UCL
Soil	Butyltins	Total	Monobutyltin	0-10 ft	N/A	ug/kg	62	22	12.2	3.76	108	4.62	15.3	8.94	95% KM (BCA) UCL	4.94	15.2	8.75	95% KM (BCA) UCL
Soil	Butyltins	Total	Monobutyltin	>10 ft	N/A	ug/kg	5	5	9.34	8.89	13.0	-	-	-	-	-	-	-	-
Soil	Butyltins	Total	Tributyltin	0-1 ft	N/A	ug/kg	47	16	186	29.8	1,860	64.3	278	481	99% KM (Chebyshev) UCL	64.4	278	481	99% KM (Chebyshev) UCL
Soil	Butyltins	Total	Tributyltin	0-3 ft	N/A	ug/kg	62	16	186	29.8	1,860	49.2	243	248	97.5% KM (Chebyshev) UCL	49.2	243	248	97.5% KM (Chebyshev) UCL
Soil	Butyltins	Total	Tributyltin	0-10 ft	N/A	ug/kg	62	16	186	29.8	1,860	49.2	243	248	97.5% KM (Chebyshev) UCL	49.2	243	248	97.5% KM (Chebyshev) UCL
Soil	Butyltins	Total	Tributyltin	>10 ft	N/A	ug/kg	5	1	2.58	2.58	2.58	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	4,4'-DDD	0-1 ft	N/A	ug/kg	31	2	0.840	0.840	0.990	0.702	0.0577	0.729	95% KM (t) UCL	0.765	0.130	0.921	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDD	0-3 ft	N/A	ug/kg	37	2	0.840	0.840	0.990	0.699	0.0522	0.721	95% KM (t) UCL	0.740	0.112	0.849	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDD	0-10 ft	N/A	ug/kg	37	2	0.840	0.840	0.990	0.699	0.0522	0.721	95% KM (t) UCL	0.740	0.112	0.849	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDD	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	4,4'-DDE	0-1 ft	N/A	ug/kg	31	7	0.983	0.610	2.44	0.452	0.501	0.632	95% KM (t) UCL	0.756	0.541	1.04	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDE	0-3 ft	N/A	ug/kg	37	7	0.983	0.610	2.44	0.418	0.458	0.567	95% KM (t) UCL	0.697	0.485	0.929	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDE	0-10 ft	N/A	ug/kg	37	7	0.983	0.610	2.44	0.418	0.458	0.567	95% KM (t) UCL	0.697	0.485	0.929	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDE	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	4,4'-DDT	0-1 ft	N/A	ug/kg	31	18	32.3	7.55	140	19.2	40.1	32.3	95% KM (BCA) UCL	19.3	40.0	31.7	95% KM (BCA) UCL
Soil	Pesticides	Total	4,4'-DDT	0-3 ft	N/A	ug/kg	37	22	28.0	4.83	140	17.0	37.2	79.4	99% KM (Chebyshev) UCL	17.2	37.2	79.5	99% KM (Chebyshev) UCL
Soil	Pesticides	Total	4,4'-DDT	0-10 ft	N/A	ug/kg	37	22	28.0	4.83	140	17.0	37.2	79.4	99% KM (Chebyshev) UCL	17.2	37.2	79.5	99% KM (Chebyshev) UCL
Soil	Pesticides	Total	4,4'-DDT	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	BHC (delta)	0-1 ft	N/A	ug/kg	31	2	1.55	1.55	3.03	0.176	0.530	1.54	99% KM (Chebyshev) UCL	0.192	0.568	1.76	99% KM (Chebyshev) UCL
Soil	Pesticides	Total	BHC (delta)	0-3 ft	N/A	ug/kg	37	2	1.55	1.55	3.03	0.160	0.485	1.30	99% KM (Chebyshev) UCL	0.170	0.514	1.45	99% KM (Chebyshev) UCL
Soil	Pesticides	Total	BHC (delta)	0-10 ft	N/A	ug/kg	37	2	1.55	1.55	3.03	0.160	0.485	1.30	99% KM (Chebyshev) UCL	0.170	0.514	1.45	99% KM (Chebyshev) UCL
Soil	Pesticides	Total	BHC (delta)	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	N/A	ug/kg	31	2	5.92	5.92	9.68	2.42	1.35	9.68	95% KM (BCA) UCL	2.42	1.35	-	-
Soil	Pesticides	Total	BHC (gamma) Lindane	0-3 ft	N/A	ug/kg	37	3	4.02	2.17	9.68	0.520	1.58	1.06	95% KM (t) UCL	0.525	1.58	1.07	95% KM (t) UCL
Soil	Pesticides	Total	BHC (gamma) Lindane	0-10 ft	N/A	ug/kg	37	3	4.02	2.17	9.68	0.520	1.58	1.06	95% KM (t) UCL	0.525	1.58	1.07	95% KM (t) UCL
Soil	Pesticides	Total	BHC (gamma) Lindane	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Chlordane (alpha)	0-1 ft	N/A	ug/kg	19	3	1.01	0.860	1.50	0.718	0.195	0.815	95% KM (t) UCL	0.759	0.209	0.893	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (alpha)	0-3 ft	N/A	ug/kg	25	3	1.01	0.860	1.50	0.703	0.171	0.776	95% KM (t) UCL	0.746	0.185	0.860	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (alpha)	0-10 ft	N/A	ug/kg	25	3	1.01	0.860	1.50	0.703	0.171	0.776	95% KM (t) UCL	0.746	0.185	0.860	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (alpha)	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Chlordane (gamma)	0-1 ft	N/A	ug/kg	19	6	43.7	29.8	97.0	19.0	26.0	30.3	95% KM (t) UCL	19.0	26.0	30.3	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (gamma)	0-3 ft	N/A	ug/kg	25	10	27.4	10.6	97.0	11.3	25.2	20.4	95% KM (t) UCL	11.4	25.2	20.5	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (gamma)	0-10 ft	N/A	ug/kg	25	10	27.4	10.6	97.0	11.3	25.2	20.4	95% KM (t) UCL	11.4	25.2	20.5	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (gamma)	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Dieldrin	0-1 ft	N/A	ug/kg	31	2	0.626	0.626	0.823	0.446	0.0823	0.488	95% KM (t) UCL	0.527	0.171	0.732	95% KM (t) UCL
Soil	Pesticides	Total	Dieldrin	0-3 ft	N/A	ug/kg	37	2	0.626	0.626	0.823	0.444	0.0789	0.483	95% KM (t) UCL	0.527	0.171	0.731	95% KM (t) UCL
Soil	Pesticides	Total	Dieldrin	0-10 ft	N/A	ug/kg	37	2	0.626	0.626	0.823	0.444	0.0789	0.483	95% KM (t) UCL	0.527	0.171	0.731	95% KM (t) UCL
Soil	Pesticides	Total	Dieldrin	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Endosulfan I	0-1 ft	N/A	ug/kg	31	2	4.32	4.32	6.45	2.35	0.775	2.69	95% KM (t) UCL	2.35	0.775	2.69	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan I	0-3 ft	N/A	ug/kg	37	5	2.21	2.00	6.45	0.447	1.13	0.809	95% KM (t) UCL	0.498	1.12	0.865	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan I	0-10 ft	N/A	ug/kg	37	5	2.21	2.00	6.45	0.447	1.13	0.809	95% KM (t) UCL	0.498	1.12	0.865	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan I	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Endosulfan II	0-1 ft	N/A	ug/kg	31	3	1.06	0.960	1.99	0.341	0.367	0.495	95% KM (t) UCL	0.606	0.529	1.06	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan II	0-3 ft	N/A	ug/kg	37	3	1.06	0.960	1.99	0.322	0.333	0.447	95% KM (t) UCL	0.569	0.484	0.990	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan II	0-10 ft	N/A	ug/kg	37	3	1.06	0.960	1.99	0.322	0.333	0.447	95% KM (t) UCL	0.569	0.484	0.990	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan II	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Endosulfan Sulfate	0-1 ft	N/A	ug/kg	31	6	1.46	1.24	3.30	0.761	0.560	0.953	95% KM (t) UCL	0.928	0.625	1.22	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan Sulfate	0-3 ft	N/A	ug/kg	37	6	1.46	1.24	3.30	0.729	0.515	0.889	95% KM (t) UCL	0.852	0.564	1.07	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan Sulfate	0-10 ft	N/A	ug/kg	37	6	1.46	1.24	3.30	0.729	0.515	0.889	95% KM (t) UCL	0.852	0.564	1.07	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan Sulfate	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Endrin Aldehyde	0-1 ft	N/A	ug/kg	31	4	8.36	7.70	16.0	2.84	2.90	3.87	95% KM (t) UCL	2.85	2.90	3.87	95% KM (t) UCL
Soil	Pesticides	Total	Endrin Aldehyde	0-3 ft	N/A	ug/kg	37	5	7.06	4.40	16.0	2.60	2.70	3.44	95% KM (t) UCL	2.61	2.70	3.45	95% KM (t) UCL
Soil	Pesticides	Total	Endrin Aldehyde	0-10 ft	N/A	ug/kg	37	5	7.06	4.40	16.0	2.60	2.70	3.44	95% KM (t) UCL	2.61	2.70	3.45	95% KM (t) UCL
Soil	Pesticides	Total	Endrin Aldehyde	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Endrin Ketone	0-1 ft	N/A	ug/kg	31	4	5.25	3.07	13.0	2.35	2.04	3.09	95% KM (t) UCL	2.35	2.04	3.09	95% KM (t) UCL
Soil	Pesticides	Total	Endrin Ketone	0-3 ft	N/A	ug/kg	37	4	5.25	3.07	13.0	2.26	1.87	2.88	95% KM (t) UCL	2.26	1.87	2.88	95% KM (t) UCL
Soil	Pesticides	Total	Endrin Ketone	0-10 ft	N/A	ug/kg	37	4	5.25	3.07	13.0	2.26	1.87	2.88	95% KM (t) UCL	2.26	1.87	2.88	95% KM (t) UCL

Table I-13
Statistical Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(3 of 9)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	Pesticides	Total	Endrin Ketone	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Endrin	0-1 ft	N/A	ug/kg	31	3	11.7	15.0	17.0	3.84	3.20	5.04	95% KM (t) UCL	3.84	3.20	5.04	95% KM (t) UCL
Soil	Pesticides	Total	Endrin	0-3 ft	N/A	ug/kg	37	4	9.28	9.00	17.0	2.88	3.15	3.89	95% KM (t) UCL	2.88	3.15	3.89	95% KM (t) UCL
Soil	Pesticides	Total	Endrin	0-10 ft	N/A	ug/kg	37	4	9.28	9.00	17.0	2.88	3.15	3.89	95% KM (t) UCL	2.88	3.15	3.89	95% KM (t) UCL
Soil	Pesticides	Total	Endrin	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Heptachlor	0-1 ft	N/A	ug/kg	31	4	0.911	0.283	2.90	0.283	0.496	0.464	95% KM (t) UCL	0.347	0.509	0.561	95% KM (t) UCL
Soil	Pesticides	Total	Heptachlor	0-3 ft	N/A	ug/kg	37	4	0.911	0.283	2.90	0.265	0.453	0.415	95% KM (t) UCL	0.329	0.464	0.513	95% KM (t) UCL
Soil	Pesticides	Total	Heptachlor	0-10 ft	N/A	ug/kg	37	4	0.911	0.283	2.90	0.265	0.453	0.415	95% KM (t) UCL	0.329	0.464	0.513	95% KM (t) UCL
Soil	Pesticides	Total	Heptachlor	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Methoxychlor	0-1 ft	N/A	ug/kg	31	2	1.10	1.10	1.20	1.02	0.0533	1.05	95% KM (t) UCL	1.03	0.0700	1.09	95% KM (t) UCL
Soil	Pesticides	Total	Methoxychlor	0-3 ft	N/A	ug/kg	37	2	1.10	1.10	1.20	1.01	0.0447	1.04	95% KM (t) UCL	1.02	0.0553	1.06	95% KM (t) UCL
Soil	Pesticides	Total	Methoxychlor	0-10 ft	N/A	ug/kg	37	2	1.10	1.10	1.20	1.01	0.0447	1.04	95% KM (t) UCL	1.02	0.0553	1.06	95% KM (t) UCL
Soil	Pesticides	Total	Methoxychlor	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	PCB Aroclors	Total	Aroclor 1254	0-1 ft	N/A	ug/kg	58	6	802	588	1,700	226	273	292	95% KM (t) UCL	226	273	292	95% KM (t) UCL
Soil	PCB Aroclors	Total	Aroclor 1254	0-3 ft	N/A	ug/kg	73	10	510	255	1,700	79.3	276	136	95% KM (t) UCL	79.3	276	136	95% KM (t) UCL
Soil	PCB Aroclors	Total	Aroclor 1254	0-10 ft	N/A	ug/kg	73	10	510	255	1,700	79.3	276	136	95% KM (t) UCL	79.3	276	136	95% KM (t) UCL
Soil	PCB Aroclors	Total	Aroclor 1254	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	PCB Aroclors	Total	Aroclor 1260	0-1 ft	N/A	ug/kg	58	52	89.6	24.8	690	80.5	148	203	97.5% KM (Chebyshev) UCL	80.9	148	204	97.5% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Aroclor 1260	0-3 ft	N/A	ug/kg	73	61	79.8	21.7	690	67.0	136	167	97.5% KM (Chebyshev) UCL	67.6	135	167	97.5% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Aroclor 1260	0-10 ft	N/A	ug/kg	73	61	79.8	21.7	690	67.0	136	167	97.5% KM (Chebyshev) UCL	67.6	135	167	97.5% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Aroclor 1260	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	N/A	ug/kg	58	52	255	25.5	2140	165	421	514	97.5% KM (Chebyshev) UCL	174	418	416	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-3 ft	N/A	ug/kg	73	61	224	28.7	2140	138	381	419	97.5% KM (Chebyshev) UCL	147	379	342	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-10 ft	N/A	ug/kg	73	61	224	28.7	2140	138	381	419	97.5% KM (Chebyshev) UCL	147	379	342	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	>10 ft	N/A	ug/kg	5	0	-	-	-	-	-	-	-	-	-	-	-
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	N/A	mg/kg	57	50	121	49.8	1,090	107	210	229	95% KM (Chebyshev) UCL	108	210	230	95% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-3 ft	N/A	mg/kg	74	63	143	45.7	1,440	123	279	266	95% KM (Chebyshev) UCL	124	279	267	95% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-10 ft	N/A	mg/kg	77	63	143	45.7	1,440	118	275	256	95% KM (Chebyshev) UCL	120	274	257	95% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Diesel Range Organics	>10 ft	N/A	mg/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	N/A	mg/kg	57	52	439	311	2,300	402	462	671	95% KM (Chebyshev) UCL	403	461	672	95% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Residual Range Organics	0-3 ft	N/A	mg/kg	74	66	391	247	2,300	351	443	577	95% KM (Chebyshev) UCL	352	442	578	95% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Residual Range Organics	0-10 ft	N/A	mg/kg	77	66	391	247	2,300	338	439	558	95% KM (Chebyshev) UCL	340	438	559	95% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Residual Range Organics	>10 ft	N/A	mg/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	N/A	mg/kg	36	8	2.70	3.00	3.49	2.02	0.687	2.29	95% KM (t) UCL	2.44	0.705	2.83	95% KM (t) UCL
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-3 ft	N/A	mg/kg	44	10	411	3.15	3,960	94.8	590	1,030	99% KM (Chebyshev) UCL	95.2	590	1,030	99% KM (Chebyshev) UCL
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-10 ft	N/A	mg/kg	47	10	411	3.15	3,960	88.9	571	963	99% KM (Chebyshev) UCL	89.2	571	963	99% KM (Chebyshev) UCL
Soil	NWTPH-Gx	Total	Gasoline Range Organics	>10 ft	N/A	mg/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Benzoic Acid	0-1 ft	N/A	ug/kg	31	12	148	69.6	980	81.9	185	166	95% KM (BCA) UCL	95.9	189	183	95% KM (BCA) UCL
Soil	SVOCs	Total	Benzoic Acid	0-3 ft	N/A	ug/kg	39	12	148	69.6	980	66.9	164	132	95% KM (BCA) UCL	81.8	166	141	95% KM (BCA) UCL
Soil	SVOCs	Total	Benzoic Acid	0-10 ft	N/A	ug/kg	42	12	148	69.6	980	62.1	158	130	95% KM (BCA) UCL	77.0	159	137	95% KM (BCA) UCL
Soil	SVOCs	Total	Benzoic Acid	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	N/A	ug/kg	31	21	19,200	1,500	260,000	13,100	46,400	98,000	99% KM (Chebyshev) UCL	13,100	46,400	98,000	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-3 ft	N/A	ug/kg	40	29	15,400	1,040	260,000	11,200	41,200	77,100	99% KM (Chebyshev) UCL	11,200	41,200	77,100	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-10 ft	N/A	ug/kg	43	32	14,000	938	260,000	10,400	39,800	71,800	99% KM (Chebyshev) UCL	10,400	39,800	71,800	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	>10 ft	N/A	ug/kg	6	6	85.1	38.1	266	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	N/A	ug/kg	31	5	38.5	15.7	124	9.59	22.1	17.1	95% KM (t) UCL	12.3	24.7	22.1	95% KM (t) UCL
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-3 ft	N/A	ug/kg	39	6	37.4	23.7	124	9.14	20.2	15.2	95% KM (t) UCL	10.7	22.1	18.0	95% KM (t) UCL
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-10 ft	N/A	ug/kg	42	6	37.4	23.7	124	8.73	19.5	14.3	95% KM (t) UCL	10.2	21.2	16.9	95% KM (t) UCL
Soil	SVOCs	Total	Butyl Benzyl Phthalate	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Carbazole	0-1 ft	N/A	ug/kg	31	20	141	68.5	530	91.8	144	144	95% KM (BCA) UCL	96.4	142	144	95% KM (BCA) UCL
Soil	SVOCs	Total	Carbazole	0-3 ft	N/A	ug/kg	39	24	118	35.0	530	73.7	133	112	95% KM (BCA) UCL	76.8	132	113	95% KM (BCA) UCL
Soil	SVOCs	Total	Carbazole	0-10 ft	N/A	ug/kg	42	24	118	35.0	530	68.5	130	105	95% KM (BCA) UCL	71.5	129	105	95% KM (BCA) UCL
Soil	SVOCs	Total	Carbazole	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Dibenzofuran	0-1 ft	N/A	ug/kg	31	19	41.0	10.0	220	26.0	47.6	42.4	95% KM (BCA) UCL	28.4	48.2	43.6	95% KM (BCA) UCL
Soil	SVOCs	Total	Dibenzofuran	0-3 ft	N/A	ug/kg	40	24	58.1	8.90	485	35.5	85.3	122	97.5% KM (Chebyshev) UCL	37.4	85.3	124	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Dibenzofuran	0-10 ft	N/A	ug/kg	43	24	58.1	8.90	485	33.1	82.7	114	97.5% KM (Chebyshev) UCL	34.9	82.8	116	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Dibenzofuran	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Dimethyl Phthalate	0-1 ft	N/A	ug/kg	31	3	34.3	32.0	41.0	30.5	2.14	31.4	95% KM (t) UCL	30.6	2.26	31.6	95% KM (t) UCL
Soil	SVOCs	Total	Dimethyl Phthalate	0-3 ft	N/A	ug/kg	39	3	34.3	32.0	41.0	30.4	1.88	31.0	95% KM (t) UCL	30.4	1.96	31.2	95% KM (t) UCL
Soil	SVOCs	Total	Dimethyl Phthalate	0-10 ft	N/A	ug/kg	42	3	34.3	32.0	41.0	30.4	1.80	31.0	95% KM (t) UCL	30.4	1.88	31.0	95% KM (t) UCL
Soil	SVOCs	Total	Dimethyl Phthalate	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	N/A	ug/kg	31	10	107	102	280	44.9	66.6	80.4	95% KM (Percentile Bootstrap) UCL	48.8	68.8	82.3	95% KM (Percentile Bootstrap) UCL
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-3 ft	N/A	ug/kg	39	14	82.0	49.0	280	36.5	61.1	54.3	95% KM (t) UCL	39.4	62.6	58.3	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-10 ft	N/A	ug/kg	42	14	82.0	49.0	280	33.6	59.5	50.2	95% KM (t) UCL	36.3	60.8	53.9	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-butyl Phthalate	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	N/A	ug/kg	31	5	49.4	31.0	127	17.6	22.1	25.1	95% KM (t) UCL	19.9	25.1	29.9	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-3 ft	N/A	ug/kg	39	6	45.0	27.0	127	16.6	19.9	22.5	95% KM (t) UCL	18.1	22.0	25.4	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-10 ft	N/A	ug/kg	42	7	51.1	31.0	127	18.1	22.1	24.3	95% KM (t) UCL	20.0	24.5	27.7	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-octyl Phthalate	>10 ft	N/A	ug/kg	6	2	5.73	5.73	7.06	4.84	0.991	-	-	5.73	1.33	-	-
Soil	SVOCs	Total	Pentachlorophenol	0-1 ft	N/A	ug/kg	31	2	21.5	21.5	32.0	11.9	4.28	14.1	95% KM (t) UCL	12.2	4.94	15.1	95% KM (t) UCL
Soil	SVOCs	Total	Pentachlorophenol	0-3 ft	N/A	ug/kg	39	2	21.5	21.5	32.0	11.7	3.71	13.3	95% KM (t) UCL	12.0	4.58	14.5	95% KM (t) UCL

Table I-13
Statistical Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(4 of 9)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	SVOCs	Total	Pentachlorophenol	0-10 ft	N/A	ug/kg	42	2	21.5	21.5	32.0	11.6	3.55	-	-	11.9	4.28	-	-
Soil	SVOCs	Total	Pentachlorophenol	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Phenol	0-1 ft	N/A	ug/kg	31	2	2.85	2.85	3.70	2.08	0.371	2.28	95% KM (t) UCL	2.85	0.850	4.29	95% KM (t) UCL
Soil	SVOCs	Total	Phenol	0-3 ft	N/A	ug/kg	39	5	9.22	3.00	35.0	3.09	5.57	35.0	95% KM (BCA) UCL	3.93	6.01	6.58	95% KM (BCA) UCL
Soil	SVOCs	Total	Phenol	0-10 ft	N/A	ug/kg	42	5	9.22	3.00	35.0	3.00	5.34	-	-	3.82	5.73	6.14	95% KM (BCA) UCL
Soil	SVOCs	Total	Phenol	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	2-Methylnaphthalene	0-1 ft	N/A	ug/kg	31	16	28.0	25.0	150	15.5	28.4	27.4	95% KM (BCA) UCL	16.2	29.1	26.5	95% KM (BCA) UCL
Soil	SVOCs	Total	2-Methylnaphthalene	0-3 ft	N/A	ug/kg	40	18	32.0	25.0	150	15.4	31.0	23.9	95% KM (t) UCL	16.0	31.6	24.8	95% KM (t) UCL
Soil	SVOCs	Total	2-Methylnaphthalene	0-10 ft	N/A	ug/kg	43	19	30.4	22.9	150	14.4	30.1	22.4	95% KM (t) UCL	14.9	30.6	23.2	95% KM (t) UCL
Soil	SVOCs	Total	2-Methylnaphthalene	>10 ft	N/A	ug/kg	6	1	7.98	7.98	7.98	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Acenaphthene	0-1 ft	N/A	ug/kg	31	25	92.5	29.3	470	74.9	121	172	95% KM (Chebyshev) UCL	75.0	121	172	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Acenaphthene	0-3 ft	N/A	ug/kg	40	31	189	20.0	3,200	147	503	652	97.5% KM (Chebyshev) UCL	147	503	652	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Acenaphthene	0-10 ft	N/A	ug/kg	43	32	183	18.0	3,200	137	486	607	97.5% KM (Chebyshev) UCL	137	486	608	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Acenaphthene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Acenaphthylene	0-1 ft	N/A	ug/kg	31	14	21.6	9.82	87.7	11.2	19.2	17.4	95% KM (t) UCL	12.0	20.1	18.8	95% KM (t) UCL
Soil	SVOCs	Total	Acenaphthylene	0-3 ft	N/A	ug/kg	40	16	37.9	12.1	295	16.4	47.8	29.6	95% KM (t) UCL	17.2	48.5	30.8	95% KM (t) UCL
Soil	SVOCs	Total	Acenaphthylene	0-10 ft	N/A	ug/kg	43	16	37.9	12.1	295	15.4	46.3	27.6	95% KM (t) UCL	16.0	46.9	28.6	95% KM (t) UCL
Soil	SVOCs	Total	Acenaphthylene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Anthracene	0-1 ft	N/A	ug/kg	31	29	158	29.0	832	148	239	338	95% KM (Chebyshev) UCL	148	239	338	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Anthracene	0-3 ft	N/A	ug/kg	40	35	203	21.3	2,040	178	372	772	99% KM (Chebyshev) UCL	178	372	772	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Anthracene	0-10 ft	N/A	ug/kg	43	36	197	19.6	2,040	166	362	723	99% KM (Chebyshev) UCL	166	362	723	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Anthracene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Fluorene	0-1 ft	N/A	ug/kg	31	23	84.2	17.5	462	63.4	113	154	95% KM (Chebyshev) UCL	65.2	113	156	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluorene	0-3 ft	N/A	ug/kg	40	28	104	15.2	779	73.3	153	227	97.5% KM (Chebyshev) UCL	74.6	153	229	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluorene	0-10 ft	N/A	ug/kg	43	28	104	15.2	779	68.3	149	212	97.5% KM (Chebyshev) UCL	69.4	149	214	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluorene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	31	19	38.9	8.90	227	24.8	45.0	108	99% KM (Chebyshev) UCL	25.9	45.6	112	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Naphthalene	0-3 ft	N/A	ug/kg	40	24	42.0	7.72	256	26.1	54.8	81.4	97.5% KM (Chebyshev) UCL	27.0	55.4	83.7	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Naphthalene	0-10 ft	N/A	ug/kg	43	24	42.0	7.72	256	24.4	53.2	76.2	97.5% KM (Chebyshev) UCL	25.2	53.7	78.2	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Naphthalene	>10 ft	N/A	ug/kg	6	1	4.24	4.24	4.24	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Phenanthrene	0-1 ft	N/A	ug/kg	31	31	707	116	4,000	-	-	1,260	Use 95% Adjusted Gamma UCL	-	-	1,260	Use 95% Adjusted Gamma UCL
Soil	SVOCs	Total	Phenanthrene	0-3 ft	N/A	ug/kg	40	38	797	97.0	6,550	757	1,350	2,910	99% KM (Chebyshev) UCL	757	1,350	2,910	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Phenanthrene	0-10 ft	N/A	ug/kg	43	39	777	79.0	6,550	705	1,320	2,730	99% KM (Chebyshev) UCL	705	1,320	2,730	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Phenanthrene	>10 ft	N/A	ug/kg	6	1	1.82	1.82	1.82	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	N/A	ug/kg	31	31	1039	168	5687	1039	1603	1849	95% Adjusted Gamma UCL	1049	1608	1850	95% Adjusted Gamma UCL
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	N/A	ug/kg	40	38	1268	135	13120	1205	2403	5036	99% KM (Chebyshev) UCL	1214	2405	5048	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)anthracene	0-1 ft	N/A	ug/kg	31	29	787	190	6,440	736	1,270	1,750	95% KM (Chebyshev) UCL	736	1,270	1,750	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)anthracene	0-3 ft	N/A	ug/kg	40	35	1,070	183	12,300	935	2,160	2,450	95% KM (Chebyshev) UCL	935	2,160	2,450	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)anthracene	0-10 ft	N/A	ug/kg	43	36	1,040	148	12,300	870	2,100	4,100	99% KM (Chebyshev) UCL	870	2,100	4,100	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)anthracene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Benzo(a)pyrene	0-1 ft	N/A	ug/kg	31	30	771	180	6,470	746	1,280	1,760	95% KM (Chebyshev) UCL	746	1,280	1,760	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)pyrene	0-3 ft	N/A	ug/kg	40	36	1,030	155	11,700	926	2,090	2,390	95% KM (Chebyshev) UCL	926	2,090	2,390	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)pyrene	0-10 ft	N/A	ug/kg	43	37	1,000	151	11,700	862	2,030	3,980	99% KM (Chebyshev) UCL	862	2,030	3,980	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)pyrene	>10 ft	N/A	ug/kg	6	1	1.32	1.32	1.32	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	N/A	ug/kg	13	13	1,350	1,100	4,100	-	-	1,950	Use 95% Student's-t UCL	-	-	1,950	Use 95% Student's-t UCL
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-3 ft	N/A	ug/kg	18	17	1,050	640	4,100	991	1,150	2,210	95% KM (Chebyshev) UCL	991	1,150	2,210	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-10 ft	N/A	ug/kg	18	17	1,050	640	4,100	991	1,150	2,210	95% KM (Chebyshev) UCL	991	1,150	2,210	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	N/A	ug/kg	31	26	534	180	3,830	449	774	1,070	95% KM (Chebyshev) UCL	449	774	1,070	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-3 ft	N/A	ug/kg	40	33	555	120	3,830	459	843	1,050	95% KM (Chebyshev) UCL	459	843	1,050	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-10 ft	N/A	ug/kg	43	34	540	114	3,830	428	821	982	95% KM (Chebyshev) UCL	428	821	982	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(g,h,i)perylene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	N/A	ug/kg	13	13	469	360	1,400	-	-	676	Use 95% Student's-t UCL	-	-	676	Use 95% Student's-t UCL
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-3 ft	N/A	ug/kg	18	17	365	220	1,400	345	396	764	95% KM (Chebyshev) UCL	345	396	764	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-10 ft	N/A	ug/kg	18	17	365	220	1,400	345	396	764	95% KM (Chebyshev) UCL	345	396	764	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-1 ft	N/A	ug/kg	18	17	1,100	74.2	12,100	1,040	2,780	7,760	99% KM (Chebyshev) UCL	1,040	2,780	7,760	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-3 ft	N/A	ug/kg	22	20	1,900	105	16,300	1,730	4,090	10,600	99% KM (Chebyshev) UCL	1,730	4,090	10,600	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-10 ft	N/A	ug/kg	25	21	1,810	74.2	16,300	1,520	3,880	9,420	99% KM (Chebyshev) UCL	1,520	3,880	9,420	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzofluoranthenes, Total	>10 ft	N/A	ug/kg	6	2	2.84	2.84	2.97	2.76	0.0932	-	-	2.84	0.125	-	-
Soil	SVOCs	Total	Chrysene	0-1 ft	N/A	ug/kg	31	30	904	222	7,590	875	1,500	2,070	95% KM (Chebyshev) UCL	875	1,500	2,070	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Chrysene	0-3 ft	N/A	ug/kg	40	37	1,120	129	12,000	1,030	2,230	4,590	99% KM (Chebyshev) UCL	1,030	2,230	4,590	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Chrysene	0-10 ft	N/A	ug/kg	43	38	1,090	124	12,000	962	2,170	4,290	99% KM (Chebyshev) UCL	962	2,170	4,290	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Chrysene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	N/A	ug/kg	31	20	232	113	1,430	150	280	244	95% KM (BCA) UCL	150	280	246	95% KM (BCA) UCL
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-3 ft	N/A	ug/kg	40	26	235	93.2	1,430	153	295	238	95% KM (BCA) UCL	154	295	237	95% KM (BCA) UCL
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-10 ft	N/A	ug/kg	43	26	235	93.2	1,430	143	287	224	95% KM (BCA) UCL	143	287	224	95% KM (BCA) UCL
Soil	SVOCs	Total	Dibenz(a,h)anthracene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Fluoranthene	0-1 ft	N/A	ug/kg	31	30	1,710	284	20,700	1,660	3,740	4,640	95% KM (Chebyshev) UCL	1,660	3,740	4,640	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluoranthene	0-3 ft	N/A	ug/kg	40	37	2,290	216	28,600	2,120	5,420	10,800	99% KM (Chebyshev) UCL	2,120	5,420	10,800	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluoranthene	0-10 ft	N/A	ug/kg	43	38	2,230	193	28,600	1,970	5,260	10,100	99% KM (Chebyshev) UCL	1,970	5,260	10,100	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluoranthene	>10 ft	N/A	ug/kg	6	2	3.72	3.72	3.90	3.59	0.138	-	-	3.59	0.138	-	-
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	N/A	ug/kg	31	28	530	155	3,910	479	811	1,130	95% KM (Chebyshev) UCL	479	811	1,130	95% KM (Chebyshev) UCL

Table I-13
Statistical Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(5 of 9)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-3 ft	N/A	ug/kg	40	35	575	97.8	4,170	503	944	1,160	95% KM (Chebyshev) UCL	503	944	1,160	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-10 ft	N/A	ug/kg	43	36	559	90.7	4,170	469	920	1,880	99% KM (Chebyshev) UCL	469	920	1,880	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	>10 ft	N/A	ug/kg	6	1	0.511	0.511	0.511	-	-	-	-	-	-	-	-
Soil	SVOCs	Total	Pyrene	0-1 ft	N/A	ug/kg	31	30	1,710	338	21,900	1,660	3,920	4,780	95% KM (Chebyshev) UCL	1,660	3,920	4,780	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Pyrene	0-3 ft	N/A	ug/kg	40	38	2,350	184	32,000	2,230	5,950	11,700	99% KM (Chebyshev) UCL	2,230	5,950	11,700	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Pyrene	0-10 ft	N/A	ug/kg	43	39	2,290	150	32,000	2,080	5,770	10,900	99% KM (Chebyshev) UCL	2,080	5,770	10,900	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Pyrene	>10 ft	N/A	ug/kg	6	3	3.21	3.31	3.71	2.90	0.444	-	-	2.90	0.444	-	-
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	N/A	ug/kg	31	30	7765	738	72270	7516	13891	18577	95% KM (Chebyshev) UCL	7517	13891	18578	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	N/A	ug/kg	40	38	9430	926	105200	8959	19945	40758	99% KM (Chebyshev) UCL	8961	19944	40758	99% KM (Chebyshev) UCL
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	N/A	ug/kg	37	2	0.535	0.535	0.580	0.494	0.0180	0.503	95% KM (t) UCL	0.535	0.0450	0.611	95% KM (t) UCL
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-3 ft	N/A	ug/kg	46	2	0.535	0.535	0.580	0.493	0.0157	-	-	0.535	0.0450	-	-
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-10 ft	N/A	ug/kg	49	3	0.389	0.490	0.580	0.122	0.102	0.157	95% KM (t) UCL	0.389	0.210	0.638	95% KM (t) UCL
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	N/A	ug/kg	37	15	0.246	0.230	0.523	0.195	0.0993	0.230	95% KM (t) UCL	0.246	0.0942	0.288	95% KM (t) UCL
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-3 ft	N/A	ug/kg	46	21	1,250	0.230	14,300	572	2,690	4,620	99% KM (Chebyshev) UCL	572	2,690	4,620	99% KM (Chebyshev) UCL
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-10 ft	N/A	ug/kg	49	21	1,250	0.230	14,300	537	2,610	4,340	99% KM (Chebyshev) UCL	537	2,610	4,340	99% KM (Chebyshev) UCL
Soil	VOCs	Total	1,2,4-Trimethylbenzene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	N/A	ug/kg	37	5	0.0909	0.0930	0.125	0.0534	0.0227	0.0621	95% KM (t) UCL	0.0909	0.0265	0.113	95% KM (t) UCL
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-3 ft	N/A	ug/kg	46	8	840	0.113	6,500	146	948	1,630	99% KM (Chebyshev) UCL	146	948	1,630	99% KM (Chebyshev) UCL
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-10 ft	N/A	ug/kg	49	8	840	0.113	6,500	137	919	1,530	99% KM (Chebyshev) UCL	137	919	1,530	99% KM (Chebyshev) UCL
Soil	VOCs	Total	1,3,5-Trimethylbenzene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	37	1	0.160	0.160	0.160	-	-	-	-	-	-	-	-
Soil	VOCs	Total	1,4-Dichlorobenzene	0-3 ft	N/A	ug/kg	46	2	0.150	0.150	0.160	0.141	0.00348	-	-	0.150	0.0100	-	-
Soil	VOCs	Total	1,4-Dichlorobenzene	0-10 ft	N/A	ug/kg	49	2	0.150	0.150	0.160	0.141	0.00333	-	-	0.150	0.0100	-	-
Soil	VOCs	Total	1,4-Dichlorobenzene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	2-Butanone (MEK)	0-1 ft	N/A	ug/kg	37	16	19.6	13.5	50.0	13.2	10.6	16.5	95% KM (t) UCL	14.3	10.3	17.6	95% KM (t) UCL
Soil	VOCs	Total	2-Butanone (MEK)	0-3 ft	N/A	ug/kg	46	19	17.0	13.0	50.0	10.2	11.0	13.3	95% KM (t) UCL	11.8	10.5	14.8	95% KM (t) UCL
Soil	VOCs	Total	2-Butanone (MEK)	0-10 ft	N/A	ug/kg	49	19	17.0	13.0	50.0	9.58	10.8	12.4	95% KM (t) UCL	11.0	10.4	13.8	95% KM (t) UCL
Soil	VOCs	Total	2-Butanone (MEK)	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	2-Hexanone	0-1 ft	N/A	ug/kg	37	3	6.33	5.50	8.80	4.90	0.828	5.25	95% KM (t) UCL	5.51	1.22	6.47	95% KM (t) UCL
Soil	VOCs	Total	2-Hexanone	0-3 ft	N/A	ug/kg	46	3	6.33	5.50	8.80	4.85	0.722	5.12	95% KM (t) UCL	5.47	1.17	6.36	95% KM (t) UCL
Soil	VOCs	Total	2-Hexanone	0-10 ft	N/A	ug/kg	49	3	6.33	5.50	8.80	4.84	0.692	5.08	95% KM (t) UCL	5.38	1.06	6.16	95% KM (t) UCL
Soil	VOCs	Total	2-Hexanone	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	4-Isopropyltoluene	0-1 ft	N/A	ug/kg	37	14	1.63	0.415	12.0	0.749	1.98	1.33	95% KM (t) UCL	1.21	2.26	2.02	95% KM (t) UCL
Soil	VOCs	Total	4-Isopropyltoluene	0-3 ft	N/A	ug/kg	46	17	10.9	0.900	161	4.25	23.7	20.1	95% KM (Chebyshev) UCL	4.85	23.9	21.1	95% KM (Chebyshev) UCL
Soil	VOCs	Total	4-Isopropyltoluene	0-10 ft	N/A	ug/kg	49	17	10.9	0.900	161	3.98	23.0	18.9	95% KM (Chebyshev) UCL	4.53	23.2	19.7	95% KM (Chebyshev) UCL
Soil	VOCs	Total	4-Isopropyltoluene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	N/A	ug/kg	37	9	0.668	0.670	1.20	0.486	0.221	0.574	95% KM (t) UCL	0.668	0.233	0.807	95% KM (t) UCL
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-3 ft	N/A	ug/kg	46	9	0.668	0.670	1.20	0.453	0.207	0.525	95% KM (t) UCL	0.668	0.233	0.806	95% KM (t) UCL
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-10 ft	N/A	ug/kg	49	9	0.668	0.670	1.20	0.449	0.202	0.519	95% KM (t) UCL	0.668	0.233	0.806	95% KM (t) UCL
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	Acetone	0-1 ft	N/A	ug/kg	37	18	190	155	540	104	126	156	95% KM (Percentile Bootstrap) UCL	106	127	158	95% KM (Percentile Bootstrap) UCL
Soil	VOCs	Total	Acetone	0-3 ft	N/A	ug/kg	46	23	154	150	540	90.5	118	122	95% KM (t) UCL	93.0	118	124	95% KM (t) UCL
Soil	VOCs	Total	Acetone	0-10 ft	N/A	ug/kg	49	23	154	150	540	84.8	116	114	95% KM (t) UCL	86.8	116	117	95% KM (t) UCL
Soil	VOCs	Total	Acetone	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	Benzene	0-1 ft	N/A	ug/kg	37	15	0.474	0.450	1.20	0.413	0.278	0.524	95% KM (t) UCL	0.471	0.284	0.598	95% KM (t) UCL
Soil	VOCs	Total	Benzene	0-3 ft	N/A	ug/kg	46	17	0.484	0.470	1.20	0.373	0.265	0.463	95% KM (t) UCL	0.482	0.269	0.593	95% KM (t) UCL
Soil	VOCs	Total	Benzene	0-10 ft	N/A	ug/kg	49	19	0.481	0.470	1.20	0.379	0.257	0.462	95% KM (t) UCL	0.479	0.256	0.579	95% KM (t) UCL
Soil	VOCs	Total	Benzene	>10 ft	N/A	ug/kg	6	1	0.631	0.631	0.631	-	-	-	-	-	-	-	-
Soil	VOCs	Total	Bromomethane	0-1 ft	N/A	ug/kg	37	7	1.81	0.570	5.00	0.870	1.17	1.44	95% KM (BCA) UCL	1.26	1.49	2.08	95% KM (BCA) UCL
Soil	VOCs	Total	Bromomethane	0-3 ft	N/A	ug/kg	46	8	1.69	0.705	5.00	0.785	1.02	1.11	95% KM (t) UCL	1.10	1.26	1.64	95% KM (t) UCL
Soil	VOCs	Total	Bromomethane	0-10 ft	N/A	ug/kg	49	8	1.69	0.705	5.00	0.761	0.982	1.06	95% KM (t) UCL	1.04	1.18	1.51	95% KM (t) UCL
Soil	VOCs	Total	Bromomethane	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	Carbon Disulfide	0-1 ft	N/A	ug/kg	37	19	1.05	0.700	6.90	0.793	1.11	1.14	95% KM (% Bootstrap) UCL	0.876	1.08	1.22	95% KM (% Bootstrap) UCL
Soil	VOCs	Total	Carbon Disulfide	0-3 ft	N/A	ug/kg	46	24	1.07	0.690	6.90	0.828	1.07	1.12	95% KM (t) UCL	0.916	1.04	1.22	95% KM (% Bootstrap) UCL
Soil	VOCs	Total	Carbon Disulfide	0-10 ft	N/A	ug/kg	49	24	1.07	0.690	6.90	0.775	1.04	1.05	95% KM (t) UCL	0.894	1.01	1.16	95% KM (t) UCL
Soil	VOCs	Total	Carbon Disulfide	>10 ft	N/A	ug/kg	6	1	1.04	1.04	1.04	-	-	-	-	-	-	-	-
Soil	VOCs	Total	Chloroform	0-1 ft	N/A	ug/kg	37	3	6.52	0.290	19.0	0.768	3.04	6.86	99% KM (Chebyshev) UCL	0.781	3.04	6.87	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Chloroform	0-3 ft	N/A	ug/kg	46	3	6.52	0.290	19.0	0.677	2.76	5.70	99% KM (Chebyshev) UCL	0.691	2.76	5.71	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Chloroform	0-10 ft	N/A	ug/kg	49	3	6.52	0.290	19.0	0.651	2.68	5.36	99% KM (Chebyshev) UCL	0.665	2.67	5.37	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Chloroform	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	Chloromethane	0-1 ft	N/A	ug/kg	37	2	0.240	0.240	0.250	0.231	0.00458	0.234	95% KM (t) UCL	0.240	0.0100	0.257	95% KM (t) UCL
Soil	VOCs	Total	Chloromethane	0-3 ft	N/A	ug/kg	46	2	0.240	0.240	0.250	0.231	0.00408	-	-	0.240	0.0100	-	-
Soil	VOCs	Total	Chloromethane	0-10 ft	N/A	ug/kg	49	2	0.240	0.240	0.250	0.231	0.00408	-	-	0.240	0.0100	-	-
Soil	VOCs	Total	Chloromethane	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	37	1	12.0	12.0	12.0	-	-	-	-	-	-	-	-
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-3 ft	N/A	ug/kg	46	2	66.0	66.0	120	14.4	15.9	-	-	14.4	15.9	-	-
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-10 ft	N/A	ug/kg	49	4	48.8	35.2	120	8.61	18.0	13.6	95% KM (t) UCL	8.61	18.0	13.6	95% KM (t) UCL
Soil	VOCs	Total	cis-1,2-Dichloroethene	>10 ft	N/A	ug/kg	6	3	0.859	0.628	1.54	0.635	0.413	-	-	0.774	0.452	-	-
Soil	VOCs	Total	Dichlorodifluoromethane	0-1 ft	N/A	ug/kg	37	4	27.7	8.35	94.0	3.24	15.3	8.15	95% KM (t) UCL	3.42	15.3	8.34	95% KM (t) UCL
Soil	VOCs	Total	Dichlorodifluoromethane	0-3 ft	N/A	ug/kg	46	4	27.7	8.35	94.0	2.71	14.0	6.74	95% KM (t) UCL	2.90	13.9	6.94	95% KM (t) UCL

Table I-13
Statistical Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(6 of 9)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	VOCs	Total	Dichlorodifluoromethane	0-10 ft	N/A	ug/kg	49	5	22.2	0.695	94.0	2.40	13.6	6.06	95% KM (t) UCL	2.62	13.5	6.29	95% KM (t) UCL
Soil	VOCs	Total	Dichlorodifluoromethane	>10 ft	N/A	ug/kg	6	4	0.206	0.147	0.467	0.162	0.142	-	-	0.206	0.155	-	-
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	N/A	ug/kg	37	12	38.7	0.410	460	12.8	74.5	140	99% KM (Chebyshev) UCL	12.8	74.5	140	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-3 ft	N/A	ug/kg	46	17	27.4	0.390	460	10.6	67.8	56.0	95% KM (Chebyshev) UCL	10.6	67.7	56.0	95% KM (Chebyshev) UCL
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-10 ft	N/A	ug/kg	49	17	27.4	0.390	460	9.93	65.6	52.5	95% KM (Chebyshev) UCL	9.99	65.6	52.6	95% KM (Chebyshev) UCL
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	>10 ft	N/A	ug/kg	6	2	7.47	7.47	13.8	3.25	4.72	-	-	3.25	4.72	-	-
Soil	VOCs	Total	Ethylbenzene	0-1 ft	N/A	ug/kg	37	8	0.145	0.105	0.320	0.104	0.0640	0.132	95% KM (t) UCL	0.145	0.0791	0.195	95% KM (t) UCL
Soil	VOCs	Total	Ethylbenzene	0-3 ft	N/A	ug/kg	46	10	3.86	0.105	37.4	0.926	5.50	4.69	95% KM (Chebyshev) UCL	0.965	5.49	4.73	95% KM (Chebyshev) UCL
Soil	VOCs	Total	Ethylbenzene	0-10 ft	N/A	ug/kg	49	10	3.86	0.105	37.4	0.873	5.33	4.41	95% KM (Chebyshev) UCL	0.913	5.32	4.44	95% KM (Chebyshev) UCL
Soil	VOCs	Total	Ethylbenzene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	m,p-Xylenes	0-1 ft	N/A	ug/kg	37	8	0.271	0.245	0.440	0.198	0.0985	0.240	95% KM (t) UCL	0.271	0.111	0.342	95% KM (t) UCL
Soil	VOCs	Total	m,p-Xylenes	0-3 ft	N/A	ug/kg	46	11	677	0.250	7,400	162	1,080	1,820	99% KM (Chebyshev) UCL	162	1,080	1,820	99% KM (Chebyshev) UCL
Soil	VOCs	Total	m,p-Xylenes	0-10 ft	N/A	ug/kg	49	11	677	0.250	7,400	152	1,050	1,710	99% KM (Chebyshev) UCL	152	1,050	1,710	99% KM (Chebyshev) UCL
Soil	VOCs	Total	m,p-Xylenes	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	37	8	0.675	0.540	1.50	0.529	0.219	0.610	95% KM (t) UCL	0.636	0.287	0.792	95% KM (t) UCL
Soil	VOCs	Total	Naphthalene	0-3 ft	N/A	ug/kg	46	11	2.50	0.540	19.5	0.973	2.81	1.94	95% KM (BCA) UCL	1.30	3.30	2.66	95% KM (BCA) UCL
Soil	VOCs	Total	Naphthalene	0-10 ft	N/A	ug/kg	49	11	2.50	0.540	19.5	0.940	2.72	1.79	95% KM (BCA) UCL	1.23	3.16	2.40	95% KM (BCA) UCL
Soil	VOCs	Total	Naphthalene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	n-Propylbenzene	0-1 ft	N/A	ug/kg	37	1	0.150	0.150	0.150	-	-	-	-	-	-	-	-
Soil	VOCs	Total	n-Propylbenzene	0-3 ft	N/A	ug/kg	46	3	40.8	0.409	122	2.87	18.0	35.5	99% KM (Chebyshev) UCL	3.05	18.1	36.4	99% KM (Chebyshev) UCL
Soil	VOCs	Total	n-Propylbenzene	0-10 ft	N/A	ug/kg	49	3	40.8	0.409	122	2.70	17.4	33.3	99% KM (Chebyshev) UCL	2.87	17.6	34.1	99% KM (Chebyshev) UCL
Soil	VOCs	Total	n-Propylbenzene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	o-Xylene	0-1 ft	N/A	ug/kg	37	2	0.175	0.175	0.180	0.171	0.00223	0.172	95% KM (t) UCL	0.175	0.00500	0.183	95% KM (t) UCL
Soil	VOCs	Total	o-Xylene	0-3 ft	N/A	ug/kg	46	5	652	0.197	3,200	71.0	466	200	95% KM (t) UCL	71.0	466	200	95% KM (t) UCL
Soil	VOCs	Total	o-Xylene	0-10 ft	N/A	ug/kg	49	5	652	0.197	3,200	66.6	452	188	95% KM (t) UCL	66.6	452	188	95% KM (t) UCL
Soil	VOCs	Total	o-Xylene	>10 ft	N/A	ug/kg	6	1	0.184	0.184	0.184	-	-	-	-	-	-	-	-
Soil	VOCs	Total	sec-Butylbenzene	0-1 ft	N/A	ug/kg	37	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	sec-Butylbenzene	0-3 ft	N/A	ug/kg	46	2	45.3	45.3	90.2	2.43	13.2	-	-	2.48	13.4	-	-
Soil	VOCs	Total	sec-Butylbenzene	0-10 ft	N/A	ug/kg	49	2	45.3	45.3	90.2	2.30	12.8	-	-	2.34	13.0	-	-
Soil	VOCs	Total	sec-Butylbenzene	>10 ft	N/A	ug/kg	6	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	N/A	ug/kg	37	2	1.63	1.63	3.10	0.244	0.483	1.38	99% KM (Chebyshev) UCL	0.582	1.03	6.05	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-3 ft	N/A	ug/kg	46	5	85,900	5.84	420,000	9,340	61,200	26,300	95% KM (t) UCL	9,340	61,200	26,300	95% KM (t) UCL
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-10 ft	N/A	ug/kg	49	8	53,700	10.1	420,000	8,760	59,400	99,000	99% KM (Chebyshev) UCL	8,770	59,400	99,000	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Tetrachloroethene (PCE)	>10 ft	N/A	ug/kg	6	2	0.336	0.336	0.437	0.269	0.0753	-	-	0.336	0.101	-	-
Soil	VOCs	Total	Toluene	0-1 ft	N/A	ug/kg	37	18	1.02	0.765	5.80	0.835	0.907	1.11	95% KM (t) UCL	0.861	0.900	1.14	95% KM (t) UCL
Soil	VOCs	Total	Toluene	0-3 ft	N/A	ug/kg	46	26	1,500	0.695	39,000	849	5,690	9,360	99% KM (Chebyshev) UCL	849	5,690	9,360	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Toluene	0-10 ft	N/A	ug/kg	49	26	1,500	0.695	39,000	797	5,510	8,790	99% KM (Chebyshev) UCL	797	5,510	8,790	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Toluene	>10 ft	N/A	ug/kg	6	1	5.20	5.20	5.20	-	-	-	-	-	-	-	-
Soil	VOCs	Total	Trichloroethene (TCE)	0-1 ft	N/A	ug/kg	37	4	0.0912	0.0661	0.171	0.0678	0.0216	0.0766	95% KM (t) UCL	0.0912	0.0461	0.136	95% KM (t) UCL
Soil	VOCs	Total	Trichloroethene (TCE)	0-3 ft	N/A	ug/kg	46	7	1,330	0.171	6,080	202	993	1,780	99% KM (Chebyshev) UCL	202	993	1,780	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Trichloroethene (TCE)	0-10 ft	N/A	ug/kg	49	10	931	0.761	6,080	190	963	1,630	99% KM (Chebyshev) UCL	190	963	1,630	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Trichloroethene (TCE)	>10 ft	N/A	ug/kg	6	6	0.207	0.190	0.374	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Aluminum	0-1 ft	N/A	mg/kg	2	2	10,600	10,600	13,000	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Antimony	0-1 ft	N/A	mg/kg	2	2	0.280	0.280	0.340	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Arsenic	0-1 ft	N/A	mg/kg	2	2	5.92	5.92	5.94	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Barium	0-1 ft	N/A	mg/kg	2	2	91.6	91.6	108	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Beryllium	0-1 ft	N/A	mg/kg	2	2	0.295	0.295	0.350	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Cadmium	0-1 ft	N/A	mg/kg	2	2	0.759	0.759	1.06	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Chromium	0-1 ft	N/A	mg/kg	2	2	135	135	162	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Cobalt	0-1 ft	N/A	mg/kg	2	2	12.1	12.1	13.4	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Copper	0-1 ft	N/A	mg/kg	2	2	59.0	59.0	71.6	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Lead	0-1 ft	N/A	mg/kg	2	2	310	310	319	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Manganese	0-1 ft	N/A	mg/kg	2	2	424	424	479	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Mercury	0-1 ft	N/A	mg/kg	2	2	0.0360	0.0360	0.0390	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Nickel	0-1 ft	N/A	mg/kg	2	2	66.2	66.2	74.9	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Selenium	0-1 ft	N/A	mg/kg	2	2	0.575	0.575	0.650	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Silver	0-1 ft	N/A	mg/kg	2	2	0.151	0.151	0.175	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Thallium	0-1 ft	N/A	mg/kg	2	2	0.0920	0.0920	0.117	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Vanadium	0-1 ft	N/A	mg/kg	2	2	64.5	64.5	69.8	-	-	-	-	-	-	-	-
Erodible Soil Subset	Metals	Total	Zinc	0-1 ft	N/A	mg/kg	2	2	163	163	203	-	-	-	-	-	-	-	-
Erodible Soil Subset	Butyltins	Total	Dibutyltin	0-1 ft	N/A	ug/kg	2	2	7.90	7.90	9.10	-	-	-	-	-	-	-	-
Erodible Soil Subset	Butyltins	Total	Monobutyltin	0-1 ft	N/A	ug/kg	2	2	5.72	5.72	8.25	-	-	-	-	-	-	-	-
Erodible Soil Subset	Butyltins	Total	Tributyltin	0-1 ft	N/A	ug/kg	2	2	8.02	8.02	12.8	-	-	-	-	-	-	-	-
Erodible Soil Subset	Pesticides	Total	4,4'-DDE	0-1 ft	N/A	ug/kg	2	2	0.345	0.345	0.440	-	-	-	-	-	-	-	-
Erodible Soil Subset	Pesticides	Total	4,4'-DDT	0-1 ft	N/A	ug/kg	2	2	7.20	7.20	10.0	-	-	-	-	-	-	-	-
Erodible Soil Subset	Pesticides	Total	Heptachlor	0-1 ft	N/A	ug/kg	2	2	0.283	0.283	0.380	-	-	-	-	-	-	-	-
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1260	0-1 ft	N/A	ug/kg	2	2	47.0	47.0	67.0	-	-	-	-	-	-	-	-
Erodible Soil Subset	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	N/A	ug/kg	2	2	49.1	49.1	69.1	-	-	-	-	-	-	-	-
Erodible Soil Subset	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	N/A	mg/kg	2	2	51.0	51.0	69.0	-	-	-	-	-	-	-	-
Erodible Soil Subset	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	N/A	mg/kg	2	2	700	700	1,000	-	-	-	-	-	-	-	-
Erodible Soil Subset	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	N/A	mg/kg	8	4	2.50	2.50	3.20	2.15	0.534	2.56	95% KM (t) UCL	2.50	0.570	3.12	95% KM (t) UCL

Table I-13
Statistical Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(7 of 9)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Erodible Soil Subset	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	N/A	ug/kg	2	2	159,000	159,000	260,000	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Carbazole	0-1 ft	N/A	ug/kg	2	2	64.2	64.2	91.0	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Acenaphthene	0-1 ft	N/A	ug/kg	2	2	51.2	51.2	68.0	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Anthracene	0-1 ft	N/A	ug/kg	2	2	102	102	150	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Phenanthrene	0-1 ft	N/A	ug/kg	2	2	650	650	940	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	N/A	ug/kg	2	2	952	952	1,356	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Benzo(a)anthracene	0-1 ft	N/A	ug/kg	2	2	828	828	1,200	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Benzo(a)pyrene	0-1 ft	N/A	ug/kg	2	2	718	718	1,000	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	N/A	ug/kg	2	2	1,120	1,120	1,600	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	N/A	ug/kg	2	2	430	430	590	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	N/A	ug/kg	2	2	400	400	570	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Chrysene	0-1 ft	N/A	ug/kg	2	2	1,040	1,040	1,500	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	N/A	ug/kg	2	2	158	158	220	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Fluoranthene	0-1 ft	N/A	ug/kg	2	2	1,460	1,460	2,100	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	N/A	ug/kg	2	2	495	495	690	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Pyrene	0-1 ft	N/A	ug/kg	2	2	1,340	1,340	1,900	-	-	-	-	-	-	-	-
Erodible Soil Subset	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	N/A	ug/kg	2	2	7,988	7,988	11,370	-	-	-	-	-	-	-	-
Erodible Soil Subset	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	N/A	ug/kg	8	6	0.218	0.225	0.280	0.210	0.0417	0.243	95% KM (t) UCL	0.218	0.0393	0.252	95% KM (t) UCL
Erodible Soil Subset	VOCs	Total	2-Butanone (MEK)	0-1 ft	N/A	ug/kg	8	7	27.0	32.0	50.0	27.0	14.8	38.4	95% KM (t) UCL	27.0	14.8	38.4	95% KM (t) UCL
Erodible Soil Subset	VOCs	Total	2-Hexanone	0-1 ft	N/A	ug/kg	8	3	6.33	5.50	8.80	5.40	1.42	6.64	95% KM (t) UCL	6.33	1.78	8.71	95% KM (t) UCL
Erodible Soil Subset	VOCs	Total	4-Isopropyltoluene	0-1 ft	N/A	ug/kg	8	3	1.32	0.990	2.50	0.841	0.700	1.46	95% KM (t) UCL	1.32	0.858	2.47	95% KM (t) UCL
Erodible Soil Subset	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	N/A	ug/kg	8	3	0.920	0.790	1.20	0.834	0.149	0.965	95% KM (t) UCL	0.920	0.198	1.18	95% KM (t) UCL
Erodible Soil Subset	VOCs	Total	Acetone	0-1 ft	N/A	ug/kg	8	7	252	270	540	234	153	346	95% KM (t) UCL	252	154	372	95% KM (t) UCL
Erodible Soil Subset	VOCs	Total	Benzene	0-1 ft	N/A	ug/kg	8	4	0.458	0.335	1.00	0.339	0.288	0.578	95% KM (t) UCL	0.458	0.335	0.824	95% KM (t) UCL
Erodible Soil Subset	VOCs	Total	Bromomethane	0-1 ft	N/A	ug/kg	8	2	3.10	3.10	5.00	1.74	1.33	-	-	3.10	1.90	5.00	95% KM (BCA) UCL
Erodible Soil Subset	VOCs	Total	Carbon Disulfide	0-1 ft	N/A	ug/kg	8	7	0.796	0.700	1.00	0.796	0.151	0.912	95% KM (t) UCL	0.796	0.151	0.912	95% KM (t) UCL
Erodible Soil Subset	VOCs	Total	Chloroform	0-1 ft	N/A	ug/kg	8	3	6.52	0.290	19.0	2.61	6.20	29.3	99% KM (Chebyshev) UCL	2.62	6.19	29.3	99% KM (Chebyshev) UCL
Erodible Soil Subset	VOCs	Total	Chloromethane	0-1 ft	N/A	ug/kg	8	2	0.240	0.240	0.250	0.233	0.00700	0.240	95% KM (t) UCL	0.240	0.0100	0.259	95% KM (t) UCL
Erodible Soil Subset	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	N/A	ug/kg	8	4	115	0.470	460	57.8	152	675	99% KM (Chebyshev) UCL	57.9	152	675	99% KM (Chebyshev) UCL
Erodible Soil Subset	VOCs	Total	Ethylbenzene	0-1 ft	N/A	ug/kg	8	3	0.137	0.110	0.200	0.116	0.0346	0.146	95% KM (t) UCL	0.137	0.0450	0.197	95% KM (t) UCL
Erodible Soil Subset	VOCs	Total	m,p-Xylenes	0-1 ft	N/A	ug/kg	8	3	0.263	0.240	0.360	0.221	0.0591	0.273	95% KM (t) UCL	0.263	0.0713	0.359	95% KM (t) UCL
Erodible Soil Subset	VOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	8	2	0.495	0.495	0.540	0.463	0.0315	0.495	95% KM (t) UCL	0.495	0.0450	0.580	95% KM (t) UCL
Erodible Soil Subset	VOCs	Total	Toluene	0-1 ft	N/A	ug/kg	8	7	0.811	0.770	1.30	0.811	0.336	1.07	95% KM (t) UCL	0.811	0.336	1.07	95% KM (t) UCL
Groundwater	Metals	Total	Arsenic	N/A	N/A	ug/L	20	20	1.38	0.773	11.6	-	-	3.74	95% Chebyshev (Mean, Sd) UCL	-	-	3.74	95% Chebyshev (Mean, Sd) UCL
Groundwater	Metals	Total	Iron	N/A	N/A	ug/L	20	16	222	156	1,500	181	316	499	95% KM (Chebyshev) UCL	181	316	499	95% KM (Chebyshev) UCL
Groundwater	Metals	Total	Vanadium	N/A	N/A	ug/L	20	18	1.47	1.35	5.90	1.34	1.20	2.54	95% KM (Chebyshev) UCL	1.34	1.20	2.54	95% KM (Chebyshev) UCL
Groundwater	Metals	Dissolved	Arsenic	N/A	N/A	ug/L	20	20	1.23	0.820	8.99	-	-	3.03	95% Chebyshev (Mean, Sd) UCL	-	-	3.03	95% Chebyshev (Mean, Sd) UCL
Groundwater	Metals	Dissolved	Calcium	N/A	N/A	ug/L	5	5	26,600	28,200	44,300	-	-	-	-	-	-	-	-
Groundwater	Metals	Dissolved	Iron	N/A	N/A	ug/L	20	7	108	52.5	270	42.0	78.4	74.7	95% KM (t) UCL	43.2	77.8	75.8	95% KM (t) UCL
Groundwater	Metals	Dissolved	Magnesium	N/A	N/A	ug/L	5	5	7,320	7,120	14,000	-	-	-	-	-	-	-	-
Groundwater	Metals	Dissolved	Potassium	N/A	N/A	ug/L	5	5	1,660	1,480	2,610	-	-	-	-	-	-	-	-
Groundwater	Metals	Dissolved	Sodium	N/A	N/A	ug/L	5	5	27,100	13,400	89,400	-	-	-	-	-	-	-	-
Groundwater	Metals	Dissolved	Vanadium	N/A	N/A	ug/L	20	15	1.25	1.17	3.10	0.973	0.760	1.33	95% KM (Percentile Bootstrap) UCL	1.02	0.756	1.37	95% KM (Percentile Bootstrap) UCL
Groundwater	Butyltins	Total	Monobutyltin	N/A	N/A	ug/L	20	2	0.0200	0.0200	0.0260	0.0164	0.00480	0.0216	95% KM (t) UCL	0.0200	0.00600	0.0304	95% KM (t) UCL
Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	N/A	ug/L	20	2	17.5	17.5	18.0	17.1	0.266	17.3	95% KM (t) UCL	17.5	0.500	18.4	95% KM (t) UCL
Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	N/A	ug/L	20	3	17.3	15.0	23.5	14.1	2.19	15.1	95% KM (t) UCL	17.3	4.40	22.7	95% KM (t) UCL
Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/L	5	2	1.06	1.06	1.90	0.556	0.672	-	-	0.556	0.672	-	-
Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	N/A	ug/L	5	2	2.66	2.66	5.00	1.26	1.87	-	-	1.26	1.87	-	-
Groundwater	VOCs	Total	Carbon Disulfide	N/A	N/A	ug/L	5	5	0.173	0.170	0.255	-	-	-	-	-	-	-	-
Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/L	20	15	164	2.50	660	123	233	658	99% KM (Chebyshev) UCL	123	233	658	99% KM (Chebyshev) UCL
Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	N/A	ug/L	20	16	2.24	1.55	6.20	1.86	1.94	2.66	95% KM (BCA) UCL	1.87	1.93	2.54	95% KM (BCA) UCL
Groundwater	VOCs	Total	Toluene	N/A	N/A	ug/L	5	5	0.444	0.510	0.640	-	-	-	-	-	-	-	-
Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	N/A	ug/L	5	2	0.905	0.905	1.70	0.428	0.636	-	-	0.428	0.636	-	-
Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/L	20	15	1.81	1.90	3.40	1.39	1.35	3.35	97.5% KM (Chebyshev) UCL	1.41	1.34	3.34	97.5% KM (Chebyshev) UCL
Groundwater	VOCs	Total	Vinyl Chloride	N/A	N/A	ug/L	20	4	1.77	1.25	4.10	0.738	0.813	1.10	95% KM (t) UCL	0.738	0.813	1.10	95% KM (t) UCL
DP Groundwater	Metals	Total	Aluminum	N/A	N/A	ug/L	10	10	5,880	1,660	17,900	-	-	21,300	95% Adjusted Gamma UCL	-	-	21,300	95% Adjusted Gamma UCL
DP Groundwater	Metals	Total	Antimony	N/A	N/A	ug/L	10	9	0.650	0.477	1.57	0.623	0.387	0.861	95% KM (t) UCL	0.623	0.387	0.861	95% KM (t) UCL
DP Groundwater	Metals	Total	Arsenic	N/A	N/A	ug/L	10	8	2.40	1.52	7.70	1.94	2.34	3.40	95% KM (t) UCL	1.96	2.33	3.40	95% KM (t) UCL
DP Groundwater	Metals	Total	Barium	N/A	N/A	ug/L	10	10	35.6	20.5	97.8	-	-	67.9	95% Approximate Gamma UCL	-	-	67.9	95% Approximate Gamma UCL
DP Groundwater	Metals	Total	Beryllium	N/A	N/A	ug/L	10	4	0.367	0.263	0.785	0.241	0.187	0.366	95% KM (t) UCL	0.283	0.177	0.414	95% KM (t) UCL
DP Groundwater	Metals	Total	Calcium	N/A	N/A	ug/L	10	10	27,500	28,000	33,700	-	-	30,800	95% Student's-t UCL	-	-	30,800	95% Student's-t UCL
DP Groundwater	Metals	Total	Chromium	N/A	N/A	ug/L	10	10	11.5	8.72	31.8	-	-	16.8	95% Student's-t UCL	-	-	16.8	95% Student's-t UCL
DP Groundwater	Metals	Total	Cobalt	N/A	N/A	ug/L	10	6	5.58	4.73	13.1	4.02	3.47	6.22	95% KM (t) UCL	4.44	3.26	6.57	95% KM (t) UCL
DP Groundwater	Metals	Total	Copper	N/A	N/A	ug/L	10	10	32.3	5.56	204	-	-	113	95% Adjusted Gamma UCL	-	-	113	95% Adjusted Gamma UCL
DP Groundwater	Metals	Total	Iron	N/A	N/A	ug/L	10	9	9,080	3,220	25,900	8,180	9,720	22,400	95% KM (Chebyshev) UCL	8,180	9,720	22,400	95% KM (Chebyshev) UCL
DP Groundwater	Metals	Total	Lead	N/A	N/A	ug/L	10	7	4.27	2.58	13.7	3.01	4.21	5.64	95% KM (t) UCL	3.01	4.21	5.64	95% KM (t) UCL
DP Groundwater	Metals	Total	Magnesium	N/A	N/A	ug/L	10	10	9,540	9,000	15,400	-	-	11,600	95% Student's-t UCL	-	-	11,600	95% Student's-t UCL
DP Groundwater	Metals	Total	Manganese	N/A	N/A	ug/L	10	10	225	128	708	-	-	368	95% Student's-t UCL	-	-	368	95% Student's-t UCL
DP Groundwater	Metals	Total	Mercury	N/A	N/A	ug/L	10	2	0.0880	0.0880	0.100	0.0784	0.00720	0.0843	95% KM (t) UCL	0.0880	0.0120	0.110	95% KM (t) UCL
DP Groundwater	Metals	Total	Nickel	N/A	N/A	ug/L	10	9	6.49	3.27	21.4	5.94	6.22	15.0	95% KM (Chebyshev) UCL	6.21	6.14	15.3	95% KM (Chebyshev) UCL
DP Groundwater	Metals	Total	Potassium	N/A	N/A	ug/L	10	10	1,760	1,800	3,210	-	-	2,190	95% Student's-t UCL	-	-	2,190	95% Student's-t UCL

Table I-13
Statistical Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(8 of 9)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
DP Groundwater	Metals	Total	Selenium	N/A	N/A	ug/L	10	10	1.33	1.24	2.06	-	-	1.59	95% Student's-t UCL	-	-	1.59	95% Student's-t UCL
DP Groundwater	Metals	Total	Silver	N/A	N/A	ug/L	10	9	0.112	0.0450	0.376	0.102	0.115	0.271	95% KM (Chebyshev) UCL	0.104	0.114	0.271	95% KM (Chebyshev) UCL
DP Groundwater	Metals	Total	Sodium	N/A	N/A	ug/L	10	10	12,900	8,440	42,900	-	-	28,700	95% Chebyshev (Mean, Sd) UCL	-	-	28,700	95% Chebyshev (Mean, Sd) UCL
DP Groundwater	Metals	Total	Thallium	N/A	N/A	ug/L	10	7	0.0751	0.0570	0.146	0.0655	0.0318	0.0854	95% KM (t) UCL	0.0751	0.0337	0.100	95% KM (t) UCL
DP Groundwater	Metals	Total	Vanadium	N/A	N/A	ug/L	10	10	20.3	7.32	77.6	-	-	47.0	95% Approximate Gamma UCL	-	-	47.0	95% Approximate Gamma UCL
DP Groundwater	Metals	Total	Zinc	N/A	N/A	ug/L	10	10	14.8	7.73	44.4	-	-	27.0	95% Approximate Gamma UCL	-	-	27.0	95% Approximate Gamma UCL
DP Groundwater	Metals	Dissolved	Aluminum	N/A	N/A	ug/L	10	7	245	15.1	1,370	173	407	1,560	99% KM (Chebyshev) UCL	176	406	1,560	99% KM (Chebyshev) UCL
DP Groundwater	Metals	Dissolved	Antimony	N/A	N/A	ug/L	10	10	0.406	0.300	1.67	-	-	1.02	95% Chebyshev (Mean, Sd) UCL	-	-	1.02	95% Chebyshev (Mean, Sd) UCL
DP Groundwater	Metals	Dissolved	Arsenic	N/A	N/A	ug/L	10	10	0.929	1.04	1.36	-	-	1.14	95% Student's-t UCL	-	-	1.14	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Barium	N/A	N/A	ug/L	10	10	9.43	7.80	20.6	-	-	12.5	95% Student's-t UCL	-	-	12.5	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Calcium	N/A	N/A	ug/L	10	10	24,700	26,700	34,100	-	-	29,000	95% Student's-t UCL	-	-	29,000	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Chromium	N/A	N/A	ug/L	10	10	2.74	3.02	4.29	-	-	3.39	95% Student's-t UCL	-	-	3.39	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Cobalt	N/A	N/A	ug/L	10	8	2.73	2.37	5.08	2.43	1.38	3.28	95% KM (t) UCL	2.66	1.34	3.57	95% KM (t) UCL
DP Groundwater	Metals	Dissolved	Copper	N/A	N/A	ug/L	10	7	1.41	0.958	4.38	1.23	1.06	1.94	95% KM (BCA) UCL	1.23	1.06	1.96	95% KM (BCA) UCL
DP Groundwater	Metals	Dissolved	Iron	N/A	N/A	ug/L	10	4	212	166	476	107	136	198	95% KM (t) UCL	107	136	198	95% KM (t) UCL
DP Groundwater	Metals	Dissolved	Lead	N/A	N/A	ug/L	10	6	0.0988	0.0330	0.378	0.0884	0.120	0.400	97.5% KM (Chebyshev) UCL	0.0988	0.127	0.454	97.5% KM (Chebyshev) UCL
DP Groundwater	Metals	Dissolved	Magnesium	N/A	N/A	ug/L	10	10	7,180	6,850	12,000	-	-	8,730	95% Student's-t UCL	-	-	8,730	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Manganese	N/A	N/A	ug/L	10	10	91.6	24.0	587	-	-	322	95% Adjusted Gamma UCL	-	-	322	95% Adjusted Gamma UCL
DP Groundwater	Metals	Dissolved	Mercury	N/A	N/A	ug/L	10	2	0.0575	0.0575	0.0600	0.0555	0.00150	0.0567	95% KM (t) UCL	0.0575	0.00250	0.0621	95% KM (t) UCL
DP Groundwater	Metals	Dissolved	Nickel	N/A	N/A	ug/L	10	3	1.13	0.880	2.10	0.714	0.589	1.21	95% KM (t) UCL	1.13	0.715	2.05	95% KM (t) UCL
DP Groundwater	Metals	Dissolved	Potassium	N/A	N/A	ug/L	10	10	1,300	1,170	2,210	-	-	1,660	95% Student's-t UCL	-	-	1,660	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Selenium	N/A	N/A	ug/L	10	10	0.696	0.630	1.30	-	-	0.904	95% Student's-t UCL	-	-	0.904	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Silver	N/A	N/A	ug/L	10	8	0.0364	0.0270	0.0790	0.0339	0.0164	0.0446	95% KM (BCA) UCL	0.0364	0.0175	0.0477	95% KM (BCA) UCL
DP Groundwater	Metals	Dissolved	Sodium	N/A	N/A	ug/L	10	10	14,200	8,820	47,700	-	-	32,300	95% Chebyshev (Mean, Sd) UCL	-	-	32,300	95% Chebyshev (Mean, Sd) UCL
DP Groundwater	Metals	Dissolved	Thallium	N/A	N/A	ug/L	10	3	0.0542	0.0460	0.0855	0.0380	0.0165	0.0496	95% KM (t) UCL	0.0542	0.0230	0.0840	95% KM (t) UCL
DP Groundwater	Metals	Dissolved	Vanadium	N/A	N/A	ug/L	10	6	1.35	1.24	2.61	1.24	0.648	1.74	95% KM (t) UCL	1.35	0.637	1.88	95% KM (t) UCL
DP Groundwater	Metals	Dissolved	Zinc	N/A	N/A	ug/L	10	4	2.50	2.26	3.48	2.20	0.449	2.50	95% KM (t) UCL	2.20	0.449	2.50	95% KM (t) UCL
DP Groundwater	Butyltins	Total	Monobutyltin	N/A	N/A	ug/L	4	2	0.00596	0.00596	0.00671	-	-	-	-	-	-	-	-
DP Groundwater	Butyltins	Total	Tributyltin	N/A	N/A	ug/L	4	2	0.00360	0.00360	0.00435	-	-	-	-	-	-	-	-
DP Groundwater	Pesticides	Total	BHC (gamma) Lindane	N/A	N/A	ug/L	3	3	0.00191	0.00232	0.00249	-	-	-	-	-	-	-	-
DP Groundwater	Pesticides	Total	Methoxychlor	N/A	N/A	ug/L	3	2	0.00310	0.00310	0.00521	-	-	-	-	-	-	-	-
DP Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	N/A	ug/L	6	2	17.8	17.8	20.9	15.7	2.31	-	-	17.8	3.10	-	-
DP Groundwater	SVOCs	Total	2-Methylnaphthalene	N/A	N/A	ug/L	9	6	0.0669	0.0471	0.153	0.0511	0.0474	0.0833	95% KM (t) UCL	0.0520	0.0468	0.0838	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Acenaphthene	N/A	N/A	ug/L	9	5	0.0124	0.00812	0.0230	0.00932	0.00604	0.0135	95% KM (t) UCL	0.0112	0.00594	0.0163	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Benzyl Alcohol	N/A	N/A	ug/L	7	2	0.0512	0.0512	0.0523	0.0503	0.000805	-	-	0.0512	0.00115	-	-
DP Groundwater	SVOCs	Total	Butyl Benzyl Phthalate	N/A	N/A	ug/L	9	6	0.161	0.156	0.228	0.150	0.0357	0.176	95% KM (t) UCL	0.161	0.0359	0.190	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Dibenzofuran	N/A	N/A	ug/L	9	2	0.0329	0.0329	0.0421	0.0257	0.00578	0.0308	95% KM (t) UCL	0.0329	0.00920	0.0500	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Di-n-butyl Phthalate	N/A	N/A	ug/L	9	6	0.162	0.161	0.239	0.159	0.0420	0.193	95% KM (t) UCL	0.159	0.0420	0.193	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Fluorene	N/A	N/A	ug/L	9	6	0.0160	0.0128	0.0351	0.0126	0.00940	0.0190	95% KM (t) UCL	0.0140	0.00883	0.0202	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Isophorone	N/A	N/A	ug/L	9	2	0.0664	0.0664	0.0842	0.0526	0.0112	0.0624	95% KM (t) UCL	0.0664	0.0178	0.0995	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Naphthalene	N/A	N/A	ug/L	9	4	0.0322	0.0307	0.0452	0.0266	0.00782	0.0322	95% KM (t) UCL	0.0322	0.00907	0.0419	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Phenanthrene	N/A	N/A	ug/L	9	8	0.0278	0.0104	0.144	0.0256	0.0420	0.0909	95% KM (Chebyshev) UCL	0.0258	0.0419	0.0910	95% KM (Chebyshev) UCL
DP Groundwater	SVOCs	Total	Phenol	N/A	N/A	ug/L	8	5	0.0220	0.0228	0.0291	0.0179	0.00733	0.0234	95% KM (t) UCL	0.0220	0.00647	0.0281	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Pyrene	N/A	N/A	ug/L	9	3	0.0109	0.00329	0.0261	0.00573	0.00720	-	-	0.00577	0.00719	0.0261	95% KM (BCA) UCL
DP Groundwater	SVOCs	Dissolved	2-Methylnaphthalene	N/A	N/A	ug/L	8	6	0.0939	0.0286	0.280	0.0744	0.0963	0.237	95% KM (Chebyshev) UCL	0.0761	0.0954	0.237	95% KM (Chebyshev) UCL
DP Groundwater	SVOCs	Dissolved	Acenaphthene	N/A	N/A	ug/L	8	5	0.0146	0.0104	0.0348	0.0110	0.00992	0.0184	95% KM (t) UCL	0.0127	0.00959	0.0205	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Butyl Benzyl Phthalate	N/A	N/A	ug/L	8	6	0.134	0.136	0.155	0.134	0.0173	0.149	95% KM (t) UCL	0.134	0.0173	0.149	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Diethyl Phthalate	N/A	N/A	ug/L	8	3	0.0761	0.0687	0.101	0.0651	0.0140	0.0766	95% KM (t) UCL	0.0761	0.0181	0.100	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Di-n-butyl Phthalate	N/A	N/A	ug/L	8	6	0.157	0.153	0.207	0.157	0.0282	0.181	95% KM (t) UCL	0.157	0.0282	0.181	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Fluorene	N/A	N/A	ug/L	8	5	0.00790	0.00714	0.0116	0.00739	0.00162	0.00875	95% KM (BCA) UCL	0.00790	0.00187	0.00946	95% KM (BCA) UCL
DP Groundwater	SVOCs	Dissolved	Isophorone	N/A	N/A	ug/L	8	2	0.0633	0.0633	0.0782	0.0520	0.00989	0.0614	95% KM (t) UCL	0.0633	0.0150	0.0916	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Naphthalene	N/A	N/A	ug/L	8	6	0.107	0.0955	0.200	0.0873	0.0722	0.140	95% KM (t) UCL	0.0888	0.0711	0.141	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Phenanthrene	N/A	N/A	ug/L	8	6	0.0113	0.0103	0.0190	0.00952	0.00519	0.0133	95% KM (t) UCL	0.0113	0.00486	0.0154	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Phenol	N/A	N/A	ug/L	4	3	0.0180	0.0192	0.0248	-	-	-	-	-	-	-	-
DP Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/L	10	7	0.467	0.127	2.22	0.348	0.638	1.71	97.5% KM (Chebyshev) UCL	0.380	0.632	1.74	97.5% KM (Chebyshev) UCL
DP Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	N/A	ug/L	10	5	0.604	0.173	2.52	0.330	0.730	0.876	95% KM (BCA) UCL	0.365	0.718	0.863	95% KM (BCA) UCL
DP Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	N/A	ug/L	10	2	0.614	0.614	1.16	0.173	0.331	1.64	99% KM (Chebyshev) UCL	0.173	0.331	1.64	99% KM (Chebyshev) UCL
DP Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	N/A	ug/L	10	3	0.0406	0.0415	0.0485	0.0344	0.00555	0.0383	95% KM (t) UCL	0.0406	0.00689	0.0495	95% KM (t) UCL
DP Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	N/A	ug/L	10	3	0.142	0.130	0.179	0.125	0.0186	0.138	95% KM (t) UCL	0.142	0.0267	0.177	95% KM (t) UCL
DP Groundwater	VOCs	Total	Acetone	N/A	N/A	ug/L	10	3	2.23	1.59	3.88	1.52	0.793	2.09	95% KM (t) UCL	2.23	1.18	3.76	95% KM (t) UCL
DP Groundwater	VOCs	Total	Benzene	N/A	N/A	ug/L	10	6	0.0744	0.0600	0.137	0.0664	0.0247	0.0821	95% KM (t) UCL	0.0744	0.0293	0.0984	95% KM (t) UCL
DP Groundwater	VOCs	Total	Chloroform	N/A	N/A	ug/L	10	2	0.132	0.132	0.174	0.0990	0.0250	0.119	95% KM (t) UCL	0.132	0.0417	0.209	95% KM (t) UCL
DP Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/L	10	9	57.3	4.54	341	51.6	106	206	95% KM (Chebyshev) UCL	51.6	106	207	95% KM (Chebyshev) UCL
DP Groundwater	VOCs	Total	Ethylbenzene	N/A	N/A	ug/L	10	4	0.0402	0.0402	0.0447	0.0377	0.00307	0.0399	95% KM (t) UCL	0.0402	0.00318	0.0435	95% KM (t) UCL
DP Groundwater	VOCs	Total	m,p-Xylenes	N/A	N/A	ug/L	10	4	0.119	0.132	0.132	0.0971	0.0226	0.112	95% KM (t) UCL	0.119	0.0214	0.142	95% KM (t) UCL
DP Groundwater	VOCs	Total	Naphthalene	N/A	N/A	ug/L	10	2	0.0406	0.0406	0.0452	0.0375	0.00347	0.0411	95% KM (t) UCL	0.0406	0.00465	0.0491	95% KM (t) UCL
DP Groundwater	VOCs	Total	o-Xylene	N/A	N/A	ug/L	10	4	0.0507	0.0495	0.0735	0.0385	0.0139	0.0478	95% KM (t) UCL	0.0507	0.0153	0.0669	95% KM (t) UCL
DP Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	N/A	ug/L	10	10	7.80	1.45	54.5	-	-	27.6	95% Adjusted Gamma UCL	-	-	27.6	95% Adjusted Gamma UCL
DP Groundwater	VOCs	Total	Toluene	N/A	N/A	ug/L	10	6	0.205	0.199	0.299	0.189	0.0787	0.249	95% KM (t) UCL	0.205	0.0733	0.265	95% KM (t) UCL
DP Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	N/A	ug/L	10	3	0.995	1.09	1.80	0.365	0.563	0.765	95% KM (t) UCL	0.365	0.563	0.765	95% KM (t) UCL
DP Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/L	10	9	5.83	0.597	43.7	5.26	12.8	48.1	99% KM (Chebyshev) UCL	5.28	12.8	48.1	99% KM (Chebyshev) UCL

Table I-13
Statistical Summary for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(9 of 9)

Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Sieve Size	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
DP Groundwater	VOCs	Total	Vinyl Chloride	N/A	N/A	ug/L	10	2	0.372	0.372	0.611	0.180	0.144	-	-	0.372	0.240	-	-
Soil Gas	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/m^3	5	5	28.1	13.0	98.0	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	1,2,4-Trimethylbenzene	N/A	N/A	ug/m^3	5	5	4,360	930	18,500	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	1,3,5-Trimethylbenzene	N/A	N/A	ug/m^3	5	5	1,440	240	6,250	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	1,3-Butadiene	N/A	N/A	ug/m^3	5	4	58.6	11.0	210	48.4	80.9	-	-	48.4	80.9	-	-
Soil Gas	VOCs	Total	2-Butanone (MEK)	N/A	N/A	ug/m^3	5	2	23.5	23.5	31.0	19.8	6.50	-	-	19.8	6.50	-	-
Soil Gas	VOCs	Total	4-Ethyltoluene	N/A	N/A	ug/m^3	5	5	2,050	260	9,150	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	Acetone	N/A	N/A	ug/m^3	5	2	90.0	90.0	97.0	85.8	5.60	-	-	86.5	6.06	-	-
Soil Gas	VOCs	Total	Benzene	N/A	N/A	ug/m^3	5	4	28.0	12.5	85.0	24.2	31.0	-	-	28.0	33.4	-	-
Soil Gas	VOCs	Total	Carbon Disulfide	N/A	N/A	ug/m^3	5	3	16.6	5.90	42.0	10.9	15.6	-	-	12.9	16.9	-	-
Soil Gas	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/m^3	5	5	115	69.0	330	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	Cyclohexane	N/A	N/A	ug/m^3	5	3	9.60	3.00	24.0	7.65	9.45	-	-	7.80	9.37	-	-
Soil Gas	VOCs	Total	Dichlorodifluoromethane	N/A	N/A	ug/m^3	5	2	3.10	3.10	3.20	3.10	0.100	-	-	3.10	0.100	-	-
Soil Gas	VOCs	Total	Ethanol	N/A	N/A	ug/m^3	5	2	13.0	13.0	13.0	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	Ethylbenzene	N/A	N/A	ug/m^3	5	5	352	78.0	1,550	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	Heptane	N/A	N/A	ug/m^3	5	4	49.4	51.5	87.0	41.0	31.8	-	-	41.0	31.8	-	-
Soil Gas	VOCs	Total	Hexane	N/A	N/A	ug/m^3	5	4	33.0	10.3	110	27.8	41.3	-	-	33.0	44.6	-	-
Soil Gas	VOCs	Total	Isopropylbenzene	N/A	N/A	ug/m^3	5	5	148	12.0	675	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	m,p-Xylenes	N/A	N/A	ug/m^3	5	5	1,330	310	5,850	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	n-Propylbenzene	N/A	N/A	ug/m^3	5	5	513	56.0	2,300	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	o-Xylene	N/A	N/A	ug/m^3	5	5	630	120	2,800	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	Tetrachloroethene (PCE)	N/A	N/A	ug/m^3	5	5	7,590	800	34,000	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	Toluene	N/A	N/A	ug/m^3	5	5	10,700	2,000	47,500	-	-	-	-	-	-	-	-
Soil Gas	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/m^3	5	5	214	41.0	610	-	-	-	-	-	-	-	-

Notes
Only those analytes with at least 2 detected results are shown on this table.
If not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.
The erodible soil subset is comprised of the following samples: SB-EUA, SB-EUB, SB-EUA-02, SB-EUA-04, SB-EUA-06, SB-EUA-08, SB-EUB-02, SB-EUB-03, SB-EUB-12, SB-EUB-15, and SB-04.

% = percent
DP = Direct Push
KM = Kaplan-Meier
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = method reporting limit
MW Soil = Mass Wasting Soil
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SD = standard deviation
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
ug/m^3 = micrograms per cubic meters
UCL = upper confidence limit

Table I-14
Statistical Summary for Pistol Range AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 1)

											Statistics - ND censored at the MDL				Statistics - ND censored at the MRL			
Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	Metals	Total	Copper	0-1 ft	mg/kg	14	14	38.1	46.2	53.1	-	-	44.9	Use 95% Student's-t UCL	-	-	44.9	Use 95% Student's-t UCL
Soil	Metals	Total	Lead	0-1 ft	mg/kg	63	63	208	60.0	1,110	-	-	365	Use 95% Chebyshev (Mean, Sd) UCL	-	-	365	Use 95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Nickel	0-1 ft	mg/kg	10	10	23.7	23.5	32.0	-	-	25.9	Use 95% Student's-t UCL	-	-	25.9	Use 95% Student's-t UCL
Soil	Metals	Total	Zinc	0-1 ft	mg/kg	10	10	124	114	199	-	-	148	Use 95% Student's-t UCL	-	-	148	Use 95% Student's-t UCL
Lagoon Sediment	Metals	Total	Copper	N/A	mg/kg	5	5	23.1	23.9	25.4	-	-	-	-	-	-	-	-
Lagoon Sediment	Metals	Total	Lead	N/A	mg/kg	5	5	27.1	27.5	33.0	-	-	-	-	-	-	-	-
Lagoon Sediment	Metals	Total	Nickel	N/A	mg/kg	5	5	14.2	14.5	15.4	-	-	-	-	-	-	-	-
Lagoon Sediment	Metals	Total	Zinc	N/A	mg/kg	5	5	156	160	174	-	-	-	-	-	-	-	-
DP Groundwater	Metals	Total	Copper	N/A	ug/L	2	2	47.4	47.4	54.8	-	-	-	-	-	-	-	-
DP Groundwater	Metals	Total	Lead	N/A	ug/L	2	2	11.5	11.5	12.6	-	-	-	-	-	-	-	-
DP Groundwater	Metals	Total	Nickel	N/A	ug/L	2	2	35.8	35.8	50.1	-	-	-	-	-	-	-	-
DP Groundwater	Metals	Total	Zinc	N/A	ug/L	2	2	114	114	149	-	-	-	-	-	-	-	-
DP Groundwater	Metals	Dissolved	Copper	N/A	ug/L	2	2	0.733	0.733	0.800	-	-	-	-	-	-	-	-
DP Groundwater	Metals	Dissolved	Zinc	N/A	ug/L	2	2	3.10	3.10	4.10	-	-	-	-	-	-	-	-

Notes
Only those analytes with at least 2 detected results are shown on this table.
If not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.

% = percent
DP = Direct Push
KM = Kaplan-Meier
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = method reporting limit
ND = non-detect
SD = standard deviation
ug/L = micrograms per liter
UCL = upper confidence limit

Table I-15
Statistical Summary for Bulb Slope AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 1)

											Statistics - ND censored at the MDL				Statistics - ND censored at the MRL			
Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	Metals	Total	Lead	0-1 ft	mg/kg	12	12	222	199	597	-	-	307	Use 95% Student's-t UCL	-	-	307	Use 95% Student's-t UCL
Soil	Metals	Total	Mercury	0-1 ft	mg/kg	12	12	0.404	0.280	1.54	-	-	0.720	Use 95% Approximate Gamma UCL	-	-	0.720	Use 95% Approximate Gamma UCL
Soil	PCB Aroclors	Total	Aroclor 1260	0-1 ft	ug/kg	12	8	89.4	63.6	251	69.8	65.8	108	95% KM (Percentile Bootstrap) UCL	69.8	65.8	107	95% KM (Percentile Bootstrap) UCL
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	ug/kg	12	8	89.4	63.6	251	69.8	65.8	104	95% KM (Percentile Bootstrap) UCL	69.8	65.8	107	95% KM (Percentile Bootstrap) UCL
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	mg/kg	8	8	47.7	31.0	170	-	-	102	Use 95% Approximate Gamma UCL	-	-	102	Use 95% Approximate Gamma UCL
Soil	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	mg/kg	8	8	152	130	410	-	-	232	Use 95% Student's-t UCL	-	-	232	Use 95% Student's-t UCL

Notes
Only those analytes with at least 2 detected results are shown on this table.
If not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.

% = percent
KM = Kaplan-Meier
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = method reporting limit
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
PCB = polychlorinated biphenyl
SD = standard deviation
ug/kg = micrograms per kilogram
UCL = upper confidence limit

Table I-16
Statistical Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(1 of 8)

											Statistics - ND censored at the MDL				Statistics - ND censored at the MRL			
Medium Group	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	Metals	Total	Aluminum	0-1 ft	mg/kg	68	68	7,950	6,350	24,300	-	-	9,180	95% Approximate Gamma UCL	-	-	9,180	95% Approximate Gamma UCL
Soil	Metals	Total	Aluminum	0-3 ft	mg/kg	87	87	8,910	7,620	24,300	-	-	10,100	95% Approximate Gamma UCL	-	-	10,100	95% Approximate Gamma UCL
Soil	Metals	Total	Aluminum	0-10 ft	mg/kg	104	104	9,070	7,600	24,300	-	-	10,100	95% Approximate Gamma UCL	-	-	10,100	95% Approximate Gamma UCL
Soil	Metals	Total	Antimony	0-1 ft	mg/kg	83	45	1.98	1.28	13.7	1.39	2.02	1.80	95% KM (BCA) UCL	1.39	2.02	1.81	95% KM (BCA) UCL
Soil	Metals	Total	Antimony	0-3 ft	mg/kg	102	61	1.65	1.10	13.7	1.26	1.86	1.64	95% KM (BCA) UCL	1.26	1.86	1.58	95% KM (BCA) UCL
Soil	Metals	Total	Antimony	0-10 ft	mg/kg	119	78	1.72	1.06	13.7	1.36	1.93	1.71	95% KM (BCA) UCL	1.36	1.93	1.67	95% KM (BCA) UCL
Soil	Metals	Total	Arsenic	0-1 ft	mg/kg	84	78	7.11	4.47	80.9	6.79	11.2	9.20	95% KM (BCA) UCL	6.80	11.2	9.01	95% KM (BCA) UCL
Soil	Metals	Total	Arsenic	0-3 ft	mg/kg	103	97	6.78	4.70	80.9	6.55	10.1	8.20	95% KM (BCA) UCL	6.55	10.1	8.18	95% KM (BCA) UCL
Soil	Metals	Total	Arsenic	0-10 ft	mg/kg	120	114	6.38	4.50	80.9	6.20	9.46	7.85	95% KM (BCA) UCL	6.20	9.46	7.94	95% KM (BCA) UCL
Soil	Metals	Total	Barium	0-1 ft	mg/kg	79	79	80.3	77.9	242	-	-	88.0	95% Student's-t UCL	-	-	88.0	95% Student's-t UCL
Soil	Metals	Total	Barium	0-3 ft	mg/kg	98	98	81.6	80.2	242	-	-	88.2	95% Student's-t UCL	-	-	88.2	95% Student's-t UCL
Soil	Metals	Total	Barium	0-10 ft	mg/kg	115	115	83.0	85.1	242	-	-	88.9	95% Student's-t UCL	-	-	88.9	95% Student's-t UCL
Soil	Metals	Total	Beryllium	0-1 ft	mg/kg	79	44	0.329	0.302	0.630	0.228	0.147	0.272	95% KM (Percentile Bootstrap) UCL	0.303	0.108	0.327	95% KM (t) UCL
Soil	Metals	Total	Beryllium	0-3 ft	mg/kg	98	61	0.350	0.350	0.630	0.256	0.156	0.296	95% KM (Percentile Bootstrap) UCL	0.324	0.112	0.346	95% KM (t) UCL
Soil	Metals	Total	Beryllium	0-10 ft	mg/kg	115	73	0.338	0.320	0.630	0.251	0.149	0.288	95% KM (Percentile Bootstrap) UCL	0.317	0.108	0.336	95% KM (t) UCL
Soil	Metals	Total	Cadmium	0-1 ft	mg/kg	79	68	1.62	0.963	17.3	1.41	2.33	1.97	95% KM (BCA) UCL	1.42	2.32	1.93	95% KM (BCA) UCL
Soil	Metals	Total	Cadmium	0-3 ft	mg/kg	98	84	1.48	0.924	17.3	1.28	2.14	1.67	95% KM (BCA) UCL	1.29	2.13	1.67	95% KM (BCA) UCL
Soil	Metals	Total	Cadmium	0-10 ft	mg/kg	115	98	1.49	0.994	17.3	1.28	2.00	1.66	95% KM (BCA) UCL	1.29	1.99	1.62	95% KM (BCA) UCL
Soil	Metals	Total	Chromium	0-1 ft	mg/kg	82	82	305	49.8	2,650	-	-	567	95% Chebyshev (Mean, Sd) UCL	-	-	567	95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Chromium	0-3 ft	mg/kg	101	101	279	35.7	2,650	-	-	510	95% Chebyshev (Mean, Sd) UCL	-	-	510	95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Chromium	0-10 ft	mg/kg	118	118	279	34.6	2,650	-	-	501	95% Chebyshev (Mean, Sd) UCL	-	-	501	95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Cobalt	0-1 ft	mg/kg	68	68	12.4	12.1	25.0	-	-	13.4	95% Student's-t UCL	-	-	13.4	95% Student's-t UCL
Soil	Metals	Total	Cobalt	0-3 ft	mg/kg	87	87	13.4	12.8	41.0	-	-	14.3	95% Student's-t UCL	-	-	14.3	95% Student's-t UCL
Soil	Metals	Total	Cobalt	0-10 ft	mg/kg	104	104	13.8	13.3	42.3	-	-	14.8	95% Student's-t UCL	-	-	14.8	95% Student's-t UCL
Soil	Metals	Total	Copper	0-1 ft	mg/kg	93	93	62.8	43.8	494	-	-	95.0	95% Chebyshev (Mean, Sd) UCL	-	-	95.0	95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Copper	0-3 ft	mg/kg	112	112	64.0	45.7	494	-	-	93.6	95% Chebyshev (Mean, Sd) UCL	-	-	93.6	95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Copper	0-10 ft	mg/kg	129	129	64.1	45.3	494	-	-	91.5	95% Chebyshev (Mean, Sd) UCL	-	-	91.5	95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Lead	0-1 ft	mg/kg	157	157	270	128	3,260	-	-	398	95% Chebyshev (Mean, Sd) UCL	-	-	398	95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Lead	0-3 ft	mg/kg	182	182	274	119	3,260	-	-	396	95% Chebyshev (Mean, Sd) UCL	-	-	396	95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Lead	0-10 ft	mg/kg	199	199	280	124	3,260	-	-	396	95% Chebyshev (Mean, Sd) UCL	-	-	396	95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Manganese	0-1 ft	mg/kg	79	79	407	391	789	-	-	434	95% Student's-t UCL	-	-	434	95% Student's-t UCL
Soil	Metals	Total	Manganese	0-3 ft	mg/kg	98	98	434	396	1,710	-	-	465	95% Approximate Gamma UCL	-	-	465	95% Approximate Gamma UCL
Soil	Metals	Total	Manganese	0-10 ft	mg/kg	115	115	442	399	1,710	-	-	472	95% Approximate Gamma UCL	-	-	472	95% Approximate Gamma UCL
Soil	Metals	Total	Mercury	0-1 ft	mg/kg	107	73	0.257	0.0940	4.15	0.183	0.459	0.378	95% KM (Chebyshev) UCL	0.186	0.458	0.380	95% KM (Chebyshev) UCL
Soil	Metals	Total	Mercury	0-3 ft	mg/kg	126	90	0.219	0.0686	4.15	0.163	0.426	0.330	95% KM (Chebyshev) UCL	0.166	0.425	0.332	95% KM (Chebyshev) UCL
Soil	Metals	Total	Mercury	0-10 ft	mg/kg	143	107	0.212	0.0672	4.15	0.165	0.410	0.315	95% KM (Chebyshev) UCL	0.167	0.409	0.317	95% KM (Chebyshev) UCL
Soil	Metals	Total	Nickel	0-1 ft	mg/kg	89	89	125	26.3	1,060	-	-	227	95% Chebyshev (Mean, Sd) UCL	-	-	227	95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Nickel	0-3 ft	mg/kg	108	108	128	26.2	1,610	-	-	234	95% Chebyshev (Mean, Sd) UCL	-	-	234	95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Nickel	0-10 ft	mg/kg	125	125	133	26.3	1,760	-	-	243	95% Chebyshev (Mean, Sd) UCL	-	-	243	95% Chebyshev (Mean, Sd) UCL
Soil	Metals	Total	Selenium	0-1 ft	mg/kg	79	33	0.548	0.600	0.900	0.355	0.216	0.412	95% KM (Percentile Bootstrap) UCL	0.431	0.232	0.493	95% KM (Percentile Bootstrap) UCL
Soil	Metals	Total	Selenium	0-3 ft	mg/kg	98	48	0.555	0.600	0.900	0.387	0.225	0.431	95% KM (% Bootstrap) UCL	0.464	0.233	0.515	95% KM (% Bootstrap) UCL
Soil	Metals	Total	Selenium	0-10 ft	mg/kg	115	57	0.505	0.511	0.900	0.338	0.237	0.385	95% KM (% Bootstrap) UCL	0.413	0.234	0.459	95% KM (% Bootstrap) UCL
Soil	Metals	Total	Silver	0-1 ft	mg/kg	79	62	0.191	0.139	1.50	0.177	0.185	0.216	95% KM (BCA) UCL	0.182	0.184	0.220	95% KM (BCA) UCL
Soil	Metals	Total	Silver	0-3 ft	mg/kg	98	81	0.183	0.139	1.50	0.172	0.179	0.207	95% KM (BCA) UCL	0.176	0.178	0.212	95% KM (BCA) UCL
Soil	Metals	Total	Silver	0-10 ft	mg/kg	115	98	0.226	0.143	1.52	0.211	0.264	0.255	95% KM (BCA) UCL	0.214	0.263	0.258	95% KM (BCA) UCL
Soil	Metals	Total	Thallium	0-1 ft	mg/kg	79	48	0.105	0.0947	0.378	0.0891	0.0561	0.103	95% KM (BCA) UCL	0.102	0.0541	0.115	95% KM (BCA) UCL
Soil	Metals	Total	Thallium	0-3 ft	mg/kg	98	67	0.110	0.102	0.378	0.0977	0.0551	0.109	95% KM (BCA) UCL	0.109	0.0520	0.120	95% KM (BCA) UCL
Soil	Metals	Total	Thallium	0-10 ft	mg/kg	115	84	0.111	0.103	0.378	0.101	0.0539	0.110	95% KM (BCA) UCL	0.110	0.0513	0.119	95% KM (BCA) UCL
Soil	Metals	Total	Vanadium	0-1 ft	mg/kg	68	68	44.1	42.1	84.7	-	-	48.0	95% Student's-t UCL	-	-	48.0	95% Student's-t UCL
Soil	Metals	Total	Vanadium	0-3 ft	mg/kg	87	87	47.4	47.7	89.1	-	-	50.9	95% Student's-t UCL	-	-	50.9	95% Student's-t UCL
Soil	Metals	Total	Vanadium	0-10 ft	mg/kg	104	104	48.7	47.8	93.4	-	-	51.9	95% Student's-t UCL	-	-	51.9	95% Student's-t UCL
Soil	Metals	Total	Zinc	0-1 ft	mg/kg	89	89	165	121	1,160	-	-	188	95% H-UCL	-	-	188	95% H-UCL
Soil	Metals	Total	Zinc	0-3 ft	mg/kg	108	108	158	99.5	1,160	-	-	172	95% H-UCL	-	-	172	95% H-UCL
Soil	Metals	Total	Zinc	0-10 ft	mg/kg	125	125	161	105	1,160	-	-	175	95% H-UCL	-	-	175	95% H-UCL
Soil	Butyltins	Total	Dibutyltin	0-1 ft	ug/kg	54	20	29.8	7.90	210	11.5	32.0	19.0	95% KM (t) UCL	11.6	32.0	19.1	95% KM (t) UCL
Soil	Butyltins	Total	Dibutyltin	0-3 ft	ug/kg	71	20	29.8	7.90	210	8.96	28.3	14.7	95% KM (t) UCL	8.99	28.3	14.7	95% KM (t) UCL
Soil	Butyltins	Total	Dibutyltin	0-10 ft	ug/kg	84	20	29.8	7.90	210	7.70	26.2	12.6	95% KM (t) UCL	7.75	26.2	12.6	95% KM (t) UCL
Soil	Butyltins	Total	Monobutyltin	0-1 ft	ug/kg	54	24	13.1	4.49	108	6.12	16.9	10.4	95% KM (BCA) UCL	6.43	16.8	11.0	95% KM (BCA) UCL
Soil	Butyltins	Total	Monobutyltin	0-3 ft	ug/kg	71	24	13.1	4.49	108	4.75	14.9	8.72	95% KM (BCA) UCL	5.08	14.8	8.34	95% KM (BCA) UCL
Soil	Butyltins	Total	Monobutyltin	0-10 ft	ug/kg	84	24	13.1	4.49	108	4.12	13.8	7.36	95% KM (BCA) UCL	4.48	13.7	7.49	95% KM (BCA) UCL
Soil	Butyltins	Total	Tributyltin	0-1 ft	ug/kg	54	19	166	23.6	1,860	59.4	260	422	99% KM (Chebyshev) UCL	59.5	260	422	99% KM (Chebyshev) UCL
Soil	Butyltins	Total	Tributyltin	0-3 ft	ug/kg	71	20	158	19.5	1,860	45.8	228	219	97.5% KM (Chebyshev) UCL	45.8	228	219	97.5% KM (Chebyshev) UCL
Soil	Butyltins	Total	Tributyltin	0-10 ft	ug/kg	84	20	158	19.5	1,860	39.0	210	186	97.5% KM (Chebyshev) UCL	39.0	210	186	97.5% KM (Chebyshev) UCL
Soil	Herbicides	Total	2,4,5-T	0-1 ft	ug/kg	24	2	78.0	78.0	93.0	64.2	6.00	67.2	95% KM (t) UCL	64.2	6.00	67.2	95% KM (t) UCL

Table I-16
Statistical Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(2 of 8)

Medium Group	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	Herbicides	Total	2,4,5-T	0-3 ft	ug/kg	26	2	78.0	78.0	93.0	64.2	5.77	66.9	95% KM (t) UCL	64.2	5.77	66.9	95% KM (t) UCL
Soil	Herbicides	Total	2,4,5-T	0-10 ft	ug/kg	33	2	78.0	78.0	93.0	63.9	5.14	66.0	95% KM (t) UCL	63.9	5.14	66.0	95% KM (t) UCL
Soil	Herbicides	Total	Dichloroprop	0-1 ft	ug/kg	24	2	175	175	180	170	2.23	172	95% KM (t) UCL	170	2.23	172	95% KM (t) UCL
Soil	Herbicides	Total	Dichloroprop	0-3 ft	ug/kg	26	2	175	175	180	170	2.13	172	95% KM (t) UCL	170	2.13	172	95% KM (t) UCL
Soil	Herbicides	Total	Dichloroprop	0-10 ft	ug/kg	33	2	175	175	180	170	1.86	171	95% KM (t) UCL	170	1.86	171	95% KM (t) UCL
Soil	Herbicides	Total	MCPP	0-1 ft	ug/kg	24	2	11,800	11,800	14,000	9,740	1,000	10,300	95% KM (t) UCL	9,740	1,000	10,300	95% KM (t) UCL
Soil	Herbicides	Total	MCPP	0-3 ft	ug/kg	26	2	11,800	11,800	14,000	9,710	958	10,200	95% KM (t) UCL	9,710	958	10,200	95% KM (t) UCL
Soil	Herbicides	Total	MCPP	0-10 ft	ug/kg	33	2	11,800	11,800	14,000	9,660	835	10,000	95% KM (t) UCL	9,660	835	10,000	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDD	0-1 ft	ug/kg	52	2	0.840	0.840	0.990	0.702	0.0577	-	-	0.765	0.130	-	-
Soil	Pesticides	Total	4,4'-DDD	0-3 ft	ug/kg	60	2	0.840	0.840	0.990	0.699	0.0522	-	-	0.740	0.112	-	-
Soil	Pesticides	Total	4,4'-DDD	0-10 ft	ug/kg	67	2	0.840	0.840	0.990	0.699	0.0514	-	-	0.740	0.112	-	-
Soil	Pesticides	Total	4,4'-DDE	0-1 ft	ug/kg	52	8	2.98	0.723	17.0	0.746	2.32	1.33	95% KM (t) UCL	1.03	2.29	1.64	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDE	0-3 ft	ug/kg	60	8	2.98	0.723	17.0	0.676	2.16	1.18	95% KM (t) UCL	0.943	2.14	1.47	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDE	0-10 ft	ug/kg	67	8	2.98	0.723	17.0	0.637	2.05	1.09	95% KM (t) UCL	0.908	2.03	1.38	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDT	0-1 ft	ug/kg	52	25	27.9	13.0	140	13.9	32.1	21.5	95% KM (t) UCL	14.0	32.0	21.6	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDT	0-3 ft	ug/kg	60	29	25.2	10.0	140	12.7	30.2	19.3	95% KM (t) UCL	12.8	30.1	19.4	95% KM (t) UCL
Soil	Pesticides	Total	4,4'-DDT	0-10 ft	ug/kg	67	29	25.2	10.0	140	11.4	28.8	17.3	95% KM (t) UCL	11.5	28.7	17.5	95% KM (t) UCL
Soil	Pesticides	Total	BHC (beta)	0-1 ft	ug/kg	52	2	1.78	1.78	2.60	0.986	0.235	-	-	0.990	0.248	-	-
Soil	Pesticides	Total	BHC (beta)	0-3 ft	ug/kg	60	2	1.78	1.78	2.60	0.981	0.218	-	-	0.984	0.228	-	-
Soil	Pesticides	Total	BHC (beta)	0-10 ft	ug/kg	67	2	1.78	1.78	2.60	0.978	0.206	-	-	0.980	0.215	-	-
Soil	Pesticides	Total	BHC (delta)	0-1 ft	ug/kg	52	2	1.55	1.55	3.03	0.136	0.409	-	-	0.141	0.426	-	-
Soil	Pesticides	Total	BHC (delta)	0-3 ft	ug/kg	60	2	1.55	1.55	3.03	0.128	0.381	-	-	0.132	0.394	-	-
Soil	Pesticides	Total	BHC (delta)	0-10 ft	ug/kg	67	2	1.55	1.55	3.03	0.123	0.361	-	-	0.126	0.372	-	-
Soil	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	ug/kg	52	2	5.92	5.92	9.68	2.32	1.04	-	-	2.32	1.04	-	-
Soil	Pesticides	Total	BHC (gamma) Lindane	0-3 ft	ug/kg	60	3	4.02	2.17	9.68	0.395	1.25	-	-	0.397	1.25	-	-
Soil	Pesticides	Total	BHC (gamma) Lindane	0-10 ft	ug/kg	67	3	4.02	2.17	9.68	0.374	1.18	-	-	0.375	1.18	-	-
Soil	Pesticides	Total	Chlordane (alpha)	0-1 ft	ug/kg	39	4	1.76	1.18	4.00	0.805	0.589	1.01	95% KM (t) UCL	0.842	0.604	1.06	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (alpha)	0-3 ft	ug/kg	45	4	1.76	1.18	4.00	0.781	0.544	0.952	95% KM (t) UCL	0.817	0.556	1.01	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (alpha)	0-10 ft	ug/kg	45	4	1.76	1.18	4.00	0.781	0.544	0.952	95% KM (t) UCL	0.817	0.556	1.01	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (gamma)	0-1 ft	ug/kg	39	6	43.7	29.8	97.0	13.2	19.0	18.8	95% KM (t) UCL	13.2	19.0	18.8	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (gamma)	0-3 ft	ug/kg	45	10	27.4	10.6	97.0	6.62	19.5	11.8	95% KM (t) UCL	6.66	19.5	11.8	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (gamma)	0-10 ft	ug/kg	45	10	27.4	10.6	97.0	6.62	19.5	11.8	95% KM (t) UCL	6.66	19.5	11.8	95% KM (t) UCL
Soil	Pesticides	Total	Chlordane (technical)	0-1 ft	ug/kg	13	1	1,560	1,560	1,560	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Chlordane (technical)	0-3 ft	ug/kg	15	3	573	92.7	1,560	167	372	902	97.5% KM (Chebyshev) UCL	167	372	902	97.5% KM (Chebyshev) UCL
Soil	Pesticides	Total	Chlordane (technical)	0-10 ft	ug/kg	22	6	372	79.2	1,560	137	319	329	95% KM (BCA) UCL	137	319	293	95% KM (BCA) UCL
Soil	Pesticides	Total	Dieldrin	0-1 ft	ug/kg	52	3	1.12	0.823	2.10	0.498	0.299	0.608	95% KM (t) UCL	0.598	0.368	0.819	95% KM (t) UCL
Soil	Pesticides	Total	Dieldrin	0-3 ft	ug/kg	60	3	1.12	0.823	2.10	0.489	0.280	-	-	0.587	0.346	-	-
Soil	Pesticides	Total	Dieldrin	0-10 ft	ug/kg	67	3	1.12	0.823	2.10	0.485	0.270	-	-	0.583	0.337	-	-
Soil	Pesticides	Total	Endosulfan I	0-1 ft	ug/kg	52	2	4.32	4.32	6.45	2.28	0.595	-	-	2.28	0.595	-	-
Soil	Pesticides	Total	Endosulfan I	0-3 ft	ug/kg	60	5	2.21	2.00	6.45	0.328	0.890	0.547	95% KM (t) UCL	0.378	0.883	0.608	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan I	0-10 ft	ug/kg	67	5	2.21	2.00	6.45	0.308	0.842	0.504	95% KM (t) UCL	0.359	0.836	0.567	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan II	0-1 ft	ug/kg	52	4	3.01	1.48	8.84	0.502	1.22	0.844	95% KM (t) UCL	0.755	1.24	1.26	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan II	0-3 ft	ug/kg	60	4	3.01	1.48	8.84	0.463	1.14	0.756	95% KM (t) UCL	0.702	1.16	1.17	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan II	0-10 ft	ug/kg	67	4	3.01	1.48	8.84	0.442	1.08	0.706	95% KM (t) UCL	0.679	1.11	1.13	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan Sulfate	0-1 ft	ug/kg	52	7	2.11	1.70	5.97	0.842	0.887	1.08	95% KM (t) UCL	0.992	0.909	1.30	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan Sulfate	0-3 ft	ug/kg	60	7	2.11	1.70	5.97	0.800	0.825	1.01	95% KM (t) UCL	0.914	0.842	1.16	95% KM (t) UCL
Soil	Pesticides	Total	Endosulfan Sulfate	0-10 ft	ug/kg	67	7	2.11	1.70	5.97	0.781	0.784	0.967	95% KM (t) UCL	0.897	0.804	1.13	95% KM (t) UCL
Soil	Pesticides	Total	Endrin Aldehyde	0-1 ft	ug/kg	52	4	8.36	7.70	16.0	2.52	2.28	3.14	95% KM (t) UCL	2.52	2.28	3.14	95% KM (t) UCL
Soil	Pesticides	Total	Endrin Aldehyde	0-3 ft	ug/kg	60	5	7.06	4.40	16.0	2.34	2.16	2.86	95% KM (t) UCL	2.34	2.16	2.87	95% KM (t) UCL
Soil	Pesticides	Total	Endrin Aldehyde	0-10 ft	ug/kg	67	5	7.06	4.40	16.0	2.29	2.04	2.76	95% KM (t) UCL	2.30	2.04	2.76	95% KM (t) UCL
Soil	Pesticides	Total	Endrin Ketone	0-1 ft	ug/kg	51	4	5.25	3.07	13.0	2.16	1.61	2.61	95% KM (t) UCL	2.16	1.61	2.61	95% KM (t) UCL
Soil	Pesticides	Total	Endrin Ketone	0-3 ft	ug/kg	59	4	5.25	3.07	13.0	2.12	1.49	2.50	95% KM (t) UCL	2.12	1.49	2.50	95% KM (t) UCL
Soil	Pesticides	Total	Endrin Ketone	0-10 ft	ug/kg	66	4	5.25	3.07	13.0	2.09	1.41	2.43	95% KM (t) UCL	2.09	1.41	2.43	95% KM (t) UCL
Soil	Pesticides	Total	Endrin	0-1 ft	ug/kg	52	3	11.7	15.0	17.0	3.50	2.51	4.21	95% KM (t) UCL	3.50	2.51	4.21	95% KM (t) UCL
Soil	Pesticides	Total	Endrin	0-3 ft	ug/kg	60	4	9.28	9.00	17.0	2.58	2.50	3.21	95% KM (t) UCL	2.58	2.50	3.21	95% KM (t) UCL
Soil	Pesticides	Total	Endrin	0-10 ft	ug/kg	67	4	9.28	9.00	17.0	2.53	2.37	3.09	95% KM (t) UCL	2.53	2.37	3.09	95% KM (t) UCL
Soil	Pesticides	Total	Heptachlor Epoxide	0-1 ft	ug/kg	52	1	14.4	14.4	14.4	-	-	-	-	-	-	-	-
Soil	Pesticides	Total	Heptachlor Epoxide	0-3 ft	ug/kg	60	2	7.52	7.52	14.4	0.863	1.76	-	-	0.863	1.76	-	-
Soil	Pesticides	Total	Heptachlor Epoxide	0-10 ft	ug/kg	67	2	7.52	7.52	14.4	0.839	1.67	-	-	0.839	1.67	-	-
Soil	Pesticides	Total	Heptachlor	0-1 ft	ug/kg	52	5	1.30	0.380	2.90	0.297	0.526	0.437	95% KM (t) UCL	0.357	0.531	0.529	95% KM (t) UCL
Soil	Pesticides	Total	Heptachlor	0-3 ft	ug/kg	60	6	1.59	1.60	3.07	0.330	0.610	0.477	95% KM (t) UCL	0.392	0.612	0.567	95% KM (t) UCL
Soil	Pesticides	Total	Heptachlor	0-10 ft	ug/kg	67	6	1.59	1.60	3.07	0.314	0.578	0.445	95% KM (t) UCL	0.376	0.579	0.538	95% KM (t) UCL
Soil	Pesticides	Total	Methoxychlor	0-1 ft	ug/kg	52	2	1.10	1.10	1.20	1.02	0.0533	-	-	1.03	0.0700	-	-
Soil	Pesticides	Total	Methoxychlor	0-3 ft	ug/kg	60	2	1.10	1.10	1.20	1.01	0.0447	-	-	1.02	0.0553	-	-
Soil	Pesticides	Total	Methoxychlor	0-10 ft	ug/kg	67	2	1.10	1.10	1.20	1.01	0.0447	-	-	1.02	0.0553	-	-

Table I-16
Statistical Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
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Medium Group	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	PCB Aroclors	Total	Aroclor 1248	0-1 ft	ug/kg	97	2	515	515	968	70.8	91.6	-	-	70.8	91.6	-	-
Soil	PCB Aroclors	Total	Aroclor 1248	0-3 ft	ug/kg	114	2	515	515	968	69.4	84.5	-	-	69.4	84.5	-	-
Soil	PCB Aroclors	Total	Aroclor 1248	0-10 ft	ug/kg	128	2	515	515	968	68.6	79.8	-	-	68.6	79.8	-	-
Soil	PCB Aroclors	Total	Aroclor 1254	0-1 ft	ug/kg	97	15	338	49.0	1,700	57.2	242	99.4	95% KM (t) UCL	57.7	241	99.8	95% KM (t) UCL
Soil	PCB Aroclors	Total	Aroclor 1254	0-3 ft	ug/kg	114	21	262	48.4	1,700	53.1	224	147	95% KM (Chebyshev) UCL	53.6	224	147	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Aroclor 1254	0-10 ft	ug/kg	128	26	238	48.7	1,700	53.0	215	138	95% KM (Chebyshev) UCL	53.4	215	138	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Aroclor 1260	0-1 ft	ug/kg	97	82	90.9	34.0	690	78.3	138	140	95% KM (Chebyshev) UCL	78.6	138	140	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Aroclor 1260	0-3 ft	ug/kg	114	93	83.8	30.6	690	69.6	130	123	95% KM (Chebyshev) UCL	70.0	130	123	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Aroclor 1260	0-10 ft	ug/kg	128	105	83.2	33.0	690	69.4	128	119	95% KM (Chebyshev) UCL	69.8	128	119	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	ug/kg	97	82	173	48.1	2,140	149	349	304	95% KM (Chebyshev) UCL	155	347	310	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-3 ft	ug/kg	114	93	168	43.9	2,140	133	326	325	97.5% KM (Chebyshev) UCL	140	324	273	95% KM (Chebyshev) UCL
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-10 ft	ug/kg	128	105	164	44.9	2,140	132	313	254	95% KM (Chebyshev) UCL	140	312	260	95% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	mg/kg	83	75	233	53.4	5,100	211	650	524	95% KM (Chebyshev) UCL	212	650	525	95% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-3 ft	mg/kg	102	90	233	49.1	5,100	206	614	473	95% KM (Chebyshev) UCL	207	613	474	95% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-10 ft	mg/kg	119	101	473	54.7	9,740	402	1,370	1,190	97.5% KM (Chebyshev) UCL	404	1,370	1,190	97.5% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	mg/kg	83	77	1,040	321	23,900	964	3,050	2,430	95% KM (Chebyshev) UCL	965	3,050	2,430	95% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Residual Range Organics	0-3 ft	mg/kg	102	93	908	276	23,900	830	2,770	2,030	95% KM (Chebyshev) UCL	831	2,770	2,030	95% KM (Chebyshev) UCL
Soil	NWTPH-Dx	Total	Residual Range Organics	0-10 ft	mg/kg	119	106	1,990	311	41,900	1,770	6,390	5,450	97.5% KM (Chebyshev) UCL	1,780	6,390	5,450	97.5% KM (Chebyshev) UCL
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	mg/kg	49	11	99.0	3.20	586	23.7	94.0	164	99% KM (Chebyshev) UCL	24.1	93.9	164	99% KM (Chebyshev) UCL
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-3 ft	mg/kg	59	14	370	3.34	3,960	89.3	516	782	99% KM (Chebyshev) UCL	89.6	516	783	99% KM (Chebyshev) UCL
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-10 ft	mg/kg	69	16	324	3.24	3,960	76.6	478	448	97.5% KM (Chebyshev) UCL	77.0	478	448	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzoic Acid	0-1 ft	ug/kg	54	19	157	88.5	980	89.8	163	133	95% KM (t) UCL	102	167	148	95% KM (t) UCL
Soil	SVOCs	Total	Benzoic Acid	0-3 ft	ug/kg	64	21	165	100	980	85.1	154	122	95% KM (t) UCL	98.1	156	136	95% KM (t) UCL
Soil	SVOCs	Total	Benzoic Acid	0-10 ft	ug/kg	74	22	171	104	980	77.9	146	110	95% KM (t) UCL	95.3	148	129	95% KM (t) UCL
Soil	SVOCs	Total	Benzyl Alcohol	0-1 ft	ug/kg	58	2	10.9	10.9	14.0	8.10	1.32	-	-	8.25	1.59	-	-
Soil	SVOCs	Total	Benzyl Alcohol	0-3 ft	ug/kg	68	2	10.9	10.9	14.0	8.02	1.13	-	-	8.09	1.29	-	-
Soil	SVOCs	Total	Benzyl Alcohol	0-10 ft	ug/kg	78	2	10.9	10.9	14.0	8.00	1.08	-	-	8.06	1.21	-	-
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	ug/kg	58	45	10,000	895	260,000	7,820	34,500	36,400	97.5% KM (Chebyshev) UCL	7,840	34,500	36,400	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-3 ft	ug/kg	69	55	9,040	825	260,000	7,220	31,800	31,300	97.5% KM (Chebyshev) UCL	7,230	31,800	31,400	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-10 ft	ug/kg	79	65	7,790	825	260,000	6,420	29,800	27,500	97.5% KM (Chebyshev) UCL	6,430	29,800	27,500	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	ug/kg	57	8	43.8	30.8	124	11.3	22.2	17.2	95% KM (t) UCL	14.2	24.4	21.7	95% KM (t) UCL
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-3 ft	ug/kg	67	9	42.5	31.7	124	10.4	20.5	15.4	95% KM (t) UCL	12.6	22.7	18.7	95% KM (t) UCL
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-10 ft	ug/kg	77	11	51.8	35.2	152	12.2	25.9	26.1	95% KM (Percentile Bootstrap) UCL	15.1	28.5	28.1	95% KM (Percentile Bootstrap) UCL
Soil	SVOCs	Total	Carbazole	0-1 ft	ug/kg	58	39	259	91.0	2,650	178	399	272	95% KM (BCA) UCL	182	398	284	95% KM (BCA) UCL
Soil	SVOCs	Total	Carbazole	0-3 ft	ug/kg	68	45	301	78.0	2,840	202	496	312	95% KM (BCA) UCL	205	495	316	95% KM (BCA) UCL
Soil	SVOCs	Total	Carbazole	0-10 ft	ug/kg	78	50	341	129	2,840	221	503	322	95% KM (BCA) UCL	224	502	326	95% KM (BCA) UCL
Soil	SVOCs	Total	Dibenzofuran	0-1 ft	ug/kg	58	30	84.6	40.2	810	48.2	119	77.1	95% KM (BCA) UCL	50.9	120	79.0	95% KM (BCA) UCL
Soil	SVOCs	Total	Dibenzofuran	0-3 ft	ug/kg	69	37	98.8	42.4	810	56.6	130	83.4	95% KM (BCA) UCL	59.2	131	88.6	95% KM (BCA) UCL
Soil	SVOCs	Total	Dibenzofuran	0-10 ft	ug/kg	79	42	99.2	43.7	810	56.2	124	81.3	95% KM (BCA) UCL	59.0	125	84.7	95% KM (BCA) UCL
Soil	SVOCs	Total	Diethyl Phthalate	0-1 ft	ug/kg	57	4	44.0	47.0	73.4	12.2	12.6	16.0	95% KM (t) UCL	13.2	14.2	18.0	95% KM (t) UCL
Soil	SVOCs	Total	Diethyl Phthalate	0-3 ft	ug/kg	67	6	39.5	37.9	73.4	12.5	12.0	15.6	95% KM (t) UCL	13.2	13.1	16.9	95% KM (t) UCL
Soil	SVOCs	Total	Diethyl Phthalate	0-10 ft	ug/kg	77	7	38.2	31.8	73.4	12.3	11.4	14.9	95% KM (t) UCL	13.3	12.8	16.7	95% KM (t) UCL
Soil	SVOCs	Total	Dimethyl Phthalate	0-1 ft	ug/kg	57	3	34.3	32.0	41.0	30.3	1.78	30.9	95% KM (t) UCL	30.4	1.96	31.1	95% KM (t) UCL
Soil	SVOCs	Total	Dimethyl Phthalate	0-3 ft	ug/kg	67	3	34.3	32.0	41.0	30.3	1.59	-	-	30.3	1.76	-	-
Soil	SVOCs	Total	Dimethyl Phthalate	0-10 ft	ug/kg	77	3	34.3	32.0	41.0	30.2	1.45	-	-	30.3	1.70	-	-
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	ug/kg	57	14	218	86.4	1,800	68.3	238	124	95% KM (t) UCL	72.5	242	130	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-3 ft	ug/kg	67	18	174	61.0	1,800	58.0	221	105	95% KM (t) UCL	62.0	224	110	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-10 ft	ug/kg	77	18	174	61.0	1,800	51.2	207	91.9	95% KM (t) UCL	56.3	210	98.5	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	ug/kg	57	5	49.4	31.0	127	15.8	18.6	21.0	95% KM (t) UCL	17.4	21.4	24.4	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-3 ft	ug/kg	67	6	45.0	27.0	127	15.2	16.9	19.4	95% KM (t) UCL	16.5	19.4	22.0	95% KM (t) UCL
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-10 ft	ug/kg	77	7	51.1	31.0	127	15.9	18.1	20.0	95% KM (t) UCL	18.0	21.8	24.0	95% KM (t) UCL
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	ug/kg	58	2	33.2	33.2	64.0	3.96	9.49	-	-	4.38	10.7	-	-
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-3 ft	ug/kg	68	2	33.2	33.2	64.0	3.67	8.53	-	-	4.00	9.61	-	-
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-10 ft	ug/kg	78	2	33.2	33.2	64.0	3.47	7.82	-	-	3.89	9.28	-	-
Soil	SVOCs	Total	Pentachlorophenol	0-1 ft	ug/kg	58	4	79.0	52.0	201	18.7	31.5	28.6	95% KM (t) UCL	20.4	33.2	31.8	95% KM (t) UCL
Soil	SVOCs	Total	Pentachlorophenol	0-3 ft	ug/kg	68	4	79.0	52.0	201	17.0	28.2	24.8	95% KM (t) UCL	18.2	29.5	27.0	95% KM (t) UCL
Soil	SVOCs	Total	Pentachlorophenol	0-10 ft	ug/kg	78	4	79.0	52.0	201	15.9	25.8	22.4	95% KM (t) UCL	17.2	27.1	24.7	95% KM (t) UCL
Soil	SVOCs	Total	Phenol	0-1 ft	ug/kg	58	2	2.85	2.85	3.70	2.08	0.371	-	-	2.85	0.850	-	-
Soil	SVOCs	Total	Phenol	0-3 ft	ug/kg	68	5	9.22	3.00	35.0	2.81	4.71	35.0	95% KM (BCA) UCL	3.67	5.33	-	-
Soil	SVOCs	Total	Phenol	0-10 ft	ug/kg	78	5	9.22	3.00	35.0	2.68	4.30	4.98	95% KM (BCA) UCL	3.60	5.13	5.69	95% KM (BCA) UCL
Soil	SVOCs	Total	2-Methylnaphthalene	0-1 ft	ug/kg	58	24	126	30.4	1,530	55.3	214	180	95% KM (Chebyshev) UCL	55.9	214	181	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	2-Methylnaphthalene	0-3 ft	ug/kg	69	27	118	31.8	1,530	49.1	197	155	95% KM (Chebyshev) UCL	49.6	197	155	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	2-Methylnaphthalene	0-10 ft	ug/kg	79	31	106	29.0	1,530	44.0	185	136	95% KM (Chebyshev) UCL	44.5	185	137	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Acenaphthene	0-1 ft	ug/kg	58	44	205	59.5	2,600	160	380	380	95% KM (Chebyshev) UCL	160	380	380	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Acenaphthene	0-3 ft	ug/kg	73	56	331	83.5	3,200	257	598	564	95% KM (Chebyshev) UCL	257	598	565	95% KM (Chebyshev) UCL

Table I-16
Statistical Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(4 of 8)

Medium Group	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	SVOCs	Total	Acenaphthene	0-10 ft	ug/kg	87	66	374	112	3,200	286	634	584	95% KM (Chebyshev) UCL	288	634	586	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Acenaphthylene	0-1 ft	ug/kg	58	21	25.1	15.0	87.7	12.8	20.5	18.0	95% KM (t) UCL	13.6	21.4	19.2	95% KM (t) UCL
Soil	SVOCs	Total	Acenaphthylene	0-3 ft	ug/kg	73	29	37.0	15.0	295	18.0	39.8	26.2	95% KM (t) UCL	18.9	40.4	27.3	95% KM (t) UCL
Soil	SVOCs	Total	Acenaphthylene	0-10 ft	ug/kg	87	35	37.6	22.0	295	18.2	37.7	25.2	95% KM (t) UCL	19.1	38.1	26.4	95% KM (t) UCL
Soil	SVOCs	Total	Anthracene	0-1 ft	ug/kg	58	52	291	85.2	2,700	263	471	535	95% KM (Chebyshev) UCL	263	471	535	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Anthracene	0-3 ft	ug/kg	73	64	500	99.5	8,440	440	1,090	1,250	97.5% KM (Chebyshev) UCL	440	1,090	1,250	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Anthracene	0-10 ft	ug/kg	87	75	740	150	8,440	640	1,450	1,320	95% KM (Chebyshev) UCL	640	1,450	1,320	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluorene	0-1 ft	ug/kg	58	39	131	47.0	1,200	92.7	186	139	95% KM (BCA) UCL	94.8	186	141	95% KM (BCA) UCL
Soil	SVOCs	Total	Fluorene	0-3 ft	ug/kg	73	50	184	74.0	1,610	130	266	191	95% KM (BCA) UCL	132	265	193	95% KM (BCA) UCL
Soil	SVOCs	Total	Fluorene	0-10 ft	ug/kg	87	60	225	96.8	1,610	158	301	211	95% KM (BCA) UCL	160	300	217	95% KM (BCA) UCL
Soil	SVOCs	Total	Naphthalene	0-1 ft	ug/kg	58	30	102	33.9	823	56.9	153	185	97.5% KM (Chebyshev) UCL	57.6	153	186	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Naphthalene	0-3 ft	ug/kg	73	41	93.6	41.0	823	56.1	141	161	97.5% KM (Chebyshev) UCL	56.7	141	162	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Naphthalene	0-10 ft	ug/kg	87	48	122	45.0	1,710	70.7	219	219	97.5% KM (Chebyshev) UCL	71.3	219	220	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Phenanthrene	0-1 ft	ug/kg	58	57	1,110	300	12,000	1,090	1,910	2,200	95% KM (Chebyshev) UCL	1,090	1,910	2,200	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Phenanthrene	0-3 ft	ug/kg	73	70	1,610	322	21,900	1,550	3,150	3,870	97.5% KM (Chebyshev) UCL	1,550	3,150	3,870	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Phenanthrene	0-10 ft	ug/kg	87	81	1,890	360	21,900	1,760	3,410	4,060	97.5% KM (Chebyshev) UCL	1,780	3,410	4,080	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	58	57	2,403	650	18,674	1,740	2,944	3,440	95% KM (Chebyshev) UCL	1,753	2,956	3,460	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	ug/kg	73	70	3,079	826	34,767	2,496	5,046	5,089	95% KM (Chebyshev) UCL	2,507	5,049	5,102	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)anthracene	0-1 ft	ug/kg	58	54	1,900	428	32,000	1,770	4,520	4,390	95% KM (Chebyshev) UCL	1,780	4,520	4,390	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)anthracene	0-3 ft	ug/kg	73	66	2,730	530	32,000	2,470	5,430	5,260	95% KM (Chebyshev) UCL	2,470	5,430	5,260	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)anthracene	0-10 ft	ug/kg	87	78	3,670	825	32,000	3,290	6,450	6,320	95% KM (Chebyshev) UCL	3,290	6,450	6,320	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)pyrene	0-1 ft	ug/kg	58	55	1,980	435	33,000	1,880	4,660	4,570	95% KM (Chebyshev) UCL	1,880	4,660	4,570	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)pyrene	0-3 ft	ug/kg	73	67	2,960	450	34,000	2,720	6,020	7,150	97.5% KM (Chebyshev) UCL	2,720	6,020	7,150	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(a)pyrene	0-10 ft	ug/kg	87	79	3,600	820	34,000	3,270	6,160	7,420	97.5% KM (Chebyshev) UCL	3,270	6,160	7,420	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	ug/kg	37	36	3,380	835	65,000	3,280	10,500	20,700	99% KM (Chebyshev) UCL	3,280	10,500	20,700	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-3 ft	ug/kg	46	44	3,600	835	65,000	3,450	9,690	9,750	95% KM (Chebyshev) UCL	3,450	9,690	9,750	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-10 ft	ug/kg	46	44	3,600	835	65,000	3,450	9,690	9,750	95% KM (Chebyshev) UCL	3,450	9,690	9,750	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	ug/kg	58	50	1,130	280	18,000	976	2,520	2,440	95% KM (Chebyshev) UCL	977	2,520	2,440	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-3 ft	ug/kg	73	63	1,590	290	18,000	1,380	3,140	3,690	97.5% KM (Chebyshev) UCL	1,380	3,140	3,690	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-10 ft	ug/kg	87	75	1,910	480	18,000	1,650	3,170	3,140	95% KM (Chebyshev) UCL	1,650	3,170	3,140	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	ug/kg	37	36	2,480	350	65,000	2,410	10,500	19,800	99% KM (Chebyshev) UCL	2,410	10,500	19,800	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-3 ft	ug/kg	46	44	2,330	350	65,000	2,230	9,420	11,000	97.5% KM (Chebyshev) UCL	2,230	9,420	11,000	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-10 ft	ug/kg	46	44	2,330	350	65,000	2,230	9,420	11,000	97.5% KM (Chebyshev) UCL	2,230	9,420	11,000	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-1 ft	ug/kg	21	20	1,980	155	14,700	1,880	3,950	10,700	99% KM (Chebyshev) UCL	1,880	3,950	10,700	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-3 ft	ug/kg	27	25	3,950	212	31,300	3,650	7,120	17,600	99% KM (Chebyshev) UCL	3,650	7,120	17,600	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-10 ft	ug/kg	41	37	5,270	1,080	31,300	4,760	6,840	9,480	95% KM (Chebyshev) UCL	4,760	6,840	9,480	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Chrysene	0-1 ft	ug/kg	58	56	1,980	520	32,000	1,920	4,500	4,510	95% KM (Chebyshev) UCL	1,920	4,500	4,510	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Chrysene	0-3 ft	ug/kg	73	69	2,880	620	35,300	2,730	5,960	5,790	95% KM (Chebyshev) UCL	2,730	5,960	5,790	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Chrysene	0-10 ft	ug/kg	87	81	3,600	870	35,300	3,350	6,370	6,340	95% KM (Chebyshev) UCL	3,350	6,370	6,340	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	ug/kg	58	42	494	140	9,900	363	1,300	1,120	95% KM (Chebyshev) UCL	364	1,300	1,120	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-3 ft	ug/kg	73	54	556	155	9,900	416	1,210	1,040	95% KM (Chebyshev) UCL	416	1,210	1,040	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-10 ft	ug/kg	87	62	554	230	9,900	398	1,120	924	95% KM (Chebyshev) UCL	399	1,110	924	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluoranthene	0-1 ft	ug/kg	58	55	3,540	795	54,000	3,360	8,060	8,020	95% KM (Chebyshev) UCL	3,360	8,060	8,020	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluoranthene	0-3 ft	ug/kg	73	68	5,000	816	54,000	4,660	9,770	11,900	97.5% KM (Chebyshev) UCL	4,660	9,770	11,900	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Fluoranthene	0-10 ft	ug/kg	87	80	6,340	1,250	54,000	5,830	10,400	12,800	97.5% KM (Chebyshev) UCL	5,830	10,400	12,800	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	ug/kg	58	52	1,210	285	19,000	1,090	2,730	2,670	95% KM (Chebyshev) UCL	1,090	2,730	2,670	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-3 ft	ug/kg	73	65	1,800	300	20,000	1,600	3,640	3,480	95% KM (Chebyshev) UCL	1,610	3,640	3,480	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-10 ft	ug/kg	87	77	2,190	510	20,000	1,940	3,710	3,680	95% KM (Chebyshev) UCL	1,940	3,710	3,680	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Pyrene	0-1 ft	ug/kg	58	56	3,300	810	40,000	3,190	6,750	7,090	95% KM (Chebyshev) UCL	3,190	6,750	7,090	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Pyrene	0-3 ft	ug/kg	73	70	5,150	897	67,100	4,940	10,600	10,400	95% KM (Chebyshev) UCL	4,940	10,600	10,400	95% KM (Chebyshev) UCL
Soil	SVOCs	Total	Pyrene	0-10 ft	ug/kg	87	82	6,760	1,260	67,100	6,370	11,500	14,100	97.5% KM (Chebyshev) UCL	6,370	11,500	14,100	97.5% KM (Chebyshev) UCL
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	58	56	22,488	4,976	367,900	18,198	50,007	47,078	95% KM (Chebyshev) UCL	18,219	50,008	84,145	99% KM (Chebyshev) UCL
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	ug/kg	73	70	28,142	5,626	367,900	24,503	55,546	53,046	95% KM (Chebyshev) UCL	24,520	55,546	53,062	95% KM (Chebyshev) UCL
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	ug/kg	55	2	0.535	0.535	0.580	0.493	0.0167	-	-	0.505	0.0335	-	-
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-3 ft	ug/kg	66	2	0.535	0.535	0.580	0.492	0.0144	-	-	0.501	0.0298	-	-
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-10 ft	ug/kg	76	3	0.389	0.490	0.580	0.115	0.0880	-	-	0.153	0.147	-	-
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	ug/kg	55	18	903	0.240	14300	296	1,920	2,940	99% KM (Chebyshev) UCL	296	1,920	2,940	99% KM (Chebyshev) UCL
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-3 ft	ug/kg	66	24	1,770	0.240	14,300	645	2,830	2,860	97.5% KM (Chebyshev) UCL	645	2,830	2,860	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-10 ft	ug/kg	76	25	1,700	0.240	14,300	560	2,640	2,490	97.5% KM (Chebyshev) UCL	560	2,640	2,490	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	ug/kg	55	8	779	0.113	5,410	113	725	1,150	99% KM (Chebyshev) UCL	113	725	1,150	99% KM (Chebyshev) UCL
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-3 ft	ug/kg	66	11	1,180	1.83	6,500	196	1,020	417	95% KM (t) UCL	196	1,020	417	95% KM (t) UCL
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-10 ft	ug/kg	76	11	1,180	1.83	6,500	170	958	362	95% KM (t) UCL	170	958	362	95% KM (t) UCL
Soil	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	ug/kg	55	1	0.160	0.160	0.160	-	-	-	-	-	-	-	-
Soil	VOCs	Total	1,4-Dichlorobenzene	0-3 ft	ug/kg	66	2	0.150	0.150	0.160	0.141	0.00348	-	-	0.150	0.0100	-	-
Soil	VOCs	Total	1,4-Dichlorobenzene	0-10 ft	ug/kg	76	2	0.150	0.150	0.160	0.141	0.00333	-	-	0.150	0.0100	-	-

Table I-16
Statistical Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
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Medium Group	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	VOCs	Total	2-Butanone (MEK)	0-1 ft	ug/kg	55	16	19.6	13.5	50.0	10.7	9.88	13.2	95% KM (t) UCL	11.2	9.82	13.8	95% KM (t) UCL
Soil	VOCs	Total	2-Butanone (MEK)	0-3 ft	ug/kg	66	19	17.0	13.0	50.0	8.01	10.1	10.4	95% KM (t) UCL	8.71	9.98	11.2	95% KM (t) UCL
Soil	VOCs	Total	2-Butanone (MEK)	0-10 ft	ug/kg	76	19	17.0	13.0	50.0	6.96	9.55	9.00	95% KM (t) UCL	7.38	9.56	9.47	95% KM (t) UCL
Soil	VOCs	Total	2-Hexanone	0-1 ft	ug/kg	55	3	6.33	5.50	8.80	4.88	0.770	5.17	95% KM (t) UCL	5.14	1.10	5.78	95% KM (t) UCL
Soil	VOCs	Total	2-Hexanone	0-3 ft	ug/kg	66	3	6.33	5.50	8.80	4.83	0.665	-	-	5.05	1.00	-	-
Soil	VOCs	Total	2-Hexanone	0-10 ft	ug/kg	76	3	6.33	5.50	8.80	4.80	0.594	-	-	4.91	0.802	-	-
Soil	VOCs	Total	4-Isopropyltoluene	0-1 ft	ug/kg	55	14	1.63	0.415	12.0	0.596	1.71	1.02	95% KM (t) UCL	0.866	1.88	1.40	95% KM (t) UCL
Soil	VOCs	Total	4-Isopropyltoluene	0-3 ft	ug/kg	66	17	10.9	0.900	161	3.14	20.3	14.7	95% KM (Chebyshev) UCL	3.48	20.4	15.2	95% KM (Chebyshev) UCL
Soil	VOCs	Total	4-Isopropyltoluene	0-10 ft	ug/kg	76	18	10.4	0.690	161	2.71	18.8	12.7	95% KM (Chebyshev) UCL	2.98	19.0	13.1	95% KM (Chebyshev) UCL
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	ug/kg	55	9	0.668	0.670	1.20	0.483	0.216	0.566	95% KM (t) UCL	0.668	0.233	0.806	95% KM (t) UCL
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-3 ft	ug/kg	66	9	0.668	0.670	1.20	0.449	0.201	0.518	95% KM (t) UCL	0.668	0.233	0.805	95% KM (t) UCL
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-10 ft	ug/kg	76	9	0.668	0.670	1.20	0.443	0.192	0.507	95% KM (t) UCL	0.668	0.233	0.805	95% KM (t) UCL
Soil	VOCs	Total	Acetone	0-1 ft	ug/kg	55	18	190	155	540	76.0	115	129	95% KM (Percentile Bootstrap) UCL	76.7	116	131	95% KM (Percentile Bootstrap) UCL
Soil	VOCs	Total	Acetone	0-3 ft	ug/kg	66	23	154	150	540	66.8	108	90.8	95% KM (t) UCL	67.5	108	91.8	95% KM (t) UCL
Soil	VOCs	Total	Acetone	0-10 ft	ug/kg	76	23	154	150	540	57.9	102	78.9	95% KM (t) UCL	58.5	102	79.6	95% KM (t) UCL
Soil	VOCs	Total	Benzene	0-1 ft	ug/kg	55	15	0.474	0.450	1.20	0.374	0.267	0.470	95% KM (t) UCL	0.432	0.269	0.540	95% KM (t) UCL
Soil	VOCs	Total	Benzene	0-3 ft	ug/kg	66	17	0.484	0.470	1.20	0.336	0.252	0.412	95% KM (t) UCL	0.427	0.255	0.520	95% KM (t) UCL
Soil	VOCs	Total	Benzene	0-10 ft	ug/kg	76	19	0.481	0.470	1.20	0.311	0.235	0.374	95% KM (t) UCL	0.393	0.231	0.468	95% KM (t) UCL
Soil	VOCs	Total	Bromomethane	0-1 ft	ug/kg	55	7	1.81	0.570	5.00	0.814	1.09	1.29	95% KM (BCA) UCL	1.06	1.35	1.78	95% KM (BCA) UCL
Soil	VOCs	Total	Bromomethane	0-3 ft	ug/kg	66	8	1.69	0.705	5.00	0.737	0.946	1.01	95% KM (t) UCL	0.910	1.14	1.32	95% KM (t) UCL
Soil	VOCs	Total	Bromomethane	0-10 ft	ug/kg	76	8	1.69	0.705	5.00	0.684	0.848	0.902	95% KM (t) UCL	0.781	0.980	1.08	95% KM (t) UCL
Soil	VOCs	Total	Carbon Disulfide	0-1 ft	ug/kg	55	19	1.05	0.700	6.90	0.709	1.07	1.04	95% KM (% Bootstrap) UCL	0.778	1.05	1.10	95% KM (% Bootstrap) UCL
Soil	VOCs	Total	Carbon Disulfide	0-3 ft	ug/kg	66	24	1.07	0.690	6.90	0.722	1.03	1.00	95% KM (% Bootstrap) UCL	0.795	1.01	1.08	95% KM (% Bootstrap) UCL
Soil	VOCs	Total	Carbon Disulfide	0-10 ft	ug/kg	76	24	1.07	0.690	6.90	0.611	0.957	0.858	95% KM (% Bootstrap) UCL	0.684	0.942	0.921	95% KM (% Bootstrap) UCL
Soil	VOCs	Total	Chloroform	0-1 ft	ug/kg	55	3	6.52	0.290	19.0	0.629	2.60	5.06	99% KM (Chebyshev) UCL	0.642	2.60	5.07	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Chloroform	0-3 ft	ug/kg	66	3	6.52	0.290	19.0	0.568	2.38	-	-	0.582	2.38	-	-
Soil	VOCs	Total	Chloroform	0-10 ft	ug/kg	76	3	6.52	0.290	19.0	0.525	2.21	-	-	0.539	2.21	-	-
Soil	VOCs	Total	Chloromethane	0-1 ft	ug/kg	55	2	0.240	0.240	0.250	0.231	0.00417	-	-	0.240	0.0100	-	-
Soil	VOCs	Total	Chloromethane	0-3 ft	ug/kg	66	2	0.240	0.240	0.250	0.231	0.00365	-	-	0.240	0.0100	-	-
Soil	VOCs	Total	Chloromethane	0-10 ft	ug/kg	76	2	0.240	0.240	0.250	0.231	0.00329	-	-	0.240	0.0100	-	-
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	ug/kg	55	1	12.0	12.0	12.0	-	-	-	-	-	-	-	-
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-3 ft	ug/kg	66	2	66.0	66.0	120	13.7	13.6	-	-	13.7	13.6	-	-
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-10 ft	ug/kg	76	4	48.8	35.2	120	7.40	14.8	10.8	95% KM (t) UCL	7.40	14.8	10.8	95% KM (t) UCL
Soil	VOCs	Total	Dichlorodifluoromethane	0-1 ft	ug/kg	55	4	27.7	8.35	94.0	2.42	13.1	5.98	95% KM (t) UCL	2.48	13.1	6.03	95% KM (t) UCL
Soil	VOCs	Total	Dichlorodifluoromethane	0-3 ft	ug/kg	66	4	27.7	8.35	94.0	2.07	12.0	5.04	95% KM (t) UCL	2.11	12.0	5.08	95% KM (t) UCL
Soil	VOCs	Total	Dichlorodifluoromethane	0-10 ft	ug/kg	76	6	18.5	0.478	94.0	1.65	11.2	4.08	95% KM (t) UCL	1.76	11.2	4.19	95% KM (t) UCL
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	ug/kg	55	13	36.7	0.430	460	9.25	62.5	98.2	99% KM (Chebyshev) UCL	9.50	63.1	100	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-3 ft	ug/kg	66	18	26.6	0.410	460	7.84	57.4	40.3	95% KM (Chebyshev) UCL	8.03	57.9	41.0	95% KM (Chebyshev) UCL
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-10 ft	ug/kg	76	18	26.6	0.410	460	6.78	53.4	34.8	95% KM (Chebyshev) UCL	6.96	53.8	35.4	95% KM (Chebyshev) UCL
Soil	VOCs	Total	Ethylbenzene	0-1 ft	ug/kg	55	9	300	0.110	2,700	49.2	361	562	99% KM (Chebyshev) UCL	49.2	361	563	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Ethylbenzene	0-3 ft	ug/kg	66	11	249	0.110	2,700	41.6	330	308	97.5% KM (Chebyshev) UCL	42.3	332	312	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	Ethylbenzene	0-10 ft	ug/kg	76	12	228	0.145	2,700	36.1	308	266	97.5% KM (Chebyshev) UCL	36.7	310	270	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	m,p-Xylenes	0-1 ft	ug/kg	55	9	1,090	0.250	9,800	178	1,310	2,040	99% KM (Chebyshev) UCL	178	1,310	2,040	99% KM (Chebyshev) UCL
Soil	VOCs	Total	m,p-Xylenes	0-3 ft	ug/kg	66	12	1,440	0.305	9,800	261	1,490	1,460	97.5% KM (Chebyshev) UCL	262	1,490	1,460	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	m,p-Xylenes	0-10 ft	ug/kg	76	13	1,330	0.360	9,800	227	1,390	1,260	97.5% KM (Chebyshev) UCL	227	1,390	1,260	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	Naphthalene	0-1 ft	ug/kg	55	11	856	0.550	8,360	172	1,120	1,750	99% KM (Chebyshev) UCL	172	1,120	1,750	99% KM (Chebyshev) UCL
Soil	VOCs	Total	Naphthalene	0-3 ft	ug/kg	66	14	674	0.700	8,360	144	1,020	960	97.5% KM (Chebyshev) UCL	144	1,020	960	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	Naphthalene	0-10 ft	ug/kg	76	14	674	0.700	8,360	125	955	834	97.5% KM (Chebyshev) UCL	125	955	834	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	n-Propylbenzene	0-1 ft	ug/kg	55	1	0.150	0.150	0.150	-	-	-	-	-	-	-	-
Soil	VOCs	Total	n-Propylbenzene	0-3 ft	ug/kg	66	3	40.8	0.409	122	2.12	15.4	-	-	2.28	15.5	-	-
Soil	VOCs	Total	n-Propylbenzene	0-10 ft	ug/kg	76	3	40.8	0.409	122	1.85	14.3	-	-	1.92	14.4	-	-
Soil	VOCs	Total	o-Xylene	0-1 ft	ug/kg	55	2	0.175	0.175	0.180	0.170	0.00204	-	-	0.175	0.00500	-	-
Soil	VOCs	Total	o-Xylene	0-3 ft	ug/kg	70	5	652	0.197	3,200	46.7	380	131	95% KM (t) UCL	46.7	380	131	95% KM (t) UCL
Soil	VOCs	Total	o-Xylene	0-10 ft	ug/kg	84	8	940	0.552	4,260	89.7	574	508	97.5% KM (Chebyshev) UCL	89.8	574	508	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	sec-Butylbenzene	0-1 ft	ug/kg	55	0	-	-	-	-	-	-	-	-	-	-	-
Soil	VOCs	Total	sec-Butylbenzene	0-3 ft	ug/kg	66	2	45.3	45.3	90.2	1.91	11.4	-	-	1.93	11.5	-	-
Soil	VOCs	Total	sec-Butylbenzene	0-10 ft	ug/kg	76	2	45.3	45.3	90.2	1.70	10.6	-	-	1.72	10.6	-	-
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	ug/kg	55	10	12.7	4.50	65.0	2.62	9.59	4.96	95% KM (t) UCL	3.26	9.55	5.67	95% KM (t) UCL
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-3 ft	ug/kg	70	19	22,600	5.90	420,000	6,140	49,800	44,400	97.5% KM (Chebyshev) UCL	6,140	49,800	44,400	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-10 ft	ug/kg	84	33	25,200	5.84	420,000	9,910	62,700	53,300	97.5% KM (Chebyshev) UCL	9,910	62,700	53,300	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	Toluene	0-1 ft	ug/kg	55	23	1.19	0.770	5.80	0.904	1.01	1.17	95% KM (% Bootstrap) UCL	0.928	1.00	1.20	95% KM (% Bootstrap) UCL
Soil	VOCs	Total	Toluene	0-3 ft	ug/kg	70	36	1,080	0.765	39,000	558	4,630	4,060	97.5% KM (Chebyshev) UCL	558	4,630	4,060	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	Toluene	0-10 ft	ug/kg	84	45	3,820	0.760	133,000	2,050	15,000	12,400	97.5% KM (Chebyshev) UCL	2,050	15,000	12,400	97.5% KM (Chebyshev) UCL
Soil	VOCs	Total	Trichloroethene (TCE)	0-1 ft	ug/kg	55	4	0.0912	0.0661	0.171	0.0678	0.0216	0.0765	95% KM (t) UCL	0.0912	0.0461	0.136	95% KM (t) UCL
Soil	VOCs	Total	Trichloroethene (TCE)	0-3 ft	ug/kg	66	7	1,330	0.171	6,080	141	834	833	97.5% KM (Chebyshev) UCL	142	835	836	97.5% KM (Chebyshev) UCL

Table I-16
Statistical Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(6 of 8)

Medium Group	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Soil	VOCs	Total	Trichloroethene (TCE)	0-10 ft	ug/kg	76	10	931	0.761	6,080	123	778	710	97.5% KM (Chebyshev) UCL	123	780	713	97.5% KM (Chebyshev) UCL
Groundwater	Metals	Total	Antimony	N/A	ug/L	19	8	1.53	1.07	3.89	1.49	1.15	2.23	95% KM (t) UCL	1.49	1.15	2.23	95% KM (t) UCL
Groundwater	Metals	Total	Arsenic	N/A	ug/L	73	63	5.72	2.69	21.3	5.06	6.16	8.23	95% KM (Chebyshev) UCL	5.06	6.16	8.23	95% KM (Chebyshev) UCL
Groundwater	Metals	Total	Barium	N/A	ug/L	19	19	111	100	304	-	-	165	95% Approximate Gamma UCL	-	-	165	95% Approximate Gamma UCL
Groundwater	Metals	Total	Beryllium	N/A	ug/L	19	7	0.328	0.324	0.435	0.304	0.0739	0.351	95% KM (t) UCL	0.328	0.0673	0.376	95% KM (t) UCL
Groundwater	Metals	Total	Cadmium	N/A	ug/L	19	6	1.91	0.570	5.60	0.915	1.80	1.91	95% KM (t) UCL	0.932	1.79	1.92	95% KM (t) UCL
Groundwater	Metals	Total	Chromium	N/A	ug/L	19	7	8.03	7.43	18.5	6.23	3.49	8.00	95% KM (t) UCL	6.23	3.49	8.00	95% KM (t) UCL
Groundwater	Metals	Total	Copper	N/A	ug/L	19	11	38.5	17.6	201	23.7	44.5	43.8	95% KM (BCA) UCL	23.7	44.5	45.8	95% KM (BCA) UCL
Groundwater	Metals	Total	Iron	N/A	ug/L	73	66	8,830	582	42,900	7,990	12,200	17,000	97.5% KM (Chebyshev) UCL	7,990	12,200	17,000	97.5% KM (Chebyshev) UCL
Groundwater	Metals	Total	Lead	N/A	ug/L	53	32	4.89	0.638	78.2	3.06	11.1	12.8	97.5% KM (Chebyshev) UCL	3.06	11.1	12.8	97.5% KM (Chebyshev) UCL
Groundwater	Metals	Total	Manganese	N/A	ug/L	53	52	1,080	229	5,380	1,060	1,410	1,910	95% KM (Chebyshev) UCL	1,060	1,410	1,910	95% KM (Chebyshev) UCL
Groundwater	Metals	Total	Mercury	N/A	ug/L	24	4	0.148	0.115	0.330	0.0496	0.0676	0.0769	95% KM (t) UCL	0.0496	0.0676	0.0769	95% KM (t) UCL
Groundwater	Metals	Total	Nickel	N/A	ug/L	19	11	35.9	7.61	116	22.9	39.0	117	99% KM (Chebyshev) UCL	22.9	39.0	117	99% KM (Chebyshev) UCL
Groundwater	Metals	Total	Selenium	N/A	ug/L	19	7	11.2	5.63	32.9	4.55	9.23	8.52	95% KM (t) UCL	4.78	9.15	8.74	95% KM (t) UCL
Groundwater	Metals	Total	Silver	N/A	ug/L	19	5	0.226	0.131	0.658	0.162	0.177	0.276	95% KM (t) UCL	0.162	0.177	0.276	95% KM (t) UCL
Groundwater	Metals	Total	Thallium	N/A	ug/L	19	9	0.202	0.197	0.323	0.202	0.0582	0.238	95% KM (t) UCL	0.202	0.0582	0.238	95% KM (t) UCL
Groundwater	Metals	Total	Vanadium	N/A	ug/L	20	18	1.47	1.35	5.90	1.34	1.20	2.54	95% KM (Chebyshev) UCL	1.34	1.20	2.54	95% KM (Chebyshev) UCL
Groundwater	Metals	Total	Zinc	N/A	ug/L	19	15	416	23.7	2,660	329	736	2,070	99% KM (Chebyshev) UCL	329	736	2,070	99% KM (Chebyshev) UCL
Groundwater	Metals	Dissolved	Arsenic	N/A	ug/L	56	49	4.64	2.30	19.3	4.13	5.16	7.17	95% KM (Chebyshev) UCL	4.13	5.16	7.17	95% KM (Chebyshev) UCL
Groundwater	Metals	Dissolved	Barium	N/A	ug/L	3	3	64.1	37.5	134	-	-	-	-	-	-	-	-
Groundwater	Metals	Dissolved	Calcium	N/A	ug/L	14	14	47,400	36,400	172,000	-	-	75,200	95% Approximate Gamma UCL	-	-	75,200	95% Approximate Gamma UCL
Groundwater	Metals	Dissolved	Iron	N/A	ug/L	56	32	11,000	402	35,400	6,320	11,100	21,300	99% KM (Chebyshev) UCL	6,320	11,100	21,300	99% KM (Chebyshev) UCL
Groundwater	Metals	Dissolved	Lead	N/A	ug/L	36	16	0.622	0.0755	3.50	0.292	0.794	0.524	95% KM (t) UCL	0.293	0.793	0.526	95% KM (t) UCL
Groundwater	Metals	Dissolved	Magnesium	N/A	ug/L	14	14	9,450	7,340	25,800	-	-	13,100	95% Student's-t UCL	-	-	13,100	95% Student's-t UCL
Groundwater	Metals	Dissolved	Manganese	N/A	ug/L	36	34	1,140	205	5,540	1,080	1,440	3,500	99% KM (Chebyshev) UCL	1,080	1,440	3,500	99% KM (Chebyshev) UCL
Groundwater	Metals	Dissolved	Potassium	N/A	ug/L	14	14	3,990	2,940	12,900	-	-	6,020	95% Approximate Gamma UCL	-	-	6,020	95% Approximate Gamma UCL
Groundwater	Metals	Dissolved	Sodium	N/A	ug/L	14	14	99,400	14,400	740,000	-	-	647,000	99% Chebyshev (Mean, Sd) UCL	-	-	647,000	99% Chebyshev (Mean, Sd) UCL
Groundwater	Metals	Dissolved	Vanadium	N/A	ug/L	20	15	1.25	1.17	3.10	0.973	0.760	1.34	95% KM (Percentile Bootstrap) UCL	1.02	0.756	1.37	95% KM (Percentile Bootstrap) UCL
Groundwater	Butyltins	Total	Dibutyltin	N/A	ug/L	39	11	0.112	0.0910	0.447	0.0351	0.0832	0.0586	95% KM (t) UCL	0.0380	0.0822	0.0614	95% KM (t) UCL
Groundwater	Butyltins	Total	Monobutyltin	N/A	ug/L	59	9	0.0445	0.0189	0.240	0.0129	0.0310	0.0203	95% KM (t) UCL	0.0187	0.0317	0.0278	95% KM (t) UCL
Groundwater	Butyltins	Total	Tributyltin	N/A	ug/L	8	6	0.0298	0.0259	0.0601	0.0266	0.0134	0.0357	95% KM (Percentile Bootstrap) UCL	0.0266	0.0134	0.0364	95% KM (Percentile Bootstrap) UCL
Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	75	39	389	305	1,800	214	334	278	95% KM (BCA) UCL	223	329	286	95% KM (BCA) UCL
Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	ug/L	75	27	425	260	1,900	198	318	261	95% KM (t) UCL	202	316	265	95% KM (t) UCL
Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	77	20	83.8	30.0	430	32.5	65.8	47.4	95% KM (BCA) UCL	45.5	66.2	61.8	95% KM (BCA) UCL
Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	54	2	0.0430	0.0430	0.0601	0.0267	0.00549	-	-	0.0430	0.0172	-	-
Groundwater	SVOCs	Total	2-Methylnaphthalene	N/A	ug/L	23	4	0.181	0.163	0.360	0.103	0.109	0.175	95% KM (t) UCL	0.124	0.107	0.203	95% KM (t) UCL
Groundwater	SVOCs	Total	Acenaphthene	N/A	ug/L	23	2	0.175	0.175	0.239	0.125	0.0402	0.158	95% KM (t) UCL	0.125	0.0402	0.158	95% KM (t) UCL
Groundwater	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	ug/L	23	4	8.37	6.35	19.0	3.05	3.90	4.70	95% KM (t) UCL	3.05	3.90	4.70	95% KM (t) UCL
Groundwater	SVOCs	Total	Diethyl Phthalate	N/A	ug/L	23	3	1.04	1.03	1.90	0.475	0.568	0.873	95% KM (t) UCL	0.475	0.568	0.873	95% KM (t) UCL
Groundwater	SVOCs	Total	Di-n-octyl Phthalate	N/A	ug/L	23	3	5.07	5.29	7.08	3.59	1.45	4.61	95% KM (t) UCL	3.59	1.45	4.61	95% KM (t) UCL
Groundwater	SVOCs	Total	Isophorone	N/A	ug/L	23	2	0.199	0.199	0.282	0.134	0.0522	0.177	95% KM (t) UCL	0.140	0.0581	0.193	95% KM (t) UCL
Groundwater	SVOCs	Total	Naphthalene	N/A	ug/L	23	3	0.0993	0.101	0.157	0.0598	0.0393	0.0873	95% KM (t) UCL	0.0620	0.0398	0.0913	95% KM (t) UCL
Groundwater	SVOCs	Total	Phenanthrene	N/A	ug/L	74	6	0.798	0.211	3.90	0.152	0.489	0.485	95% KM (BCA) UCL	0.154	0.489	0.458	95% KM (BCA) UCL
Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	ug/L	27	2	1.06	1.06	1.90	0.282	0.317	0.821	97.5% KM (Chebyshev) UCL	0.282	0.317	0.821	97.5% KM (Chebyshev) UCL
Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	ug/L	27	2	2.66	2.66	5.00	0.493	0.884	2.00	97.5% KM (Chebyshev) UCL	0.493	0.884	2.00	97.5% KM (Chebyshev) UCL
Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	ug/L	27	2	3.10	3.10	5.20	1.16	0.793	5.20	95% KM (BCA) UCL	1.16	0.793	-	-
Groundwater	VOCs	Total	Acetone	N/A	ug/L	27	4	13.2	14.6	15.4	9.11	2.03	9.88	95% KM (t) UCL	9.27	2.22	10.2	95% KM (t) UCL
Groundwater	VOCs	Total	Carbon Disulfide	N/A	ug/L	27	6	0.803	0.185	3.95	0.443	0.974	0.988	95% KM (BCA) UCL	0.443	0.974	1.03	95% KM (BCA) UCL
Groundwater	VOCs	Total	Chloroform	N/A	ug/L	76	9	1.43	0.609	3.70	0.262	0.642	0.392	95% KM (t) UCL	0.382	0.626	0.546	95% KM (t) UCL
Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	ug/L	42	16	154	2.45	660	58.6	172	331	99% KM (Chebyshev) UCL	58.7	172	331	99% KM (Chebyshev) UCL
Groundwater	VOCs	Total	Isopropylbenzene	N/A	ug/L	27	2	3.90	3.90	4.60	3.25	0.264	3.38	95% KM (t) UCL	3.25	0.264	3.38	95% KM (t) UCL
Groundwater	VOCs	Total	n-Propylbenzene	N/A	ug/L	27	2	1.60	1.60	2.00	1.23	0.151	1.30	95% KM (t) UCL	1.23	0.151	1.30	95% KM (t) UCL
Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	76	29	3.11	2.10	8.78	1.33	2.07	1.74	95% KM (t) UCL	1.40	2.04	1.80	95% KM (t) UCL
Groundwater	VOCs	Total	Toluene	N/A	ug/L	27	5	0.444	0.510	0.640	0.316	0.139	0.388	95% KM (t) UCL	0.444	0.168	0.587	95% KM (t) UCL
Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	ug/L	27	2	0.905	0.905	1.70	0.169	0.300	0.679	97.5% KM (Chebyshev) UCL	0.169	0.300	0.679	97.5% KM (Chebyshev) UCL
Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	ug/L	42	15	1.81	1.90	3.40	0.782	1.11	1.14	95% KM (BCA) UCL	0.862	1.08	1.18	95% KM (BCA) UCL
Groundwater	VOCs	Total	Vinyl Chloride	N/A	ug/L	76	20	0.677	0.400	4.10	0.313	0.499	0.413	95% KM (t) UCL	0.399	0.487	0.505	95% KM (t) UCL
DP Groundwater	Metals	Total	Aluminum	N/A	ug/L	10	10	5,880	1,660	17,900	-	-	21,300	95% Adjusted Gamma UCL	-	-	21,300	95% Adjusted Gamma UCL
DP Groundwater	Metals	Total	Antimony	N/A	ug/L	10	9	0.650	0.477	1.57	0.623	0.387	0.861	95% KM (t) UCL	0.623	0.387	0.861	95% KM (t) UCL
DP Groundwater	Metals	Total	Arsenic	N/A	ug/L	10	8	2.40	1.52	7.70	1.94	2.34	3.40	95% KM (t) UCL	1.96	2.33	3.40	95% KM (t) UCL
DP Groundwater	Metals	Total	Barium	N/A	ug/L	10	10	35.6	20.5	97.8	-	-	67.9	95% Approximate Gamma UCL	-	-	67.9	95% Approximate Gamma UCL
DP Groundwater	Metals	Total	Beryllium	N/A	ug/L	10	4	0.367	0.263	0.785	0.241	0.187	0.366	95% KM (t) UCL	0.283	0.177	0.414	95% KM (t) UCL
DP Groundwater	Metals	Total	Calcium	N/A	ug/L	10	10	27,500	28,000	33,700	-	-	30,800	95% Student's-t UCL	-	-	30,800	95% Student's-t UCL
DP Groundwater	Metals	Total	Chromium	N/A	ug/L	10	10	11.5	8.72	31.8	-	-	16.8	95% Student's-t UCL	-	-	16.8	95% Student's-t UCL
DP Groundwater	Metals	Total	Cobalt	N/A	ug/L	10	6	5.58	4.73	13.1	4.02	3.47	6.22	95% KM (t) UCL	4.44	3.26	6.57	95% KM (t) UCL

Table I-16
Statistical Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(7 of 8)

Medium Group	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
DP Groundwater	Metals	Total	Copper	N/A	ug/L	12	12	34.8	13.2	204	-	-	81.1	95% Approximate Gamma UCL	-	-	81.1	95% Approximate Gamma UCL
DP Groundwater	Metals	Total	Iron	N/A	ug/L	10	9	9,080	3,220	25,900	8,180	9,720	22,400	95% KM (Chebyshev) UCL	8,180	9,720	22,400	95% KM (Chebyshev) UCL
DP Groundwater	Metals	Total	Lead	N/A	ug/L	12	9	5.88	5.01	13.7	4.43	5.00	7.18	95% KM (t) UCL	4.43	5.00	7.18	95% KM (t) UCL
DP Groundwater	Metals	Total	Magnesium	N/A	ug/L	10	10	9,540	9,000	15,400	-	-	11,600	95% Student's-t UCL	-	-	11,600	95% Student's-t UCL
DP Groundwater	Metals	Total	Manganese	N/A	ug/L	10	10	225	128	708	-	-	368	95% Student's-t UCL	-	-	368	95% Student's-t UCL
DP Groundwater	Metals	Total	Mercury	N/A	ug/L	10	2	0.0880	0.0880	0.100	0.0784	0.00720	0.0843	95% KM (t) UCL	0.0880	0.0120	0.110	95% KM (t) UCL
DP Groundwater	Metals	Total	Nickel	N/A	ug/L	12	11	11.8	7.94	50.1	10.9	13.8	29.1	95% KM (Chebyshev) UCL	11.1	13.7	29.2	95% KM (Chebyshev) UCL
DP Groundwater	Metals	Total	Potassium	N/A	ug/L	10	10	1,760	1,800	3,210	-	-	2,190	95% Student's-t UCL	-	-	2,190	95% Student's-t UCL
DP Groundwater	Metals	Total	Selenium	N/A	ug/L	10	10	1.33	1.24	2.06	-	-	1.59	95% Student's-t UCL	-	-	1.59	95% Student's-t UCL
DP Groundwater	Metals	Total	Silver	N/A	ug/L	10	9	0.112	0.0450	0.376	0.102	0.115	0.271	95% KM (Chebyshev) UCL	0.104	0.114	0.271	95% KM (Chebyshev) UCL
DP Groundwater	Metals	Total	Sodium	N/A	ug/L	10	10	12,900	8,440	42,900	-	-	28,700	95% Chebyshev (Mean, Sd) UCL	-	-	28,700	95% Chebyshev (Mean, Sd) UCL
DP Groundwater	Metals	Total	Thallium	N/A	ug/L	10	7	0.0751	0.0570	0.146	0.0655	0.0318	0.0854	95% KM (t) UCL	0.0751	0.0337	0.100	95% KM (t) UCL
DP Groundwater	Metals	Total	Vanadium	N/A	ug/L	10	10	20.3	7.32	77.6	-	-	47.0	95% Approximate Gamma UCL	-	-	47.0	95% Approximate Gamma UCL
DP Groundwater	Metals	Total	Zinc	N/A	ug/L	12	12	31.2	14.2	149	-	-	63.7	95% Approximate Gamma UCL	-	-	63.7	95% Approximate Gamma UCL
DP Groundwater	Metals	Dissolved	Aluminum	N/A	ug/L	10	7	245	15.1	1,370	173	407	1,560	99% KM (Chebyshev) UCL	176	406	1,560	99% KM (Chebyshev) UCL
DP Groundwater	Metals	Dissolved	Antimony	N/A	ug/L	10	10	0.406	0.300	1.67	-	-	1.02	95% Chebyshev (Mean, Sd) UCL	-	-	1.02	95% Chebyshev (Mean, Sd) UCL
DP Groundwater	Metals	Dissolved	Arsenic	N/A	ug/L	10	10	0.929	1.04	1.36	-	-	1.14	95% Student's-t UCL	-	-	1.14	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Barium	N/A	ug/L	10	10	9.43	7.80	20.6	-	-	12.5	95% Student's-t UCL	-	-	12.5	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Calcium	N/A	ug/L	10	10	24,700	26,700	34,100	-	-	29,000	95% Student's-t UCL	-	-	29,000	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Chromium	N/A	ug/L	10	10	2.74	3.02	4.29	-	-	3.39	95% Student's-t UCL	-	-	3.39	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Cobalt	N/A	ug/L	10	8	2.73	2.37	5.08	2.43	1.38	3.28	95% KM (t) UCL	2.66	1.34	3.57	95% KM (t) UCL
DP Groundwater	Metals	Dissolved	Copper	N/A	ug/L	12	9	1.26	0.804	4.38	1.14	0.989	1.72	95% KM (BCA) UCL	1.14	0.989	1.76	95% KM (BCA) UCL
DP Groundwater	Metals	Dissolved	Iron	N/A	ug/L	10	4	212	166	476	107	136	198	95% KM (t) UCL	107	136	198	95% KM (t) UCL
DP Groundwater	Metals	Dissolved	Lead	N/A	ug/L	12	6	0.0988	0.0330	0.378	0.0746	0.109	0.160	95% KM (BCA) UCL	0.0806	0.115	0.168	95% KM (BCA) UCL
DP Groundwater	Metals	Dissolved	Magnesium	N/A	ug/L	10	10	7,180	6,850	12,000	-	-	8,730	95% Student's-t UCL	-	-	8,730	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Manganese	N/A	ug/L	10	10	91.6	24.0	587	-	-	322	95% Adjusted Gamma UCL	-	-	322	95% Adjusted Gamma UCL
DP Groundwater	Metals	Dissolved	Mercury	N/A	ug/L	10	2	0.0575	0.0575	0.0600	0.0555	0.00150	0.0567	95% KM (t) UCL	0.0575	0.00250	0.0621	95% KM (t) UCL
DP Groundwater	Metals	Dissolved	Nickel	N/A	ug/L	12	4	1.82	1.49	3.90	1.04	1.14	1.83	95% KM (t) UCL	1.82	1.35	3.22	95% KM (t) UCL
DP Groundwater	Metals	Dissolved	Potassium	N/A	ug/L	10	10	1,300	1,170	2,210	-	-	1,660	95% Student's-t UCL	-	-	1,660	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Selenium	N/A	ug/L	10	10	0.696	0.630	1.30	-	-	0.904	95% Student's-t UCL	-	-	0.904	95% Student's-t UCL
DP Groundwater	Metals	Dissolved	Silver	N/A	ug/L	10	8	0.0364	0.0270	0.0790	0.0339	0.0164	0.0441	95% KM (BCA) UCL	0.0364	0.0175	0.0497	95% KM (BCA) UCL
DP Groundwater	Metals	Dissolved	Sodium	N/A	ug/L	10	10	14,200	8,820	47,700	-	-	32,300	95% Chebyshev (Mean, Sd) UCL	-	-	32,300	95% Chebyshev (Mean, Sd) UCL
DP Groundwater	Metals	Dissolved	Thallium	N/A	ug/L	10	3	0.0542	0.0460	0.0855	0.0380	0.0165	0.0496	95% KM (t) UCL	0.0542	0.0230	0.0840	95% KM (t) UCL
DP Groundwater	Metals	Dissolved	Vanadium	N/A	ug/L	10	6	1.35	1.24	2.61	1.24	0.648	1.74	95% KM (t) UCL	1.35	0.637	1.88	95% KM (t) UCL
DP Groundwater	Metals	Dissolved	Zinc	N/A	ug/L	12	6	2.70	2.28	4.10	2.35	0.669	2.73	95% KM (t) UCL	2.35	0.669	2.73	95% KM (t) UCL
DP Groundwater	Butyltins	Total	Monobutyltin	N/A	ug/L	4	2	0.00596	0.00596	0.00671	-	-	-	-	-	-	-	-
DP Groundwater	Butyltins	Total	Tributyltin	N/A	ug/L	4	2	0.00360	0.00360	0.00435	-	-	-	-	-	-	-	-
DP Groundwater	Pesticides	Total	BHC (gamma) Lindane	N/A	ug/L	3	3	0.00191	0.00232	0.00249	-	-	-	-	-	-	-	-
DP Groundwater	Pesticides	Total	Methoxychlor	N/A	ug/L	3	2	0.00310	0.00310	0.00521	-	-	-	-	-	-	-	-
DP Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	6	2	17.8	17.8	20.9	15.7	2.31	-	-	17.8	3.10	-	-
DP Groundwater	SVOCs	Total	2-Methylnaphthalene	N/A	ug/L	9	6	0.0669	0.0471	0.153	0.0511	0.0474	0.0833	95% KM (t) UCL	0.0520	0.0468	0.0838	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Acenaphthene	N/A	ug/L	9	5	0.0124	0.00812	0.0230	0.00932	0.00604	0.0135	95% KM (t) UCL	0.0112	0.00594	0.0163	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Benzyl Alcohol	N/A	ug/L	7	2	0.0512	0.0512	0.0523	0.0503	0.000805	-	-	0.0512	0.00115	-	-
DP Groundwater	SVOCs	Total	Butyl Benzyl Phthalate	N/A	ug/L	9	6	0.161	0.156	0.228	0.150	0.0357	0.176	95% KM (t) UCL	0.161	0.0359	0.190	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Dibenzofuran	N/A	ug/L	9	2	0.0329	0.0329	0.0421	0.0257	0.00578	0.0308	95% KM (t) UCL	0.0329	0.00920	0.0500	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Di-n-butyl Phthalate	N/A	ug/L	9	6	0.162	0.161	0.239	0.159	0.0420	0.193	95% KM (t) UCL	0.159	0.0420	0.193	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Fluorene	N/A	ug/L	9	6	0.0160	0.0128	0.0351	0.0126	0.00940	0.0190	95% KM (t) UCL	0.0140	0.00883	0.0202	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Isophorone	N/A	ug/L	9	2	0.0664	0.0664	0.0842	0.0526	0.0112	0.0624	95% KM (t) UCL	0.0664	0.0178	0.0995	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Naphthalene	N/A	ug/L	9	4	0.0322	0.0307	0.0452	0.0266	0.00782	0.0322	95% KM (t) UCL	0.0322	0.00907	0.0419	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Phenanthrene	N/A	ug/L	9	8	0.0278	0.0104	0.1440	0.0256	0.0420	0.0909	95% KM (Chebyshev) UCL	0.0258	0.0419	0.0910	95% KM (Chebyshev) UCL
DP Groundwater	SVOCs	Total	Phenol	N/A	ug/L	8	5	0.0220	0.0228	0.0291	0.0179	0.00733	0.0234	95% KM (t) UCL	0.0220	0.00647	0.0281	95% KM (t) UCL
DP Groundwater	SVOCs	Total	Pyrene	N/A	ug/L	9	3	0.0109	0.00329	0.0261	0.00573	0.00720	0.0261	95% KM (BCA) UCL	0.00577	0.00719	0.0261	95% KM (BCA) UCL
DP Groundwater	SVOCs	Dissolved	2-Methylnaphthalene	N/A	ug/L	8	6	0.0939	0.0286	0.280	0.0744	0.0963	0.237	95% KM (Chebyshev) UCL	0.0761	0.0954	0.237	95% KM (Chebyshev) UCL
DP Groundwater	SVOCs	Dissolved	Acenaphthene	N/A	ug/L	8	5	0.0146	0.0104	0.0348	0.0110	0.00992	0.0184	95% KM (t) UCL	0.0127	0.00959	0.0205	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Butyl Benzyl Phthalate	N/A	ug/L	8	6	0.134	0.136	0.155	0.134	0.0173	0.149	95% KM (t) UCL	0.134	0.0173	0.149	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Diethyl Phthalate	N/A	ug/L	8	3	0.0761	0.0687	0.101	0.0651	0.0140	0.0766	95% KM (t) UCL	0.0761	0.0181	0.100	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Di-n-butyl Phthalate	N/A	ug/L	8	6	0.157	0.153	0.207	0.157	0.0282	0.181	95% KM (t) UCL	0.157	0.0282	0.181	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Fluorene	N/A	ug/L	8	5	0.00790	0.00714	0.0116	0.00739	0.00162	0.00872	95% KM (BCA) UCL	0.00790	0.00187	0.00957	95% KM (BCA) UCL
DP Groundwater	SVOCs	Dissolved	Isophorone	N/A	ug/L	8	2	0.0633	0.0633	0.0782	0.0520	0.00989	0.0614	95% KM (t) UCL	0.0633	0.0150	0.0916	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Naphthalene	N/A	ug/L	8	6	0.107	0.0955	0.200	0.0873	0.0722	0.140	95% KM (t) UCL	0.0888	0.0711	0.141	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Phenanthrene	N/A	ug/L	8	6	0.0113	0.0103	0.0190	0.00952	0.00519	0.0133	95% KM (t) UCL	0.0113	0.00486	0.0154	95% KM (t) UCL
DP Groundwater	SVOCs	Dissolved	Phenol	N/A	ug/L	4	3	0.0180	0.0192	0.0248	-	-	-	-	-	-	-	-
DP Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	ug/L	10	7	0.467	0.127	2.22	0.348	0.638	1.71	97.5% KM (Chebyshev) UCL	0.380	0.632	1.74	97.5% KM (Chebyshev) UCL
DP Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	ug/L	10	5	0.604	0.173	2.52	0.330	0.730	1.06	95% KM (BCA) UCL	0.365	0.718	0.851	95% KM (BCA) UCL
DP Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	ug/L	10	2	0.614	0.614	1.16	0.173	0.331	1.64	99% KM (Chebyshev) UCL	0.173	0.331	1.64	99% KM (Chebyshev) UCL

Table I-16
Statistical Summary for All Four AOPCs Combined
Bradford Island - Upland Operable Unit
(8 of 8)

Medium Group	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
DP Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	ug/L	10	3	0.0406	0.0415	0.0485	0.0344	0.00555	0.0383	95% KM (t) UCL	0.0406	0.00689	0.0495	95% KM (t) UCL
DP Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	ug/L	10	3	0.142	0.130	0.179	0.125	0.0186	0.138	95% KM (t) UCL	0.142	0.0267	0.177	95% KM (t) UCL
DP Groundwater	VOCs	Total	Acetone	N/A	ug/L	10	3	2.23	1.59	3.88	1.52	0.793	2.09	95% KM (t) UCL	2.23	1.18	3.76	95% KM (t) UCL
DP Groundwater	VOCs	Total	Benzene	N/A	ug/L	10	6	0.0744	0.0600	0.137	0.0664	0.0247	0.0821	95% KM (t) UCL	0.0744	0.0293	0.0984	95% KM (t) UCL
DP Groundwater	VOCs	Total	Chloroform	N/A	ug/L	10	2	0.132	0.132	0.174	0.0990	0.0250	0.119	95% KM (t) UCL	0.132	0.0417	0.209	95% KM (t) UCL
DP Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	ug/L	10	9	57.3	4.54	341	51.6	106	206	95% KM (Chebyshev) UCL	51.6	106	207	95% KM (Chebyshev) UCL
DP Groundwater	VOCs	Total	Ethylbenzene	N/A	ug/L	10	4	0.0402	0.0402	0.0447	0.0377	0.00307	0.0399	95% KM (t) UCL	0.0402	0.00318	0.0435	95% KM (t) UCL
DP Groundwater	VOCs	Total	m,p-Xylenes	N/A	ug/L	10	4	0.119	0.132	0.132	0.0971	0.0226	0.112	95% KM (t) UCL	0.119	0.0214	0.142	95% KM (t) UCL
DP Groundwater	VOCs	Total	Naphthalene	N/A	ug/L	10	2	0.0406	0.0406	0.0452	0.0375	0.00347	0.0411	95% KM (t) UCL	0.0406	0.00465	0.0491	95% KM (t) UCL
DP Groundwater	VOCs	Total	o-Xylene	N/A	ug/L	10	4	0.0507	0.0495	0.0735	0.0385	0.0139	0.0478	95% KM (t) UCL	0.0507	0.0153	0.0669	95% KM (t) UCL
DP Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	10	10	7.80	1.45	54.5	-	-	27.6	95% Adjusted Gamma UCL	-	-	27.6	95% Adjusted Gamma UCL
DP Groundwater	VOCs	Total	Toluene	N/A	ug/L	10	6	0.205	0.199	0.299	0.189	0.0787	0.249	95% KM (t) UCL	0.205	0.0733	0.265	95% KM (t) UCL
DP Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	ug/L	10	3	0.995	1.09	1.80	0.365	0.563	0.765	95% KM (t) UCL	0.365	0.563	0.765	95% KM (t) UCL
DP Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	ug/L	10	9	5.83	0.597	43.7	5.26	12.8	48.1	99% KM (Chebyshev) UCL	5.28	12.8	48.1	99% KM (Chebyshev) UCL
DP Groundwater	VOCs	Total	Vinyl Chloride	N/A	ug/L	10	2	0.372	0.372	0.611	0.180	0.144	-	-	0.372	0.240	-	-

Notes
Only those analytes with at least 2 detected results are shown on this table.
If not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.

% = percent
DP = Direct Push
KM = Kaplan-Meier
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = method reporting limit
MW Soil = Mass Wasting Soil
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SD = standard deviation
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
ug/m^3 = micrograms per cubic meters
UCL = upper confidence limit

Table I-17
Data Summary for Reference Area Samples
Bradford Island - Upland Operable Unit
(1 of 2)

											Upper Prediction Limit (UPL)	
Medium	Analyte Group	Total/ Dissolved	Analyte	Depth Category	Unit	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	Distribution	95% UPL
Soil	Metals	Total	Aluminum	0-1 ft	mg/kg	14	14	22,700	22,000	33,200	Normal	31400
Soil	Metals	Total	Antimony	0-1 ft	mg/kg	14	14	0.128	0.130	0.180	Normal	0.176
Soil	Metals	Total	Arsenic	0-1 ft	mg/kg	14	14	3.10	3.22	5.18	Normal	5.40
Soil	Metals	Total	Barium	0-1 ft	mg/kg	14	14	110	105	182	Normal	169
Soil	Metals	Total	Beryllium	0-1 ft	mg/kg	14	14	0.491	0.498	0.629	Normal	0.659
Soil	Metals	Total	Cadmium	0-1 ft	mg/kg	14	14	0.162	0.156	0.340	Gamma	0.271
Soil	Metals	Total	Chromium	0-1 ft	mg/kg	14	14	21.8	21.8	27.3	Normal	28.1
Soil	Metals	Total	Cobalt	0-1 ft	mg/kg	14	14	16.5	17.4	19.9	Non-parametric	19.9
Soil	Metals	Total	Copper	0-1 ft	mg/kg	14	14	39.0	36.6	58.2	Normal	56.7
Soil	Metals	Total	Lead	0-1 ft	mg/kg	14	14	17.7	16.4	26.5	Normal	25.5
Soil	Metals	Total	Manganese	0-1 ft	mg/kg	14	14	627	624	920	Normal	885
Soil	Metals	Total	Mercury	0-1 ft	mg/kg	14	14	0.0494	0.0480	0.0680	Normal	0.0660
Soil	Metals	Total	Nickel	0-1 ft	mg/kg	14	14	18.7	19.2	26.1	Normal	26.5
Soil	Metals	Total	Selenium	0-1 ft	mg/kg	14	0	-	-	-	Non-parametric	0.500 / 2.30
Soil	Metals	Total	Silver	0-1 ft	mg/kg	14	12	0.0635	0.0483	0.187	Non-parametric	0.187
Soil	Metals	Total	Thallium	0-1 ft	mg/kg	14	8	0.158	0.150	0.203	Non-parametric	0.203
Soil	Metals	Total	Vanadium	0-1 ft	mg/kg	14	14	78.8	80.2	99.3	Normal	104
Soil	Metals	Total	Zinc	0-1 ft	mg/kg	14	14	58.8	57.6	68.5	Normal	71.7
Soil	SVOCs	Total	Acenaphthene	0-1 ft	ug/kg	14	9	1.75	1.60	3.40	Non-parametric	3.40
Soil	SVOCs	Total	Acenaphthylene	0-1 ft	ug/kg	14	1	-	-	1.60	Non-parametric	1.60
Soil	SVOCs	Total	Anthracene	0-1 ft	ug/kg	14	12	2.47	2.05	4.90	Non-parametric	4.90
Soil	SVOCs	Total	Fluorene	0-1 ft	ug/kg	14	1	-	-	3.20	Non-parametric	3.20
Soil	SVOCs	Total	Naphthalene	0-1 ft	ug/kg	14	6	1.70	1.65	2.20	Gamma	29.4
Soil	SVOCs	Total	Phenanthrene	0-1 ft	ug/kg	14	14	13.2	12.0	34.0	Non-parametric	2.20
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	14	14	21.2	19.8	49.3	Non-parametric	49.3
Soil	SVOCs	Total	Benzo(a)anthracene	0-1 ft	ug/kg	14	14	14.0	12.5	34.0	Gamma	28.7
Soil	SVOCs	Total	Benzo(a)pyrene	0-1 ft	ug/kg	14	14	18.2	16.0	45.0	Gamma	37.0
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	ug/kg	14	14	23.4	21.0	55.0	Gamma	46.4
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	ug/kg	14	14	13.7	12.5	32.0	Gamma	26.5
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	ug/kg	14	14	8.00	7.45	19.0	Gamma	16.2
Soil	SVOCs	Total	Chrysene	0-1 ft	ug/kg	14	14	18.3	16.0	45.0	Gamma	37.4
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	ug/kg	14	7	4.36	4.30	6.90	Non-parametric	6.90
Soil	SVOCs	Total	Fluoranthene	0-1 ft	ug/kg	14	14	27.0	24.0	66.0	Gamma	55.1
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	ug/kg	14	14	14.1	12.0	34.0	Gamma	27.0
Soil	SVOCs	Total	Pyrene	0-1 ft	ug/kg	14	14	26.8	25.0	64.0	Gamma	53.3
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	14	14	167	147	401	Non-parametric	401

Table I-17
Data Summary for Reference Area Samples
Bradford Island - Upland Operable Unit
(2 of 2)

Notes
For analytes with less than 100% detection rate, but at least one detection, the maximum detected value was assessed as the non-parametric UPL.
For analytes with no detections (0% detection rate), the maximum MDL and maximum MRL are shown (MDL/MRL) as the non-paramentric UPL.
UPLs were not calculated when less than 8 samples were available (i.e., groundwater is not shown because there were less than 8 samples).

% = percent
Max = maximum
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
UPL = upper prediction limit

Table I-18a
Statistical Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(1 of 4)

											Statistics - ND censored at the MDL				Statistics - ND censored at the MRL			
Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Surface Water	Metals	Dissolved	Arsenic	ug/L	Wet	5	5	0.852	0.890	0.940	-	-	-	-	-	-	-	-
Surface Water	Metals	Dissolved	Barium	ug/L	Wet	5	5	22.8	23.0	24.0	-	-	-	-	-	-	-	-
Surface Water	Metals	Dissolved	Beryllium	ug/L	Wet	5	2	0.00350	0.00350	0.00400	0.00350	0.000500	-	-	0.00350	0.000500	-	-
Surface Water	Metals	Dissolved	Cadmium	ug/L	Wet	5	2	0.00900	0.00900	0.0100	0.00840	0.000800	-	-	0.00900	0.00100	-	-
Surface Water	Metals	Dissolved	Copper	ug/L	Wet	5	5	0.470	0.460	0.520	-	-	-	-	-	-	-	-
Surface Water	Metals	Dissolved	Lead	ug/L	Wet	5	3	0.0240	0.0220	0.0360	0.0200	0.00858	-	-	0.0200	0.00858	-	-
Surface Water	Metals	Dissolved	Thallium	ug/L	Wet	5	5	0.0264	0.0240	0.0310	-	-	-	-	-	-	-	-
Surface Water	Metals	Total	Aluminum	ug/L	Wet	5	3	110	99.0	141	110	21.9	-	-	110	21.9	-	-
Surface Water	Metals	Total	Arsenic	ug/L	Wet	5	5	0.910	0.920	1.01	-	-	-	-	-	-	-	-
Surface Water	Metals	Total	Barium	ug/L	Wet	5	5	24.2	24.0	27.0	-	-	-	-	-	-	-	-
Surface Water	Metals	Total	Beryllium	ug/L	Wet	5	2	0.00600	0.00600	0.00900	0.00600	0.00300	-	-	0.00600	0.00300	-	-
Surface Water	Metals	Total	Cadmium	ug/L	Wet	5	5	0.0142	0.0130	0.0190	-	-	-	-	-	-	-	-
Surface Water	Metals	Total	Copper	ug/L	Wet	5	5	0.704	0.670	0.790	-	-	-	-	-	-	-	-
Surface Water	Metals	Total	Lead	ug/L	Wet	5	5	0.118	0.108	0.175	-	-	-	-	-	-	-	-
Surface Water	Metals	Total	Thallium	ug/L	Wet	5	5	0.0292	0.0280	0.0330	-	-	-	-	-	-	-	-
Surface Water	NWTPH-Dx	Dissolved	Diesel Range Organics	ug/L	Wet	5	5	24.2	18.0	46.0	-	-	-	-	-	-	-	-
Surface Water	NWTPH-Dx	Total	Diesel Range Organics	ug/L	Wet	5	2	15.0	15.0	15.0	-	-	-	-	-	-	-	-
Surface Water	SVOCs	Column	Acenaphthene	ng/L	Wet	5	5	1.00	1.03	1.26	-	-	-	-	-	-	-	-
Surface Water	SVOCs	Fiter	Acenaphthene	ng/L	Wet	5	0	-	-	-	-	-	-	-	-	-	-	-
Surface Water	SVOCs	C+F	Acenaphthene	ng/L	Wet	5	5	1.03	1.06	1.28	-	-	-	-	-	-	-	-
Surface Water	SVOCs	Column	Anthracene	ng/L	Wet	5	0	-	-	-	-	-	-	-	-	-	-	-
Surface Water	SVOCs	Filter	Anthracene	ng/L	Wet	5	5	0.0274	0.0288	0.0317	-	-	-	-	-	-	-	-
Surface Water	SVOCs	C+F	Anthracene	ng/L	Wet	5	5	0.106	0.107	0.121	-	-	-	-	-	-	-	-
Surface Water	SVOCs	Column	Benzo(a)anthracene	ng/L	Wet	5	3	0.0118	0.0120	0.0152	0.0104	0.00279	-	-	0.0104	0.00279	-	-
Surface Water	SVOCs	Filter	Benzo(a)anthracene	ng/L	Wet	5	0	-	-	-	-	-	-	-	-	-	-	-
Surface Water	SVOCs	C+F	Benzo(a)anthracene	ng/L	Wet	5	3	0.0536	-	0.0600	0.0515	0.00657	-	-	0.0515	0.00657	-	-
Surface Water	SVOCs	Column	Benzo(b)fluoranthene	ng/L	Wet	5	0	-	-	-	-	-	-	-	-	-	-	-
Surface Water	SVOCs	Filter	Benzo(b)fluoranthene	ng/L	Wet	5	2	0.0769	0.0769	0.0825	0.0735	0.00448	-	-	0.0735	0.00448	-	-
Surface Water	SVOCs	C+F	Benzo(b)fluoranthene	ng/L	Wet	5	2	0.0902	-	0.0917	0.0894	0.00134	-	-	0.0894	0.00134	-	-
Surface Water	SVOCs	Column	Chrysene	ng/L	Wet	5	5	0.0474	0.0494	0.0514	-	-	-	-	-	-	-	-
Surface Water	SVOCs	Filter	Chrysene	ng/L	Wet	5	2	0.119	0.119	0.125	0.115	0.00480	-	-	0.115	0.00480	-	-
Surface Water	SVOCs	C+F	Chrysene	ng/L	Wet	5	5	0.139	0.136	0.171	-	-	-	-	-	-	-	-
Surface Water	SVOCs	Column	Fluoranthene	ng/L	Wet	5	0	-	-	-	-	-	-	-	-	-	-	-
Surface Water	SVOCs	Filter	Fluoranthene	ng/L	Wet	5	5	0.1562	0.143	0.212	-	-	-	-	-	-	-	-
Surface Water	SVOCs	C+F	Fluoranthene	ng/L	Wet	5	5	0.706	0.674	0.784	-	-	-	-	-	-	-	-
Surface Water	SVOCs	Column	Phenanthrene	ng/L	Wet	5	5	1.37	1.39	1.50	-	-	-	-	-	-	-	-
Surface Water	SVOCs	Filter	Phenanthrene	ng/L	Wet	5	1	0.188	0.188	0.188	-	-	-	-	-	-	-	-
Surface Water	SVOCs	C+F	Phenanthrene	ng/L	Wet	5	5	1.48	1.48	1.61	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Aluminum	mg/kg	Dry	19	19	13,279	13,100	22,900	-	-	14,464	95% Approximate Gamma UCL	-	-	14,464	95% Approximate Gamma UCL
Sediment	Metals	Total	Antimony	mg/kg	Dry	19	18	0.161	0.155	0.280	0.155	0.0654	0.182	95% KM (t) UCL	0.155	0.0654	0.182	95% KM (t) UCL
Sediment	Metals	Total	Arsenic	mg/kg	Dry	19	19	3.12	2.93	5.39	-	-	3.55	95% Approximate Gamma UCL	-	-	3.55	95% Approximate Gamma UCL
Sediment	Metals	Total	Barium	mg/kg	Dry	19	19	121	123	202	-	-	135	95% Student's-t UCL	-	-	135	95% Student's-t UCL
Sediment	Metals	Total	Beryllium	mg/kg	Dry	19	19	0.362	0.369	0.597	-	-	0.399	95% Student's-t UCL	-	-	0.399	95% Student's-t UCL
Sediment	Metals	Total	Cadmium	mg/kg	Dry	19	17	0.485	0.460	0.719	0.453	0.181	0.527	95% KM (t) UCL	0.453	0.181	0.528	95% KM (Percentile Bootstrap) UCL
Sediment	Metals	Total	Chromium	mg/kg	Dry	19	19	19.9	18.5	33.5	-	-	22.0	95% Student's-t UCL	-	-	22.0	95% Student's-t UCL
Sediment	Metals	Total	Cobalt	mg/kg	Dry	19	19	8.59	8.31	15.1	-	-	9.45	95% Approximate Gamma UCL	-	-	9.45	95% Approximate Gamma UCL
Sediment	Metals	Total	Copper	mg/kg	Dry	19	19	20.5	19.9	33.1	-	-	22.4	95% Student's-t UCL	-	-	22.4	95% Student's-t UCL
Sediment	Metals	Total	Lead	mg/kg	Dry	19	19	8.93	10.0	16.8	-	-	10.2	95% Student's-t UCL	-	-	10.2	95% Student's-t UCL
Sediment	Metals	Total	Mercury	mg/kg	Dry	19	19	0.132	0.109	0.373	-	-	0.199	95% Approximate Gamma UCL	-	-	0.199	95% Approximate Gamma UCL
Sediment	Metals	Total	Nickel	mg/kg	Dry	19	19	15.5	13.4	51.5	-	-	19.5	95% Modified-t UCL	-	-	19.5	95% Modified-t UCL
Sediment	Metals	Total	Thallium	mg/kg	Dry	19	15	0.183	0.187	0.218	0.173	0.0278	0.186	95% KM (Percentile Bootstrap) UCL	0.173	0.0278	0.186	95% KM (Percentile Bootstrap) UCL
Sediment	Metals	Total	Vanadium	mg/kg	Dry	19	19	40.0	37.4	59.3	-	-	43.2	95% Student's-t UCL	-	-	43.2	95% Student's-t UCL
Sediment	Metals	Total	Zinc	mg/kg	Dry	19	19	81.8	86.1	113	-	-	89.0	95% Student's-t UCL	-	-	89.0	95% Student's-t UCL
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	19	2	15.8	-	27.0	5.78	5.00	27.0	95% KM (BCA) UCL	5.78	5.00	27.0	95% KM (BCA) UCL
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Dry	19	2	17.5	-	28.7	7.48	5.00	28.7	95% KM (BCA) UCL	13.1	5.63	16.3	95% KM (t) UCL
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	19	19	15.7	11.0	54.0	-	-	22.0	95% Approximate Gamma UCL	-	-	22.0	95% Approximate Gamma UCL
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	19	12	108	109	180	95.3	48.8	118	95% KM (t) UCL	95.3	48.8	118	95% KM (t) UCL
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	19	3	173	140	340	102	74.9	180	95% KM (t) UCL	102	74.9	180	95% KM (t) UCL

Table I-18a
Statistical Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(2 of 4)

											Statistics - ND censored at the MDL				Statistics - ND censored at the MRL			
Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	19	6	11.4	9.15	21.0	6.90	4.59	8.9	95% KM (t) UCL	7.85	4.27	9.9	95% KM (t) UCL
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	19	5	2.00	1.90	2.70	1.63	0.297	1.76	95% KM (t) UCL	2.00	0.390	2.34	95% KM (t) UCL
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	19	14	3.59	3.10	7.40	3.01	1.92	3.80	95% KM (t) UCL	3.59	1.93	4.52	95% KM (t) UCL
Sediment	SVOCs	Total	Total LPAHs (KM, capped)	ug/kg	Dry	19	14	-	-	12.0	7.27	2.17	8.16	95% KM (Percentile Bootstrap) UCL	30.5	2.89	31.9	95% KM (t) UCL
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	19	12	4.59	3.30	12.0	3.49	2.80	4.68	95% KM (Percentile Bootstrap) UCL	4.34	2.74	5.60	95% KM (Percentile Bootstrap) UCL
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	19	11	4.69	4.50	7.50	3.43	2.13	4.52	95% KM (Percentile Bootstrap) UCL	4.69	2.02	5.80	95% KM (t) UCL
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	19	9	6.24	6.00	9.10	5.06	1.57	5.73	95% KM (t) UCL	6.24	1.60	7.23	95% KM (t) UCL
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	19	9	4.00	3.90	6.20	3.26	1.01	3.69	95% KM (t) UCL	4.00	1.05	4.65	95% KM (t) UCL
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	19	5	3.40	3.20	4.90	2.74	0.571	2.99	95% KM (t) UCL	3.40	0.800	4.09	95% KM (t) UCL
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	19	16	5.63	3.75	20.0	4.96	4.73	7.03	95% KM (BCA) UCL	5.40	4.63	7.34	95% KM (BCA) UCL
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	19	15	5.16	4.00	12.0	4.60	2.78	5.75	95% KM (Percentile Bootstrap) UCL	4.97	2.73	6.18	95% KM (Percentile Bootstrap) UCL
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	19	9	3.86	3.60	5.70	2.98	1.15	3.47	95% KM (t) UCL	3.86	1.15	4.56	95% KM (t) UCL
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	19	16	5.63	4.05	17.0	5.02	4.13	6.70	95% KM (BCA) UCL	5.34	4.02	7.17	95% KM (BCA) UCL
Sediment	SVOCs	Total	Total HPAHs (KM, capped)	ug/kg	Dry	19	16	-	-	73.9	34.8	20.9	43.0	95% KM (BCA) UCL	42.1	21.9	50.7	95% KM (BCA) UCL
Sediment	SVOCs	Total	Total PAHs (KM, capped)	ug/kg	Dry	19	16	-	-	83.4	39.1	23.5	48.9	95% KM (BCA) UCL	55.3	26.1	67.0	95% KM (t) UCL
Crayfish	Metals	Total	Aluminum	mg/kg	Wet	17	17	105	100	157	-	-	116	95% Approximate Gamma UCL	-	-	116	95% Approximate Gamma UCL
Crayfish	Metals	Total	Antimony	mg/kg	Wet	17	17	0.0288	0.0180	0.133	-	-	0.0420	95% H-UCL	-	-	0.0420	95% H-UCL
Crayfish	Metals	Total	Arsenic	mg/kg	Wet	17	17	0.479	0.460	0.680	-	-	0.519	95% Approximate Gamma UCL	-	-	0.519	95% Approximate Gamma UCL
Crayfish	Metals	Total	Barium	mg/kg	Wet	17	17	65.4	64.8	84.3	-	-	69.5	95% Student's-t UCL	-	-	69.5	95% Student's-t UCL
Crayfish	Metals	Total	Beryllium	mg/kg	Wet	17	17	0.00316	0.00330	0.00410	-	-	0.00342	95% Student's-t UCL	-	-	0.00342	95% Student's-t UCL
Crayfish	Metals	Total	Cadmium	mg/kg	Wet	17	17	0.107	0.0870	0.210	-	-	0.128	95% Approximate Gamma UCL	-	-	0.128	95% Approximate Gamma UCL
Crayfish	Metals	Total	Chromium	mg/kg	Wet	17	17	0.659	0.700	1.20	-	-	0.764	95% Student's-t UCL	-	-	0.764	95% Student's-t UCL
Crayfish	Metals	Total	Cobalt	mg/kg	Wet	17	17	0.233	0.236	0.262	-	-	0.241	95% Student's-t UCL	-	-	0.241	95% Student's-t UCL
Crayfish	Metals	Total	Copper	mg/kg	Wet	17	17	19.6	18.9	36.0	-	-	22.1	95% Student's-t UCL	-	-	22.1	95% Student's-t UCL
Crayfish	Metals	Total	Lead	mg/kg	Wet	17	17	0.603	0.566	2.66	-	-	0.925	95% Approximate Gamma UCL	-	-	0.925	95% Approximate Gamma UCL
Crayfish	Metals	Total	Mercury	mg/kg	Wet	17	17	0.0221	0.0215	0.0315	-	-	0.0237	95% Student's-t UCL	-	-	0.0237	95% Student's-t UCL
Crayfish	Metals	Total	Methyl Mercury	mg/kg	Wet	17	17	0.0311	0.0300	0.0400	-	-	0.0329	95% Student's-t UCL	-	-	0.0329	95% Student's-t UCL
Crayfish	Metals	Total	Nickel	mg/kg	Wet	17	17	4.75	4.72	5.35	-	-	4.88	95% Student's-t UCL	-	-	4.88	95% Student's-t UCL
Crayfish	Metals	Total	Thallium	mg/kg	Wet	17	17	0.0184	0.0167	0.0292	-	-	0.0203	95% Student's-t UCL	-	-	0.0203	95% Student's-t UCL
Crayfish	Metals	Total	Vanadium	mg/kg	Wet	17	17	0.435	0.400	0.600	-	-	0.465	95% Student's-t UCL	-	-	0.465	95% Student's-t UCL
Crayfish	Metals	Total	Zinc	mg/kg	Wet	17	17	20.5	20.8	23.2	-	-	21.2	95% Student's-t UCL	-	-	21.2	95% Student's-t UCL
Crayfish	SVOCs	Total	Acenaphthene	ug/kg	Wet	15	7	0.170	0.140	0.260	0.138	0.0455	0.160	95% KM (t) UCL	0.170	0.0501	0.206	95% KM (t) UCL
Crayfish	SVOCs	Total	Anthracene	ug/kg	Wet	15	4	0.111	0.108	0.160	0.0802	0.0263	0.094	95% KM (t) UCL	0.111	0.0361	0.148	95% KM (t) UCL
Crayfish	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	15	10	0.269	0.265	0.350	0.256	0.0324	0.273	95% KM (Percentile Bootstrap) UCL	0.269	0.0327	0.288	95% KM (t) UCL
Crayfish	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	15	3	0.150	0.160	0.170	0.126	0.0154	0.135	95% KM (t) UCL	0.150	0.0216	0.177	95% KM (t) UCL
Crayfish	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	15	7	0.143	0.110	0.240	0.118	0.0454	0.140	95% KM (t) UCL	0.143	0.0567	0.184	95% KM (t) UCL
Crayfish	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	15	4	0.205	0.165	0.390	0.126	0.0740	0.165	95% KM (t) UCL	0.205	0.111	0.317	95% KM (t) UCL
Crayfish	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	15	7	0.116	0.110	0.160	0.0999	0.0232	0.111	95% KM (t) UCL	0.116	0.0260	0.135	95% KM (t) UCL
Crayfish	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	15	4	83.0	77.5	110	71.3	11.6	77.4	95% KM (t) UCL	83.0	17.8	101	95% KM (t) UCL
Crayfish	SVOCs	Total	Chrysene	ug/kg	Wet	15	8	0.143	0.115	0.310	0.115	0.0610	0.144	95% KM (t) UCL	0.143	0.0722	0.191	95% KM (t) UCL
Crayfish	SVOCs	Total	Fluoranthene	ug/kg	Wet	15	15	0.349	0.300	0.750	-	-	0.426	95% Approximate Gamma UCL	-	-	0.426	95% Approximate Gamma UCL
Crayfish	SVOCs	Total	Fluorene	ug/kg	Wet	15	5	0.170	0.160	0.210	0.157	0.0162	0.165	95% KM (t) UCL	0.170	0.0228	0.190	95% KM (t) UCL
Crayfish	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	15	3	0.173	0.180	0.180	0.163	0.00680	0.166	95% KM (t) UCL	0.173	0.00943	0.185	95% KM (t) UCL
Crayfish	SVOCs	Total	Phenanthrene	ug/kg	Wet	15	10	0.550	0.490	0.860	0.507	0.136	0.576	95% KM (BCA) UCL	0.512	0.133	0.575	95% KM (BCA) UCL
Crayfish	SVOCs	Total	Pyrene	ug/kg	Wet	15	15	0.361	0.290	1.20	-	-	0.468	95% Approximate Gamma UCL	-	-	0.468	95% Approximate Gamma UCL
Smallmouth Bass	Metals	Total	Aluminum	mg/kg	Wet	19	19	5.05	4.00	15.5	-	-	7.11	95% Approximate Gamma UCL	-	-	7.11	95% Approximate Gamma UCL
Smallmouth Bass	Metals	Total	Arsenic	mg/kg	Wet	19	19	0.412	0.410	0.700	-	-	0.472	95% Student's-t UCL	-	-	0.472	95% Student's-t UCL
Smallmouth Bass	Metals	Total	Barium	mg/kg	Wet	19	19	1.51	1.34	2.64	-	-	1.73	95% Student's-t UCL	-	-	1.73	95% Student's-t UCL
Smallmouth Bass	Metals	Total	Beryllium	mg/kg	Wet	19	4	0.000600	0.000600	0.000700	0.000521	0.0000521	0.000545	95% KM (t) UCL	0.000600	0.0000707	0.000671	95% KM (t) UCL
Smallmouth Bass	Metals	Total	Cadmium	mg/kg	Wet	19	19	0.00974	0.00700	0.0280	-	-	0.0126	95% H-UCL	-	-	0.0126	95% H-UCL
Smallmouth Bass	Metals	Total	Chromium	mg/kg	Wet	19	5	0.362	0.270	0.860	0.235	0.150	0.302	95% KM (t) UCL	0.241	0.149	0.307	95% KM (t) UCL
Smallmouth Bass	Metals	Total	Cobalt	mg/kg	Wet	19	19	0.0548	0.0553	0.0758	-	-	0.0579	95% Student's-t UCL	-	-	0.0579	95% Student's-t UCL
Smallmouth Bass	Metals	Total	Copper	mg/kg	Wet	19	19	0.664	0.588	1.42	-	-	0.764	95% Approximate Gamma UCL	-	-	0.764	95% Approximate Gamma UCL
Smallmouth Bass	Metals	Total	Lead	mg/kg	Wet	19	19	0.0109	0.00900	0.0360	-	-	0.0142	95% Approximate Gamma UCL	-	-	0.0142	95% Approximate Gamma UCL
Smallmouth Bass	Metals	Total	Mercury	mg/kg	Wet	19	19	0.265	0.283	0.512	-	-	0.317	95% Student's-t UCL	-	-	0.317	95% Student's-t UCL
Smallmouth Bass	Metals	Total	Nickel	mg/kg	Wet	19	19	0.298	0.295	0.399	-	-	0.319	95% Student's-t UCL	-	-	0.319	95% Student's-t UCL
Smallmouth Bass	Metals	Total	Thallium	mg/kg	Wet	19	19	0.0148	0.0148	0.0215	-	-	0.0162	95% Student's-t UCL	-	-	0.0162	95% Student's-t UCL
Smallmouth Bass	Metals	Total	Vanadium	mg/kg	Wet	19	19	0.0595	0.0500	0.130	-	-	0.0698	95% Approximate Gamma UCL	-	-	0.0698	95% Approximate Gamma UCL

Table I-18a
Statistical Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(3 of 4)

											Statistics - ND censored at the MDL				Statistics - ND censored at the MRL			
Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Smallmouth Bass	Metals	Total	Zinc	mg/kg	Wet	19	19	14.2	14.4	18.0	-	-	14.9	95% Student's-t UCL	-	-	14.9	95% Student's-t UCL
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	19	7	5,197	1,300	18,000	1,948	4,885	4,047	95% KM (t) UCL	1,948	4,885	4,047	95% KM (t) UCL
Smallmouth Bass	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	19	7	-	-	18,110	1,983	4,928	4,100	95% KM (t) UCL	2,062	5,094	4,251	95% KM (t) UCL
Smallmouth Bass	SVOCs	Total	Acenaphthene	ug/kg	Wet	19	16	0.608	0.300	1.60	0.537	0.517	1.07	95% KM (Chebyshev) UCL	0.554	0.506	1.08	95% KM (Chebyshev) UCL
Smallmouth Bass	SVOCs	Total	Anthracene	ug/kg	Wet	19	18	2.27	0.320	17.0	2.16	4.10	11.8	99% KM (Chebyshev) UCL	2.17	4.09	11.8	99% KM (Chebyshev) UCL
Smallmouth Bass	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	19	5	5.08	1.20	17.0	2.07	3.63	3.69	95% KM (t) UCL	2.08	3.63	3.69	95% KM (t) UCL
Smallmouth Bass	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	19	8	4.18	4.95	7.40	2.18	2.53	3.25	95% KM (t) UCL	2.18	2.53	3.25	95% KM (t) UCL
Smallmouth Bass	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	19	6	3.20	4.05	4.40	1.09	1.69	4.21	95% KM (BCA) UCL	1.09	1.69	4.21	95% KM (BCA) UCL
Smallmouth Bass	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	19	6	2.29	2.70	3.30	1.01	1.04	1.46	95% KM (t) UCL	1.01	1.04	1.46	95% KM (t) UCL
Smallmouth Bass	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	19	9	4.22	3.80	7.70	2.06	2.91	3.29	95% KM (t) UCL	2.06	2.91	3.29	95% KM (t) UCL
Smallmouth Bass	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	19	7	338	130	1,600	186	344	338	95% KM (t) UCL	203	340	354	95% KM (t) UCL
Smallmouth Bass	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	19	2	236	236	440	54.4	90.9	239	97.5% KM (Chebyshev) UCL	54.4	90.9	239	97.5% KM (Chebyshev) UCL
Smallmouth Bass	SVOCs	Total	Chrysene	ug/kg	Wet	19	8	3.49	3.40	10.0	1.76	2.47	2.81	95% KM (t) UCL	1.76	2.47	2.81	95% KM (t) UCL
Smallmouth Bass	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	19	6	2.77	3.40	4.10	1.16	1.30	1.72	95% KM (t) UCL	1.16	1.30	1.72	95% KM (t) UCL
Smallmouth Bass	SVOCs	Total	Fluoranthene	ug/kg	Wet	19	10	3.22	2.30	6.50	1.93	2.27	3.03	95% KM (BCA) UCL	1.93	2.27	3.04	95% KM (BCA) UCL
Smallmouth Bass	SVOCs	Total	Fluorene	ug/kg	Wet	19	17	1.31	0.670	4.70	1.20	1.28	2.52	95% KM (Chebyshev) UCL	1.21	1.28	2.53	95% KM (Chebyshev) UCL
Smallmouth Bass	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	19	7	3.89	5.30	6.10	1.88	2.06	2.76	95% KM (t) UCL	1.88	2.06	2.76	95% KM (t) UCL
Smallmouth Bass	SVOCs	Total	Phenanthrene	ug/kg	Wet	19	19	2.09	1.30	5.70	-	-	2.88	95% Approximate Gamma UCL	-	-	2.88	95% Approximate Gamma UCL
Smallmouth Bass	SVOCs	Total	Pyrene	ug/kg	Wet	19	9	2.74	0.720	7.20	1.35	2.24	2.30	95% KM (t) UCL	1.37	2.24	2.31	95% KM (t) UCL
Sculpin	Metals	Total	Arsenic	mg/kg	Wet	17	17	0.312	0.289	0.435	-	-	0.344	95% Student's-t UCL	-	-	0.344	95% Student's-t UCL
Sculpin	Metals	Total	Cadmium	mg/kg	Wet	17	17	0.0201	0.0183	0.0453	-	-	0.0243	95% Approximate Gamma UCL	-	-	0.0243	95% Approximate Gamma UCL
Sculpin	Metals	Total	Lead	mg/kg	Wet	17	16	0.0787	0.0643	0.306	0.0759	0.0640	0.103	95% KM (BCA) UCL	0.0759	0.0640	0.104	95% KM (BCA) UCL
Sculpin	Metals	Total	Mercury	mg/kg	Wet	17	17	0.152	0.131	0.308	-	-	0.187	95% Student's-t UCL	-	-	0.187	95% Student's-t UCL
Sculpin	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	17	3	767	470	1,700	242	373	436	95% KM (t) UCL	242	373	436	95% KM (t) UCL
Sculpin	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	17	3	-	-	1,700	242	373	436	95% KM (t) UCL	242	373	436	95% KM (t) UCL
Clam	Metals	Total	Aluminum	mg/kg	Wet	19	19	32.6	21.7	83.2	-	-	44.7	95% Approximate Gamma UCL	-	-	44.7	95% Approximate Gamma UCL
Clam	Metals	Total	Antimony	mg/kg	Wet	19	5	0.00360	0.00300	0.00700	0.00247	0.00119	0.00302	95% KM (t) UCL	0.00360	0.00185	0.00521	95% KM (t) UCL
Clam	Metals	Total	Arsenic	mg/kg	Wet	19	19	2.22	2.26	2.49	-	-	2.31	95% Student's-t UCL	-	-	2.31	95% Student's-t UCL
Clam	Metals	Total	Barium	mg/kg	Wet	19	19	1.87	1.76	3.05	-	-	2.05	95% Student's-t UCL	-	-	2.05	95% Student's-t UCL
Clam	Metals	Total	Beryllium	mg/kg	Wet	19	19	0.00188	0.00170	0.00380	-	-	0.00218	95% Student's-t UCL	-	-	0.00218	95% Student's-t UCL
Clam	Metals	Total	Cadmium	mg/kg	Wet	19	19	0.363	0.366	0.461	-	-	0.382	95% Student's-t UCL	-	-	0.382	95% Student's-t UCL
Clam	Metals	Total	Chromium	mg/kg	Wet	19	19	0.595	0.600	0.900	-	-	0.670	95% Student's-t UCL	-	-	0.670	95% Student's-t UCL
Clam	Metals	Total	Cobalt	mg/kg	Wet	19	19	0.106	0.110	0.148	-	-	0.117	95% Student's-t UCL	-	-	0.117	95% Student's-t UCL
Clam	Metals	Total	Copper	mg/kg	Wet	19	19	9.15	9.36	11.4	-	-	9.56	95% Student's-t UCL	-	-	9.56	95% Student's-t UCL
Clam	Metals	Total	Lead	mg/kg	Wet	19	19	0.0431	0.0350	0.0890	-	-	0.0520	95% H-UCL	-	-	0.0520	95% H-UCL
Clam	Metals	Total	Mercury	mg/kg	Wet	19	19	0.0111	0.00880	0.0341	-	-	0.0137	95% Modified-t UCL	-	-	0.0137	95% Modified-t UCL
Clam	Metals	Total	Methyl Mercury	mg/kg	Wet	19	19	0.00475	0.00480	0.00650	-	-	0.00507	95% Student's-t UCL	-	-	0.00507	95% Student's-t UCL
Clam	Metals	Total	Nickel	mg/kg	Wet	19	19	0.227	0.238	0.348	-	-	0.261	95% Student's-t UCL	-	-	0.261	95% Student's-t UCL
Clam	Metals	Total	Thallium	mg/kg	Wet	19	19	0.00692	0.00660	0.0119	-	-	0.00768	95% Approximate Gamma UCL	-	-	0.00768	95% Approximate Gamma UCL
Clam	Metals	Total	Vanadium	mg/kg	Wet	19	19	0.177	0.141	0.426	-	-	0.221	95% Approximate Gamma UCL	-	-	0.221	95% Approximate Gamma UCL
Clam	Metals	Total	Zinc	mg/kg	Wet	19	19	21.4	20.8	26.5	-	-	22.5	95% Student's-t UCL	-	-	22.5	95% Student's-t UCL
Clam	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	19	9	33.9	22.0	120	27.7	21.9	37.0	95% KM (t) UCL	27.7	21.9	37.0	95% KM (t) UCL
Clam	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	19	9	-	-	120	27.7	21.9	37.0	95% KM (t) UCL	27.7	21.9	37.0	95% KM (t) UCL
Clam	SVOCs	Total	Acenaphthene	ug/kg	Wet	19	18	1.07	0.955	4.10	1.03	0.755	1.81	95% KM (Chebyshev) UCL	1.03	0.754	1.81	95% KM (Chebyshev) UCL
Clam	SVOCs	Total	Anthracene	ug/kg	Wet	19	15	0.973	0.960	2.30	0.827	0.499	1.06	95% KM (Percentile Bootstrap) UCL	0.905	0.474	1.12	95% KM (Percentile Bootstrap) UCL
Clam	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	19	8	1.07	0.980	2.10	0.829	0.452	1.06	95% KM (t) UCL	0.891	0.462	1.14	95% KM (t) UCL
Clam	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	19	3	0.467	0.440	0.580	0.396	0.0496	0.423	95% KM (t) UCL	0.429	0.0605	0.484	95% KM (t) UCL
Clam	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	19	9	0.663	0.640	0.950	0.533	0.170	0.607	95% KM (t) UCL	0.624	0.164	0.716	95% KM (t) UCL
Clam	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	19	8	0.205	0.185	0.360	0.174	0.0949	0.227	95% KM (t) UCL	0.205	0.0937	0.266	95% KM (t) UCL
Clam	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	19	2	0.205	0.205	0.250	0.168	0.0259	0.187	95% KM (t) UCL	0.205	0.0450	0.283	95% KM (t) UCL
Clam	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	19	19	393	150	890	-	-	717	95% Chebyshev (Mean, Sd) UCL	-	-	717	95% Chebyshev (Mean, Sd) UCL
Clam	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	19	3	14.0	14.0	15.0	13.2	0.488	13.4	95% KM (t) UCL	14.0	0.816	15.0	95% KM (t) UCL
Clam	SVOCs	Total	Chrysene	ug/kg	Wet	19	8	3.04	3.00	4.00	2.55	0.724	2.91	95% KM (t) UCL	2.55	0.724	2.91	95% KM (t) UCL
Clam	SVOCs	Total	Fluoranthene	ug/kg	Wet	19	14	11.1	11.0	16.0	10.5	2.54	11.7	95% KM (t) UCL	10.5	2.54	11.7	95% KM (Percentile Bootstrap) UCL
Clam	SVOCs	Total	Fluorene	ug/kg	Wet	19	19	2.25	2.30	3.80	-	-	2.51	95% Student's-t UCL	-	-	2.51	95% Student's-t UCL
Clam	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	19	6	0.579	0.205	2.50	0.240	0.540	0.476	95% KM (t) UCL	0.316	0.532	0.566	95% KM (t) UCL
Clam	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	19	10	15.9	14.0	31.0	12.4	6.37	15.2	95% KM (Percentile Bootstrap) UCL	15.9	7.24	20.0	95% KM (t) UCL
Clam	SVOCs	Total	Phenanthrene	ug/kg	Wet	19	19	9.45	9.60	15.0	-	-	10.5	95% Student's-t UCL	-	-	10.5	95% Student's-t UCL

Table I-18a
Statistical Summary for Random Forebay Samples
Bradford Island - River Operable Unit
(4 of 4)

											Statistics - ND censored at the MDL				Statistics - ND censored at the MRL			
Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Clam	SVOCs	Total	Pyrene	ug/kg	Wet	19	7	2.96	2.40	6.30	2.23	1.15	2.76	95% KM (t) UCL	2.26	1.14	2.80	95% KM (t) UCL

Notes
Only those analytes with at least 2 detected results are shown on this table.
If not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.

% = percent
Dry = Dry weight
KM = Kaplan-Meier
MDL = method detection limit
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
MRL = method reporting limit
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
PCB = polychlorinated biphenyl
SD = standard deviation
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
UCL = upper confidence limit
Wet = Wet Weight

Table I-18b
Statistical Summary for Random Forebay PCB Congener Data
Bradford Island - River Operable Unit
(1 of 3)

											Censoring EMPCs at Reported Value and NDs at the RDL			
Matrix	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Number of Detections (not ND or EMPC)	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Surface Water	Column	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet	5	0	-	-	-	-	-	-	-
Surface Water	Filter	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet	5	3	0.0510	0.0510	0.0560	0.0490	0.00400	-	-
Surface Water	C+F	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet	5	3	0.0973	-	0.133	0.0901	0.0215	-	-
Surface Water	Column	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/L	Wet	5	5	0.132	0.119	0.163	-	-	-	-
Surface Water	Filter	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/L	Wet	5	5	0.330	0.339	0.421	-	-	-	-
Surface Water	C+F	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/L	Wet	5	5	0.463	0.486	0.540	-	-	-	-
Surface Water	Column	118	2,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	5	0.399	0.361	0.499	-	-	-	-
Surface Water	Filter	118	2,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	5	0.886	0.947	1.07	-	-	-	-
Surface Water	C+F	118	2,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5	5	1.28	1.27	1.57	-	-	-	-
Surface Water	Column	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet	5	1	0.0360	0.0360	0.0360	-	-	-	-
Surface Water	Filter	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet	5	5	0.195	0.110	0.359	-	-	-	-
Surface Water	C+F	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet	5	5	0.222	0.138	0.382	-	-	-	-
Surface Water	Column	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	3	0.0123	0.0130	0.0140	0.0116	0.00174	-	-
Surface Water	Filter	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	5	0.0826	0.0490	0.148	-	-	-	-
Surface Water	C+F	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	5	5	0.0950	0.0630	0.158	-	-	-	-
Surface Water	Column		Total PCBs As Congeners (KM, capped)	pg/L	Wet	5	5	-	-	154	-	-	-	-
Surface Water	Filter		Total PCBs As Congeners (KM, capped)	pg/L	Wet	5	5	-	-	61.2	-	-	-	-
Surface Water	C+F		Total PCBs As Congeners (KM, capped)	pg/L	Wet	5	5	164	164	209	-	-	-	-
Sediment	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Dry	19	19	1.55	1.32	7.09	-	-	2.23	95% Approximate Gamma UCL
Sediment	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Dry	19	19	74.1	12.5	1,080	-	-	318	95% Chebyshev (Mean, Sd) UCL
Sediment	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Dry	19	15	5.06	0.666	60.3	4.07	13.3	23.8	97.5% KM (Chebyshev) UCL
Sediment	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	19	19	185	38.4	2,650	-	-	783	95% Chebyshev (Mean, Sd) UCL
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	19	11	4.16	0.833	36.3	2.62	7.95	14.6	97.5% KM (Chebyshev) UCL
Sediment	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	19	3	0.200	0.189	0.238	0.179	0.0165	0.188	95% KM (t) UCL
Sediment	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Dry	19	18	27.2	5.63	380	25.8	83.6	149	97.5% KM (Chebyshev) UCL
Sediment	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	19	16	9.74	2.71	113	8.27	24.7	44.9	97.5% KM (Chebyshev) UCL
Sediment	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Dry	19	9	1.36	0.452	9.01	0.720	1.97	1.69	95% KM (BCA) UCL
Sediment	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Dry	19	19	-	-	29.7	2.27	6.67	3.59	95% Chebyshev (MVUE) UCL
Crayfish	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	15	15	5.96	4.12	20.7	-	-	8.67	95% Approximate Gamma UCL
Crayfish	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	15	4	0.557	0.348	1.32	0.306	0.278	0.452	95% KM (t) UCL
Crayfish	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	15	12	33.5	13.0	134	28.7	36.7	90.8	97.5% KM (Chebyshev) UCL
Crayfish	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	15	14	123	6.36	804	115	218	697	99% KM (Chebyshev) UCL
Crayfish	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	15	15	2,038	173	14,000	-	-	11,907	99% Chebyshev (Mean, Sd) UCL
Crayfish	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	15	14	75.0	5.44	460	70.2	128	412	99% KM (Chebyshev) UCL
Crayfish	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	15	7	1.96	0.469	7.83	1.11	1.97	2.08	95% KM (t) UCL
Crayfish	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	15	15	593	26.3	3,910	-	-	3,532	99% Chebyshev (Mean, Sd) UCL
Crayfish	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	15	15	254	21.5	1,530	-	-	1,486	99% Chebyshev (Mean, Sd) UCL
Crayfish	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	15	12	18.6	2.14	82.1	15.1	25.8	84.4	99% KM (Chebyshev) UCL
Crayfish	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	15	15	-	-	42.6	6.74	11.6	36.5	99% Chebyshev (Mean, Sd) UCL

Table I-18b
Statistical Summary for Random Forebay PCB Congener Data
Bradford Island - River Operable Unit
(2 of 3)

											Censoring EMPCs at Reported Value and NDs at the RDL			
Matrix	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Number of Detections (not ND or EMPC)	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Smallmouth Bass	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	19	19	774	77.2	8,950	-	-	5,640	99% Chebyshev (Mean, Sd) UCL
Smallmouth Bass	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	19	17	77.7	4.22	1,190	70.0	264	691	99% KM (Chebyshev) UCL
Smallmouth Bass	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	19	19	129,237	3,910	1,300,000	-	-	887,209	99% Chebyshev (Mean, Sd) UCL
Smallmouth Bass	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	19	19	9,949	337	89,800	-	-	65,614	99% Chebyshev (Mean, Sd) UCL
Smallmouth Bass	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	19	19	347,222	10,800	3,270,000	-	-	2,314,267	99% Chebyshev (Mean, Sd) UCL
Smallmouth Bass	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	19	19	5,690	217	55,300	-	-	38,710	99% Chebyshev (Mean, Sd) UCL
Smallmouth Bass	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	19	18	267	15.1	3,030	254	710	1,922	99% KM (Chebyshev) UCL
Smallmouth Bass	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	19	19	60,870	2,890	486,000	-	-	374,934	99% Chebyshev (Mean, Sd) UCL
Smallmouth Bass	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	19	19	16,980	961	140,000	-	-	107,559	99% Chebyshev (Mean, Sd) UCL
Smallmouth Bass	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	19	19	1,318	113	10,100	-	-	8,145	99% Chebyshev (Mean, Sd) UCL
Smallmouth Bass	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	19	19	-	-	26,505	2941	7173	19,314	99% Chebyshev (Mean, Sd) UCL
Sculpin	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	17	17	49.6	15.4	443	-	-	160	95% Chebyshev (Mean, Sd) UCL
Sculpin	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	17	17	20,177	752	269,000	-	-	176,793	99% Chebyshev (Mean, Sd) UCL
Sculpin	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	17	1,631	73.4	19,900	-	-	13,263	99% Chebyshev (Mean, Sd) UCL
Sculpin	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	17	59,809	3,750	757,000	-	-	500,123	99% Chebyshev (Mean, Sd) UCL
Sculpin	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	17	16	950	44.1	11,800	895	2,758	7,770	99% KM (Chebyshev) UCL
Sculpin	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	16	10.2	5.97	54.0	10.2	12.9	24.7	95% KM (Chebyshev) UCL
Sculpin	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	17	17	10,243	428	118,000	-	-	79,753	99% Chebyshev (Mean, Sd) UCL
Sculpin	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	17	17	2,507	165	30,800	-	-	20,433	99% Chebyshev (Mean, Sd) UCL
Sculpin	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	17	17	219	20.5	2,480	-	-	1,667	99% Chebyshev (Mean, Sd) UCL
Sculpin	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	17	17	-	-	4773	397	1154	3180	99% Chebyshev (Mean, Sd) UCL
Clam	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	17	17	38.1	35.9	69.0	-	-	42.1	95% Approximate Gamma UCL
Clam	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	17	4	2.20	2.20	2.46	2.01	0.163	2.09	95% KM (t) UCL
Clam	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	17	17	920	455	6,200	-	-	2,406	95% Chebyshev (Mean, Sd) UCL
Clam	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	17	62.7	27.4	445	-	-	171	95% Chebyshev (Mean, Sd) UCL
Clam	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	17	8,331	2,730	64,700	-	-	24,313	95% Chebyshev (Mean, Sd) UCL
Clam	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	17	17	157	52.0	1,150	-	-	441	95% Chebyshev (Mean, Sd) UCL
Clam	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	17	4.86	4.57	11.0	-	-	5.65	95% Modified-t UCL
Clam	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	17	17	461	158	3,610	-	-	1,348	95% Chebyshev (Mean, Sd) UCL
Clam	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	17	17	562	201	3,800	-	-	1,514	95% Chebyshev (Mean, Sd) UCL
Clam	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	17	17	2.50	1.81	10.1	-	-	3.44	95% Modified-t UCL
Clam	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	17	17	-	-	312	55.3	68.9	128	95% Chebyshev (Mean, Sd) UCL

Notes
Only those analytes with at least 2 detected results are shown on this table.
If not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.

% = percent
Dry = Dry weight
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
KM = Kaplan-Meier

Table I-18b
Statistical Summary for Random Forebay PCB Congener Data
Bradford Island - River Operable Unit
(3 of 3)

											Censoring EMPCs at Reported Value and NDs at the RDL			
Matrix	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Number of Detections (not ND or EMPC)	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type

ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
pg/kg = picrograms per kilogram
pg/L = picrograms per liter
SD = standard deviation
SVOC = semi-volatile organic carbon
RDL = reported detection limit
UCL = upper confidence limit
Wet = Wet Weight

Table I-19a
Statistical Summary for Downstream Samples
Bradford Island - River Operable Unit
(1 of 1)

											Statistics - ND censored at the MDL				Statistics - ND censored at the MRL			
Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Sediment	Metals	Total	Aluminum	mg/kg	Dry	6	6	15,567	14,950	21,600	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Antimony	mg/kg	Dry	6	6	0.188	0.175	0.400	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Arsenic	mg/kg	Dry	6	6	3.97	3.49	5.84	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Barium	mg/kg	Dry	6	6	132	132	172	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Beryllium	mg/kg	Dry	6	6	0.384	0.372	0.513	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Cadmium	mg/kg	Dry	6	6	0.362	0.299	0.791	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Chromium	mg/kg	Dry	6	6	22.3	21.5	29.9	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Cobalt	mg/kg	Dry	6	6	8.70	8.30	11.5	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Copper	mg/kg	Dry	6	6	17.6	17.3	24.1	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Lead	mg/kg	Dry	6	6	9.44	8.75	12.7	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Mercury	mg/kg	Dry	6	6	0.0630	0.0530	0.136	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Nickel	mg/kg	Dry	6	6	13.6	13.4	15.2	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Thallium	mg/kg	Dry	6	5	0.189	0.178	0.234	0.185	0.0265	-	-	0.185	0.0265	-	-
Sediment	Metals	Total	Vanadium	mg/kg	Dry	6	6	54.0	48.6	73.5	-	-	-	-	-	-	-	-
Sediment	Metals	Total	Zinc	mg/kg	Dry	6	6	82.8	75.1	117	-	-	-	-	-	-	-	-
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	6	6	12.8	8.45	25.0	-	-	-	-	-	-	-	-
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	6	2	66.7	66.7	130	24.5	47.2	-	-	24.5	47.2	-	-
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	6	3	2.47	2.70	3.10	2.03	0.624	-	-	2.47	0.634	-	-
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	6	4	3.98	4.40	4.90	3.38	1.22	-	-	3.98	1.08	-	-
Sediment	SVOCs	Total	Total LPAHs	ug/kg	Dry	6	4	-	-	10.7	8.02	1.87	-	-	28.1	2.41	-	-
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	6	6	5.35	3.50	12.0	-	-	-	-	-	-	-	-
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	6	5	7.14	4.50	14.0	6.27	4.61	-	-	6.54	4.41	-	-
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	6	4	8.38	7.10	16.0	6.68	4.74	-	-	6.88	4.62	-	-
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	6	3	5.13	5.80	6.80	3.97	1.68	-	-	5.13	1.70	-	-
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	6	2	5.35	5.35	6.50	4.58	0.857	-	-	5.35	1.15	-	-
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	6	5	7.22	3.50	18.0	6.28	5.89	-	-	6.77	5.73	-	-
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	6	5	11.1	6.20	22.0	9.72	8.08	-	-	9.98	7.89	-	-
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	6	3	5.77	6.30	8.20	4.28	2.17	-	-	5.77	2.24	-	-
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	6	6	9.40	5.50	21.0	-	-	-	-	-	-	-	-
Sediment	SVOCs	Total	Total HPAHs	ug/kg	Dry	6	6	-	-	127	-	-	-	-	-	-	-	-
Sediment	SVOCs	Total	Total PAHs	ug/kg	Dry	6	6	-	-	137	-	-	-	-	-	-	-	-

Notes
Only those analytes with at least 2 detected results are shown on this table.
If not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.

% = percent
Dry = Dry weight
KM = Kaplan-Meier
MDL = method detection limit
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
MRL = method reporting limit
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
SD = standard deviation
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
UCL = upper confidence limit
Wet = Wet Weight

Table I-19b
Statistical Summary for Downstream PCB Congener Data
Bradford Island - River Operable Unit
(1 of 1)

											Censoring EMPCs at Reported Value and NDs at the RDL			
Matrix	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Number of Detections (not ND or EMPC)	Mean of Detects (not ND or EMPC)	Median of Detects (not ND or EMPC)	Maximum Detected Value	KM-Mean	KM-SD	Final 95% UCL	UCL Type
Sediment	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Dry	6	4	1.17	1.09	2.01	0.936	0.627	-	-
Sediment	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Dry	6	6	7.57	5.26	19.7	-	-	-	-
Sediment	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Dry	6	5	0.509	0.383	0.957	0.464	0.261	-	-
Sediment	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	6	6	16.6	12.1	45.6	-	-	-	-
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	6	5	0.400	0.271	0.874	0.355	0.263	-	-
Sediment	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Dry	6	4	3.18	2.36	6.25	2.70	1.64	-	-
Sediment	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	6	6	0.996	0.731	2.61	-	-	-	-
Sediment	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Dry	6	4	0.272	0.197	0.596	0.214	0.180	-	-
Sediment	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Dry	6	6	-	-	0.917	-	-	-	-

Notes
Only those analytes with at least 2 detected results are shown on this table.
If not all samples were detected results (i.e., detection rate = <100%), the mean and standard deviation were estimated by the Kaplan-Meier method.

% = percent
Dry = Dry weight
EMPC = The analyte was not positively identified; the associated
numerical value is the Estimated Maximum Potential Concentration.
KM = Kaplan-Meier
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
pg/kg = picrograms per kilogram
SD = standard deviation
SVOC = semi-volatile organic carbon
RDL = reported detection limit
UCL = upper confidence limit
Wet = Wet Weight

Table I-20a
Statistical Summary for Random Reference Samples
Bradford Island - River Operable Unit
(1 of 5)

											Upper Prediction Limit (UPL)	
Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	Distribution	95% UPL
Sediment	Metals	Total	Aluminum	mg/kg	Dry	18	18	17,328	13,300	33,500	Lognormal	38,000
Sediment	Metals	Total	Antimony	mg/kg	Dry	18	18	0.264	0.255	0.520	Normal	0.427
Sediment	Metals	Total	Arsenic	mg/kg	Dry	18	18	4.19	3.76	6.04	Lognormal	5.86
Sediment	Metals	Total	Barium	mg/kg	Dry	18	18	167	135	312	Lognormal	315
Sediment	Metals	Total	Beryllium	mg/kg	Dry	18	18	0.437	0.354	0.748	Lognormal	0.847
Sediment	Metals	Total	Cadmium	mg/kg	Dry	18	18	0.476	0.473	0.748	Normal	0.674
Sediment	Metals	Total	Chromium	mg/kg	Dry	18	18	19.8	18.6	27.3	Normal	28.0
Sediment	Metals	Total	Cobalt	mg/kg	Dry	18	18	9.66	8.97	15.2	Normal	15.2
Sediment	Metals	Total	Copper	mg/kg	Dry	18	18	25.6	18.7	47.8	Gamma	55.6
Sediment	Metals	Total	Lead	mg/kg	Dry	18	18	11.6	11.4	15.1	Normal	14.5
Sediment	Metals	Total	Mercury	mg/kg	Dry	18	18	0.129	0.124	0.225	Normal	0.214
Sediment	Metals	Total	Nickel	mg/kg	Dry	18	18	14.6	13.9	25.6	Gamma	21.2
Sediment	Metals	Total	Thallium	mg/kg	Dry	18	18	0.244	0.234	0.360	Normal	0.354
Sediment	Metals	Total	Vanadium	mg/kg	Dry	18	18	45.0	42.3	76.9	Normal	70.6
Sediment	Metals	Total	Zinc	mg/kg	Dry	18	18	87.6	88.5	109	Normal	106
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	18	18	15.7	12.5	31.0	Gamma	31.7
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	18	13	48.9	41.0	100	Non-parametric	100
Sediment	PCB Aroclors	Total	Aroclor 1016	mg/kg	Dry	18	0	-	-	-	Non-parametric	13.0 / 13.0
Sediment	PCB Aroclors	Total	Aroclor 1221	mg/kg	Dry	18	0	-	-	-	Non-parametric	11.0 / 21.0
Sediment	PCB Aroclors	Total	Aroclor 1232	mg/kg	Dry	18	0	-	-	-	Non-parametric	12.0 / 12.0
Sediment	PCB Aroclors	Total	Aroclor 1242	mg/kg	Dry	18	0	-	-	-	Non-parametric	16.0 / 16.0
Sediment	PCB Aroclors	Total	Aroclor 1248	mg/kg	Dry	18	0	-	-	-	Non-parametric	1.80 / 11.0
Sediment	PCB Aroclors	Total	Aroclor 1254	mg/kg	Dry	18	0	-	-	-	Non-parametric	1.80 / 11.0
Sediment	PCB Aroclors	Total	Aroclor 1260	mg/kg	Dry	18	0	-	-	-	Non-parametric	1.80 / 11.0
Sediment	PCB Aroclors	Total	Aroclor 1262	mg/kg	Dry	18	0	-	-	-	Non-parametric	1.80 / 11.0
Sediment	PCB Aroclors	Total	Aroclor 1268	mg/kg	Dry	18	0	-	-	-	Non-parametric	1.80 / 11.0
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	18	18	15.1	7.15	110	Non-parametric	110
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	18	2	3.15	3.15	3.80	Non-parametric	3.80
Sediment	SVOCs	Total	Carbazole	mg/kg	Dry	18	0	-	-	-	Non-parametric	1.40 / 11.0
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	18	15	5.84	5.20	11.0	Non-parametric	11.0
Sediment	SVOCs	Total	Di-n-octyl Phthalate	mg/kg	Dry	18	0	-	-	-	Non-parametric	1.30 / 11.0
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	18	11	61.6	7.90	210	Non-parametric	210
Sediment	SVOCs	Total	Acenaphthene	mg/kg	Dry	18	0	-	-	-	Non-parametric	1.10 / 11.0
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	18	2	1.85	1.85	2.30	Non-parametric	2.30
Sediment	SVOCs	Total	Fluorene	mg/kg	Dry	18	0	-	-	-	Non-parametric	1.80 / 11.0
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	18	16	2.96	2.80	5.90	Non-parametric	5.90
Sediment	SVOCs	Total	Total LPAHs (KM, capped)	ug/kg	Dry	18	16	-	-	10.0	Non-parametric	10.0
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	18	14	3.27	2.95	10.0	Non-parametric	10.0
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	18	9	4.51	3.80	11.0	Non-parametric	11.0
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	18	13	5.80	4.80	17.0	Non-parametric	17.0
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	18	10	4.34	3.60	7.90	Non-parametric	7.90
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	18	1	-	-	5.00	Non-parametric	5.00
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	18	15	4.36	3.70	9.80	Non-parametric	9.80
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	mg/kg	Dry	18	0	-	-	-	Non-parametric	2.30 / 11.0
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	18	15	6.61	5.10	31.0	Non-parametric	31.0
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	18	9	4.20	3.20	8.80	Non-parametric	8.80

Table I-20a
Statistical Summary for Random Reference Samples
Bradford Island - River Operable Unit
(2 of 5)

											Upper Prediction Limit (UPL)	
Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	Distribution	95% UPL
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	18	18	5.02	4.05	23.0	Gamma	12.7
Sediment	SVOCs	Total	Total HPAHs (KM, capped)	ug/kg	Dry	18	18	-	-	125	Non-parametric	125
Sediment	SVOCs	Total	Total PAHs (KM, capped)	ug/kg	Dry	18	18	-	-	133	Non-parametric	133
Crayfish	Metals	Total	Aluminum	mg/kg	Wet	19	19	134	131	221	Normal	204
Crayfish	Metals	Total	Antimony	mg/kg	Wet	19	19	0.0153	0.0120	0.0390	Gamma	0.0327
Crayfish	Metals	Total	Arsenic	mg/kg	Wet	19	19	0.383	0.363	0.636	Gamma	0.535
Crayfish	Metals	Total	Barium	mg/kg	Wet	19	19	68.2	68.6	120	Normal	104
Crayfish	Metals	Total	Beryllium	mg/kg	Wet	19	19	0.00349	0.00330	0.00610	Gamma	0.00489
Crayfish	Metals	Total	Cadmium	mg/kg	Wet	19	19	0.0942	0.0840	0.201	Normal	0.164
Crayfish	Metals	Total	Chromium	mg/kg	Wet	19	18	0.491	0.500	1.23	Non-parametric	1.23
Crayfish	Metals	Total	Cobalt	mg/kg	Wet	19	19	0.331	0.339	0.439	Normal	0.434
Crayfish	Metals	Total	Copper	mg/kg	Wet	19	19	18.2	17.6	33.2	Lognormal	27.4
Crayfish	Metals	Total	Lead	mg/kg	Wet	19	19	0.413	0.317	1.55	Gamma	1.14
Crayfish	Metals	Total	Mercury	mg/kg	Wet	19	19	0.0176	0.0176	0.0246	Normal	0.0231
Crayfish	Metals	Total	Methyl Mercury	mg/kg	Wet	19	19	0.0269	0.0264	0.0367	Normal	0.0370
Crayfish	Metals	Total	Nickel	mg/kg	Wet	19	19	1.80	1.82	3.44	Normal	2.90
Crayfish	Metals	Total	Thallium	mg/kg	Wet	19	19	0.0216	0.0214	0.0370	Gamma	0.0319
Crayfish	Metals	Total	Vanadium	mg/kg	Wet	19	19	0.574	0.593	0.804	Normal	0.860
Crayfish	Metals	Total	Zinc	mg/kg	Wet	19	19	21.6	20.9	36.5	Non-parametric	36.5
Crayfish	PCB Aroclors	Total	Aroclor 1221	mg/kg	Dry	18	0	-	-	-	Non-parametric	5.20 / 40.0
Crayfish	PCB Aroclors	Total	Aroclor 1232	mg/kg	Dry	18	0	-	-	-	Non-parametric	4.60 / 20.0
Crayfish	PCB Aroclors	Total	Aroclor 1242	mg/kg	Dry	18	0	-	-	-	Non-parametric	4.40 / 20.0
Crayfish	PCB Aroclors	Total	Aroclor 1248	mg/kg	Dry	18	0	-	-	-	Non-parametric	1.10 / 20.0
Crayfish	PCB Aroclors	Total	Aroclor 1254	mg/kg	Dry	18	0	-	-	-	Non-parametric	3.60 / 20.0
Crayfish	PCB Aroclors	Total	Aroclor 1260	mg/kg	Dry	18	0	-	-	-	Non-parametric	3.80 / 20.0
Crayfish	PCB Aroclors	Total	Aroclor 1262	mg/kg	Dry	18	0	-	-	-	Non-parametric	5.00 / 20.0
Crayfish	PCB Aroclors	Total	Aroclor 1268	mg/kg	Dry	18	0	-	-	-	Non-parametric	4.00 / 20.0
Crayfish	SVOCs	Total	Acenaphthene	ug/kg	Wet	18	3	0.147	0.130	0.190	Non-parametric	0.190
Crayfish	SVOCs	Total	Anthracene	ug/kg	Wet	18	2	0.144	0.144	0.190	Non-parametric	0.190
Crayfish	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	18	2	0.355	0.355	0.400	Non-parametric	0.400
Crayfish	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	18	1	-	-	0.120	Non-parametric	0.120
Crayfish	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	18	4	0.150	0.143	0.230	Non-parametric	0.230
Crayfish	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	18	0	-	-	-	Non-parametric	0.500 / 0.500
Crayfish	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	18	4	0.136	0.136	0.200	Non-parametric	0.200
Crayfish	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	18	4	75.5	73.0	87.0	Non-parametric	87.0
Crayfish	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	18	3	21.3	18.0	31.0	Non-parametric	31.0
Crayfish	SVOCs	Total	Carbazole	ug/kg	Wet	18	0	-	-	-	Non-parametric	9.10 / 40.0
Crayfish	SVOCs	Total	Chrysene	ug/kg	Wet	18	5	0.170	0.120	0.270	Non-parametric	0.270
Crayfish	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	18	3	0.117	0.120	0.160	Non-parametric	0.160
Crayfish	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	18	0	-	-	-	Non-parametric	110 / 110
Crayfish	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	18	1	-	-	32.0	Non-parametric	32.0
Crayfish	SVOCs	Total	Fluoranthene	ug/kg	Wet	18	0	-	-	-	Non-parametric	0.500 / 0.500
Crayfish	SVOCs	Total	Fluorene	ug/kg	Wet	18	2	0.215	0.215	0.250	Non-parametric	0.250
Crayfish	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	18	3	0.132	0.130	0.180	Non-parametric	0.180
Crayfish	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	18	0	-	-	-	Non-parametric	7.70 / 40.0
Crayfish	SVOCs	Total	Phenanthrene	ug/kg	Wet	18	5	0.518	0.510	0.590	Non-parametric	0.590

Table I-20a
Statistical Summary for Random Reference Samples
Bradford Island - River Operable Unit
(3 of 5)

											Upper Prediction Limit (UPL)	
Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	Distribution	95% UPL
Crayfish	SVOCs	Total	Pyrene	ug/kg	Wet	18	0	-	-	-	Non-parametric	0.500 / 0.500
Smallmouth Bass	Metals	Total	Aluminum	mg/kg	Wet	19	19	2.50	1.55	10.1	Gamma	6.88
Smallmouth Bass	Metals	Total	Antimony	mg/kg	Wet	19	4	0.00850	0.00300	0.0250	Non-parametric	0.0250
Smallmouth Bass	Metals	Total	Arsenic	mg/kg	Wet	19	19	0.354	0.311	0.761	Gamma	0.641
Smallmouth Bass	Metals	Total	Barium	mg/kg	Wet	19	19	1.10	1.06	1.72	Normal	1.78
Smallmouth Bass	Metals	Total	Beryllium	mg/kg	Wet	19	0	-	-	-	Non-parametric	0.00200 / 0.00600
Smallmouth Bass	Metals	Total	Cadmium	mg/kg	Wet	19	19	0.0813	0.112	0.143	Non-parametric	0.143
Smallmouth Bass	Metals	Total	Chromium	mg/kg	Wet	19	12	0.684	0.0850	7.15	Non-parametric	7.15
Smallmouth Bass	Metals	Total	Cobalt	mg/kg	Wet	19	12	0.0608	0.0575	0.0838	Non-parametric	0.0838
Smallmouth Bass	Metals	Total	Copper	mg/kg	Wet	19	19	0.510	0.490	0.730	Normal	0.747
Smallmouth Bass	Metals	Total	Lead	mg/kg	Wet	19	12	1.59	1.61	1.81	Non-parametric	1.81
Smallmouth Bass	Metals	Total	Mercury	mg/kg	Wet	19	19	0.131	0.106	0.333	Gamma	0.268
Smallmouth Bass	Metals	Total	Nickel	mg/kg	Wet	19	16	1.10	1.29	1.79	Non-parametric	1.79
Smallmouth Bass	Metals	Total	Thallium	mg/kg	Wet	19	19	0.0160	0.0152	0.0261	Normal	0.0232
Smallmouth Bass	Metals	Total	Vanadium	mg/kg	Wet	19	18	0.0585	0.0540	0.104	Non-parametric	0.104
Smallmouth Bass	Metals	Total	Zinc	mg/kg	Wet	19	19	13.4	13.1	15.5	Normal	15.5
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	19	0	-	-	-	Non-parametric	9.90 / 10.0
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	19	0	-	-	-	Non-parametric	20.0 / 20.0
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	19	0	-	-	-	Non-parametric	11.0 / 11.0
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	19	4	7.88	7.55	14.0	Non-parametric	14.0
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	19	0	-	-	-	Non-parametric	33.0 / 33.0
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	19	16	52.3	47.0	110	Non-parametric	110
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	19	0	-	-	-	Non-parametric	140 /140
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	19	0	-	-	-	Non-parametric	110 / 110
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	19	0	-	-	-	Non-parametric	10.0 / 10.0
Smallmouth Bass	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	19	16	-	-	124	Non-parametric	124
Smallmouth Bass	SVOCs	Total	Acenaphthene	ug/kg	Wet	19	18	0.813	0.815	1.30	Non-parametric	1.30
Smallmouth Bass	SVOCs	Total	Anthracene	ug/kg	Wet	19	3	0.230	0.220	0.380	Non-parametric	0.380
Smallmouth Bass	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	19	3	0.703	0.610	0.940	Non-parametric	0.940
Smallmouth Bass	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	19	0	-	-	-	Non-parametric	0.810 / 4.80
Smallmouth Bass	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	19	0	-	-	-	Non-parametric	0.700 / 4.80
Smallmouth Bass	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	19	0	-	-	-	Non-parametric	0.730 / 4.80
Smallmouth Bass	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	19	0	-	-	-	Non-parametric	0.560 / 4.80
Smallmouth Bass	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	19	2	116	116	150	Non-parametric	150
Smallmouth Bass	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	19	0	-	-	-	Non-parametric	7.30 / 40.0
Smallmouth Bass	SVOCs	Total	Carbazole	ug/kg	Wet	19	0	-	-	-	Non-parametric	9.10 / 40.0
Smallmouth Bass	SVOCs	Total	Chrysene	ug/kg	Wet	19	1	-	-	0.550	Non-parametric	0.550
Smallmouth Bass	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	19	0	-	-	-	Non-parametric	0.590 / 4.80
Smallmouth Bass	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	19	0	-	-	-	Non-parametric	280 / 280
Smallmouth Bass	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	19	1	-	-	15.0	Non-parametric	15.0
Smallmouth Bass	SVOCs	Total	Fluoranthene	ug/kg	Wet	19	11	1.30	1.20	2.50	Non-parametric	2.50
Smallmouth Bass	SVOCs	Total	Fluorene	ug/kg	Wet	19	16	1.35	1.40	2.10	Non-parametric	2.10
Smallmouth Bass	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	19	0	-	-	-	Non-parametric	0.640 / 4.80
Smallmouth Bass	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	19	0	-	-	-	Non-parametric	11.0 / 40.0
Smallmouth Bass	SVOCs	Total	Phenanthrene	ug/kg	Wet	19	19	3.11	3.00	5.10	Normal	4.97
Smallmouth Bass	SVOCs	Total	Pyrene	ug/kg	Wet	19	2	0.400	0.400	0.420	Non-parametric	0.420

Table I-20a
Statistical Summary for Random Reference Samples
Bradford Island - River Operable Unit
(4 of 5)

											Upper Prediction Limit (UPL)	
Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	Distribution	95% UPL
Sculpin	Metals	Total	Arsenic	mg/kg	Wet	18	18	0.382	0.384	0.484	Normal	0.513
Sculpin	Metals	Total	Cadmium	mg/kg	Wet	18	18	0.0152	0.0144	0.0264	Normal	0.0236
Sculpin	Metals	Total	Lead	mg/kg	Wet	18	17	0.0368	0.0319	0.0758	Non-parametric	0.0758
Sculpin	Metals	Total	Mercury	mg/kg	Wet	18	18	0.0876	0.0885	0.141	Normal	0.134
Sculpin	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	19	0	-	-	-	Non-parametric	2.40 / 10.0
Sculpin	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	19	0	-	-	-	Non-parametric	2.60 / 20.0
Sculpin	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	19	0	-	-	-	Non-parametric	2.30 / 10.0
Sculpin	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	19	0	-	-	-	Non-parametric	2.20 / 10.0
Sculpin	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	19	0	-	-	-	Non-parametric	45.0 / 45.0
Sculpin	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	19	0	-	-	-	Non-parametric	44.0 / 44.0
Sculpin	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	19	0	-	-	-	Non-parametric	1.90 / 10.0
Sculpin	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	19	0	-	-	-	Non-parametric	2.50 / 10.0
Sculpin	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	19	0	-	-	-	Non-parametric	2.00 / 10.0
Clam	Metals	Total	Aluminum	mg/kg	Wet	18	18	29.8	23.7	83.4	Gamma	68.7
Clam	Metals	Total	Antimony	mg/kg	Wet	18	3	0.00567	0.00500	0.00800	Non-parametric	0.00800
Clam	Metals	Total	Arsenic	mg/kg	Wet	18	18	2.30	2.30	2.62	Normal	2.64
Clam	Metals	Total	Barium	mg/kg	Wet	18	18	1.89	1.82	2.38	Non-parametric	2.38
Clam	Metals	Total	Beryllium	mg/kg	Wet	18	9	0.000844	0.000900	0.00140	Non-parametric	0.00140
Clam	Metals	Total	Cadmium	mg/kg	Wet	18	18	0.332	0.338	0.405	Normal	0.410
Clam	Metals	Total	Chromium	mg/kg	Wet	18	18	0.548	0.500	0.760	Non-parametric	0.760
Clam	Metals	Total	Cobalt	mg/kg	Wet	18	18	0.117	0.119	0.150	Normal	0.153
Clam	Metals	Total	Copper	mg/kg	Wet	18	18	9.74	9.66	11.6	Normal	11.2
Clam	Metals	Total	Lead	mg/kg	Wet	18	18	0.0616	0.0625	0.0720	Normal	0.0729
Clam	Metals	Total	Mercury	mg/kg	Wet	18	18	0.00892	0.00740	0.0179	Gamma	0.0160
Clam	Metals	Total	Methyl Mercury	mg/kg	Wet	18	18	0.00534	0.00535	0.00990	Normal	0.00896
Clam	Metals	Total	Nickel	mg/kg	Wet	18	18	0.354	0.347	0.482	Normal	0.447
Clam	Metals	Total	Thallium	mg/kg	Wet	18	18	0.00676	0.00645	0.0105	Lognormal	0.00905
Clam	Metals	Total	Vanadium	mg/kg	Wet	18	18	0.145	0.144	0.286	Normal	0.234
Clam	Metals	Total	Zinc	mg/kg	Wet	18	18	21.0	21.0	23.2	Normal	23.6
Clam	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	18	0	-	-	-	Non-parametric	15.0 / 15.0
Clam	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	18	0	-	-	-	Non-parametric	16.0 / 20.0
Clam	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	18	0	-	-	-	Non-parametric	35.0 / 35.0
Clam	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	18	0	-	-	-	Non-parametric	14.0 / 14.0
Clam	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	18	0	-	-	-	Non-parametric	9.90 / 10.0
Clam	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	18	18	34.9	35.0	39.0	Normal	39.7
Clam	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	18	0	-	-	-	Non-parametric	8.10 / 10.0
Clam	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	18	0	-	-	-	Non-parametric	9.90 / 10.0
Clam	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	18	0	-	-	-	Non-parametric	2.00 / 10.0
Clam	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	18	18	-	-	39.0	Non-parametric	39.0
Clam	SVOCs	Total	Acenaphthene	ug/kg	Wet	18	18	0.647	0.630	1.20	Normal	1.06
Clam	SVOCs	Total	Anthracene	ug/kg	Wet	18	2	1.32	1.32	1.80	Non-parametric	1.80
Clam	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	18	0	-	-	-	Non-parametric	27.0 / 27.0
Clam	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	18	0	-	-	-	Non-parametric	0.410 / 2.50
Clam	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	18	0	-	-	-	Non-parametric	0.350 / 2.50
Clam	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	18	5	0.950	0.850	1.40	Non-parametric	1.40
Clam	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	18	0	-	-	-	Non-parametric	0.280 / 2.50

Table I-20a
Statistical Summary for Random Reference Samples
Bradford Island - River Operable Unit
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											Upper Prediction Limit (UPL)	
Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Number of Samples	Number of Detections	Mean of Detects	Median of Detects	Maximum Detected Value	Distribution	95% UPL
Clam	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	18	18	444	415	680	Gamma	660
Clam	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	18	3	62.7	57.0	74.0	Non-parametric	74.0
Clam	SVOCs	Total	Carbazole	ug/kg	Wet	18	0	-	-	-	Non-parametric	9.10 / 40.0
Clam	SVOCs	Total	Chrysene	ug/kg	Wet	18	0	-	-	-	Non-parametric	13.0 / 13.0
Clam	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	18	0	-	-	-	Non-parametric	0.300 / 2.50
Clam	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	18	0	-	-	-	Non-parametric	48.0 / 48.0
Clam	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	18	0	-	-	-	Non-parametric	11.0 / 40.0
Clam	SVOCs	Total	Fluoranthene	ug/kg	Wet	18	18	12.0	12.0	17.0	Normal	15.6
Clam	SVOCs	Total	Fluorene	ug/kg	Wet	18	18	2.08	2.00	3.10	Normal	2.85
Clam	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	18	7	1.43	1.50	2.00	Non-parametric	2.00
Clam	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	18	18	46.5	44.5	110	Normal	86.6
Clam	SVOCs	Total	Phenanthrene	ug/kg	Wet	18	18	9.6	9.1	14	Normal	13.1
Clam	SVOCs	Total	Pyrene	ug/kg	Wet	18	0	-	-	-	Non-parametric	5.60 / 5.60

Notes
For analytes with less than 100% detection rate, but at least one detection, the maximum detected value was assessed as the non-parametric UPL.
For analytes with no detections (0% detection rate), the maximum MDL and maximum MRL are shown (MDL/MRL) as the non-paramentric UPL.
UPLs were not calculated when less than 8 samples were available (i.e., surface water is not shown because there were less than 8 samples).

% = percent
Dry = Dry weight
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = method reporting limit
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
PCB = polychlorinated biphenyl
SD = standard deviation
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
UPL = upper prediction limit
Wet = Wet Weight

Table I-20b
Statistical Summary for Random Reference PCB Congener Data
Bradford Island - River Operable Unit
(1 of 2)

											Upper Prediction Limit (UPL)	
Matrix	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Number of Detections (not ND or EMPC)	Mean of Detects	Median of Detects	Maximum Detected Value	Distribution	95% UPL
Sediment	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Dry	18	18	1.02	0.986	2.01	Normal	1.65
Sediment	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Dry	18	2	0.101	0.101	0.143	Non-parametric	0.143
Sediment	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Dry	18	18	8.95	8.02	27.5	Gamma	17.7
Sediment	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Dry	18	16	0.497	0.396	1.63	Non-parametric	1.63
Sediment	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	18	18	25.7	21.5	70.5	Gamma	55.2
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	18	9	0.582	0.406	1.22	Non-parametric	1.22
Sediment	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	18	9	0.176	0.175	0.337	Non-parametric	0.337
Sediment	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Dry	18	18	2.93	2.50	8.50	Gamma	5.79
Sediment	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	18	15	1.55	1.25	3.84	Non-parametric	3.84
Sediment	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	18	0	-	-	-	Non-parametric	0.200
Sediment	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Dry	18	14	0.249	0.231	0.573	Non-parametric	0.573
Sediment	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Dry	18	18	-	-	1.20	Non-parametric	1.20
Crayfish	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	17	17	2.75	2.62	4.66	Normal	4.34
Crayfish	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	17	2	0.172	0.172	0.176	Non-parametric	0.176
Crayfish	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	17	17	8.40	7.62	24.8	Gamma	21.4
Crayfish	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	17	3.70	3.51	8.15	Gamma	5.98
Crayfish	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	17	129	111	323	Gamma	261
Crayfish	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	17	17	3.37	3.00	7.36	Gamma	6.10
Crayfish	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	17	6	0.449	0.453	0.530	Non-parametric	0.530
Crayfish	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	17	17	19.2	17.3	39.1	Gamma	31.5
Crayfish	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	17	17	13.8	11.2	30.1	Gamma	25.3
Crayfish	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	17	0	-	-	-	Non-parametric	0.325
Crayfish	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	17	16	1.22	1.25	2.20	Non-parametric	2.20
Crayfish	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	17	17	-	-	1.94	Non-parametric	1.94
Smallmouth Bass	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	19	19	63.3	49.7	195	Non-parametric	195
Smallmouth Bass	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	19	12	4.27	3.19	15.9	Non-parametric	15.9
Smallmouth Bass	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	19	19	2,738	1,320	23,400	Non-parametric	23,400
Smallmouth Bass	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	19	17	281	97.1	2,910	Non-parametric	2,910
Smallmouth Bass	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	19	19	9,619	3,740	98,600	Non-parametric	98,600
Smallmouth Bass	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	19	17	180	69.1	1,830	Non-parametric	1,830
Smallmouth Bass	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	19	13	16.4	10.7	74.6	Non-parametric	74.6
Smallmouth Bass	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	19	19	1,651	490	20,000	Non-parametric	20,000
Smallmouth Bass	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	19	19	574	198	6,540	Non-parametric	6,540
Smallmouth Bass	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	19	0	-	-	-	Non-parametric	10.9
Smallmouth Bass	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	19	15	67.4	29.5	532	Non-parametric	532
Smallmouth Bass	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	19	19	-	-	499	Non-parametric	499
Sculpin	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	18	18	15.1	13.9	25.9	Normal	23.9
Sculpin	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	18	0	-	-	-	Non-parametric	2.21
Sculpin	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	18	18	692	689	1,040	Normal	1,050
Sculpin	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	18	18	48.2	45.5	82.1	Normal	77.5
Sculpin	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	18	18	2,275	2,055	3,870	Normal	3710
Sculpin	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	18	17	30.9	29.8	47.0	Non-parametric	47.0
Sculpin	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	18	17	4.25	3.97	5.93	Non-parametric	5.93
Sculpin	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	18	18	275	248	464	Normal	465

Table I-20b
Statistical Summary for Random Reference PCB Congener Data
Bradford Island - River Operable Unit
(2 of 2)

											Upper Prediction Limit (UPL)	
Matrix	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Number of Samples	Number of Detections (not ND or EMPC)	Mean of Detects	Median of Detects	Maximum Detected Value	Distribution	95% UPL
Sculpin	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	18	18	108	98.0	175	Normal	177
Sculpin	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	18	0	-	-	-	Non-parametric	9.29
Sculpin	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	18	16	9.23	8.40	17.2	Non-parametric	17.2
Sculpin	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	18	18	-	-	38.3	Non-parametric	38.3
Clam	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Wet	18	18	39.1	38.1	46.8	Normal	46.6
Clam	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	18	10	2.20	2.09	2.75	Non-parametric	2.75
Clam	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	18	18	446	436	556	Normal	542
Clam	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	18	18	26.2	25.4	33.0	Normal	31.6
Clam	Total	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	18	18	2,374	2,355	2,820	Normal	2,820
Clam	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	18	18	44.4	43.1	54.0	Normal	53.6
Clam	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	18	17	4.79	4.74	5.64	Non-parametric	5.64
Clam	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Wet	18	18	141	138	166	Normal	165
Clam	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	18	18	143	143	170	Normal	169
Clam	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	18	0	-	-	-	Non-parametric	1.73
Clam	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	18	17	2.00	1.98	2.41	Non-parametric	2.41
Clam	Total		Total PCBs As Congeners (KM, capped)	ug/kg	Wet	18	18	-	-	34.5	Non-parametric	34.5

Notes
For analytes with less than 100% detection rate, but at least one detection, the maximum detected value was assessed as the non-parametric UPL.
For PCB congeners with no detections (0% detection rate), the maximum of the RDL and EMPC was assessed as the non-parametric UPL.
UPLs were not calculated when less than 8 samples were available (i.e., surface water is not shown because there were less than 8 samples).

% = percent
Dry = Dry weight
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
PCB = polychlorinated biphenyl
pg/kg = picrograms per kilogram
ug/kg = micrograms per kilogram
RDL = reported detection limit
UPL = upper prediction limit
Wet = Wet Weight

APPENDIX J
SCREENING LEVEL VALUES

J.0 Selection of Screening Level Values

For each media, screening level values (SLVs) were selected for human and ecological receptors, based on a hierarchy of sources (Tables J-1 through J-3). These SLVs were developed based on discussions with the United States Army Corps of Engineers (USACE) and the (Oregon) Department of Environmental Quality (DEQ) during the meetings held from December to February, 2010, as documented in Data Sufficiency Report (DSR) Meeting Minutes Memorandum (URS 2010a) and River Operable Unit (OU) and Upland OU DSR Response to Comments (RTC) (URS 2010b,c). The agreed-upon hierarchy of Human Health SLVs is presented in Section J.1 and the hierarchy of Ecological SLVs is presented in Section J.2. Section J.3 presents the SLVs (generally the more conservative of the human health and ecological SLVs, unless only one is applicable) used for identifying preliminary contaminants of potential concern (COPCs) for discussion of nature and extent of contamination (Section 9.0 of the RI Report). Tables J-4 and J-5 present the SLVs for specific human health and ecological receptors, respectively, used to identify COPCs in the human health risk assessment (Appendix M) and contaminants of potential ecological concern (CPECs) in the ecological risk assessment (Appendix N).

J.1 Human Health SLV Hierarchy

Site-specific reference concentrations were used to establish SLVs for inorganic analytes in soil and sediment. The Upland OU reference soil concentrations were established using 14 surface soil samples from an undeveloped portion of Bradford Island (see Figure 6-1 of the RI Report). The River OU reference sediment concentrations were established using 18 sediment samples from an upstream area (see Figure 6-2 of the RI Report). For Upland OU soil and River OU sediment, 95% upper prediction limits (UPLs) were calculated (Appendix I, Tables I-17 and I-20). These site-specific reference area 95% UPLs were used in the selection of SLVs for human and ecological receptors in soil and sediment, as described below.

The following summarizes the human health SLV hierarchy (Tables J-1 and J-4):

J.1.1 Soil

Except for polychlorinated biphenyl (PCB) Aroclors, the SLV is selected as the higher of the 95% UPL of site-specific Reference Area soil concentrations, for inorganic analytes only, and the human health SLVs, in order of preference as follows:

1. .DEQ's occupational, construction, and excavation worker Risk-based Concentrations (RBCs) (2003, updated 2009)
2. USEPA's industrial Regional Screening Levels (RSLs) (2010)

For Total PCBs (as Aroclors) and for individual Aroclors, USEPA's non-residential RSLs were used; DEQ's non-residential RBCs were not used. In the absence of individual Aroclor RSLs, the Total PCBs SLV was used for both individual Aroclors and Total PCBs (as Aroclors).

J.1.2 Sediment and Erodible/Mass Wasting Soil

The highest value of the following:

- 95% UPL of site-specific Reference Area sediment concentrations, for inorganic analytes only.

- DEQ's Sediment Bioaccumulation SLVs protective of humans (general and subsistence) (2007).

J.1.3 Soil Gas

1. DEQ's occupational soil gas RBCs (2003, updated 2009).

2. USEPA's Industrial Ambient Air RSLs multiplied by a factor of 1000 (2010).

J.1.4 Groundwater, Seep Water, and Surface Water

Ingestion and Direct Contact Pathways

Except for PCB Aroclors, the order of preference for Ingestion/Direct Contact SLVs is as follows:

1. DEQ's Groundwater RBCs (all groundwater RBCs) (2003, updated 2009).

2. USEPA's Tapwater RSLs (2010).

3. DEQ's Maximum Contaminant Levels (MCLs) (Accessed 2010; DEQ 2010a).

For Total PCBs (as Aroclors) and for individual Aroclors, USEPA's tapwater RSLs were the first choice; DEQ's Groundwater RBCs were not used since they were not Aroclor-specific values.

Discharge to Surface Water and Bioaccumulation Pathways

1. USEPA's National Ambient Water Quality Criteria (NAWQC) (2009) for freshwater protective of human health (water + organisms, organism only).

2. DEQ's human health-based Water Quality Criteria (WQC), Table 33A (OAR, Section 340-041; DEQ 2009a).

3. DEQ's human health-based WQC, Table 33B (OAR, Section 340-041; DEQ 2009a).

J.1.5 Tissue

1. DEQ's Acceptable Tissue Levels (ATLs), on wet weight basis, protective of humans subsistence/recreational (carcinogens and non-carcinogens) (2007) for subsistence fishers and for recreational fishers.

2. A few additional COIs were detected in crayfish and smallmouth bass tissue for which ATLs were not provided in DEQ (2007). They include a few inorganics, phthalates, and polycyclic aromatic hydrocarbons (PAHs). PAHs are generally considered to exhibit limited bioaccumulation in fish tissue due to the capacity of fish to metabolize PAHs. However, several PAHs were detected in smallmouth bass and crayfish tissue. Therefore, they were categorized into carcinogenic and non-

carcinogenic PAHs. The lower of DEQ's ATLs for fluoranthene and pyrene was applied to the non-carcinogenic PAHs. ATLs were estimated for the phthalates and carcinogenic PAHs by applying DEQ's methodology for ATL development and using cancer potency values from USEPA's IRIS database. The COIs for which ATLs were developed included B2EHP, butylbenzyl phthalate, di-n-butyl phthalate, di-n-octyl phthalate and eight carcinogenic PAHs (benzo(a)anthracene, benzo(b)flouranthene, benzo(g,h,i)perylene, benzo(k)flouranthene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene and indeno (1,2,3-cd)pyrene) (Table J-2).

J.2 Ecological SLV Hierarchy

As was done for the human health SLVs, site-specific reference 95% UPLs were used to establish ecological SLVs for inorganic analytes in soil and sediment. The following summarizes the ecological SLV hierarchy (Tables J-1 and J-5):

For all media, each individual Aroclor was screened against the Aroclor-specific SLV, unless the SLV for total PCBs is more conservative, in which case the SLV for total PCBs was applied to the individual Aroclor. If there is no Aroclor-specific SLV, each Aroclor was screened against the Total PCBs SLV. The Total PCBs (as Aroclors) was also screened against the Total PCBs SLV.

J.2.1 Soil

The SLV is selected as the higher of the 95% UPL of site-specific Reference Area soil concentrations, for inorganic analytes only, and the ecological SLVs, in order of preference as follows:

1. USEPA's Ecological Soil Screening Levels (EcoSSLs) protective of plants, soil invertebrates, birds, and mammals (2005-2008).
2. DEQ's Level II SLVs for soil protective of plants, soil invertebrates, birds, and mammals (DEQ 2001).
3. Oak Ridge National Laboratory's (ORNL's) Preliminary Remediation Goals (PRGs) for ecological endpoints protective of birds and mammals (Efroymson et al. 1997c) and ORNL publications with screening levels for plants and soil invertebrates (Efroymson et al. 1997a,b).
4. USEPA's Toxicity Reference Values (TRVs) protective of plants and invertebrates (1999b).

J.2.2 Sediment and Erodible/Mass Wasting Soil:

The SLV is selected as the higher of the 95% UPL of site-specific Reference Area soil concentrations, for inorganic analytes only, and the lowest of the following ecological SLVs:

- DEQ's Sediment Bioaccumulation SLVs protective of birds, mammals, and fish (2007).
- DEQ's Level II SLVs for freshwater sediments protective of benthic invertebrates (2001).

J.2.3 Groundwater, Seep Water, and Surface Water

1. USEPA's NAWQC for freshwater protective of aquatic life (Criteria Continuous Concentrations; 2009).
2. DEQ's WQC protective of freshwater organisms (Criteria Continuous Concentrations; OAR, Section 340-041, Table 33A; DEQ 2009a).
3. DEQ's Level II SLVs for freshwater protective of aquatic life, birds, and mammals (2001).
4. ORNL's toxicological benchmarks for freshwater protective of aquatic biota (Suter and Tsao 1996).
5. USEPA's Freshwater Chronic Values (FCVs) for PAHs protective of aquatic life (2003b).
6. Canadian Water Quality Guidelines for the Protection of Aquatic Life (Canadian Council of Resource and Environment Ministers 2007).
7. NOAA's Screening Quick Reference Tables (SQuiRTs) for freshwater (Buchman 2008).

J.2.4 Tissue

1. DEQ's ATLs protective of birds and mammals and Critical Tissue Levels (CTLs) protective of fish and shellfish (2007).
2. A few additional COIs were detected in tissue for which ATLs were not provided in DEQ (2007). They include a few inorganics (aluminum, thallium, vanadium, and zinc), phthalates, and PAHs. For the PAHs, the ATLs and CTLs for fluoranthene were used as surrogate screening levels for individual low molecular weight PAHs (LPAHs) detected tissue, and the ATLs/CTLs for pyrene were used to screen individual high molecular weight PAHs (HPAHs) detected in tissue. ATLs and CTLs were estimated for the three phthalates (bis[2-ethyl-hexyl]phthalate, butyl benzyl phthalate, and di-n-butyl phthalate) (Table J-3) by applying DEQ's methodology for ATL and CTL development and using ORNL TRVs (Sample et al 1996) for the mink and great blue heron to be consistent with DEQ's guidance (2007).

   ATLs and CTLs were not developed for the inorganics in tissue for the following reasons**:**

   a. Concentrations of inorganics in Forebay sediment were not elevated above the Reference Area concentrations (Appendix L, Tables L-4 to L-6).
   b. Concentrations of thallium and vanadium in Forebay clams, crayfish, and smallmouth bass were not elevated above Reference Area concentrations (Appendix L, Tables L-4 to L-6).
   c. Concentrations of aluminum and zinc in Forebay clams and crayfish were not elevated above the Reference Area concentrations (Appendix L, Tables L-4 to L-6).
   d. Although aluminum and zinc concentrations in Forebay bass tissue were found to

be statistically higher than the Reference Area bass tissue concentrations in the population-to-population evaluation (Table 8-3 and Appendix L, Tables L-4 to L-6), the Forebay smallmouth bass tissue had 95% UCL concentrations (Appendix I, Table I-18a) lower than the Reference Area maximum detected concentrations:

- Aluminum – Small mouth bass 95% UCL for the Forebay was 7.11 mg/kg compared to the Reference Area maximum concentration of 10.1 mg/kg.
- Zinc – Small mouth bass 95% UCL for the Forebay was 14.9 mg/kg compared to the Reference Area maximum concentration of 15.5 mg/kg.

The tissue SLVs were compared to the types of tissue that correspond to the dietary intake assumptions:

- SLVs protective of fish/shellfish were compared to all tissue data
- SLVs protective of birds were compared to smallmouth bass tissue data
- SLVs protective of mammals were compared to crayfish, sculpin, and smallmouth bass data (as three distinct datasets; no combination of tissues indicating dietary proportions were performed for the Screening Assessment)

J.3 Minimum Potentially Applicable SLVs Used to Identify preliminary COPCs for Nature and Extent

This section summarizes the selected minimum potentially applicable SLVs by media used to identify preliminary COPCs for discussion of nature and extent of contamination (Section 9.0 of the RI Report).

The SLVs used for identification of preliminary COPCs are as follows:

J.3.1 Soil

- Inorganic COIs in Soil (0-1 and 0-3 feet bgs) – The greater of the Reference Area 95% upper prediction limit (UPLs) and the toxicity based SLVs (lower of the human health and ecological SLVs) based on exposure to individual COIs. The 95% UPL was constructed for the next single future observation with a false positive rate for all four AOPCs combined likely greater than 5% due to the multiple comparisons. This is a conservative approach for the four AOPCs combined because skewing the data to a higher false positive rate allows for a lower chance of false negatives.
- Organic COIs in Soil (0-1 and 0-3 feet bgs) – The lower of the human health and ecological toxicity-based SLVs based on exposure to individual COIs.
- Inorganic COIs in Soil (0-10 feet bgs and > 10 feet bgs) – The greater of the Reference Area 95% UPLs and the human health toxicity based SLVs based on exposure to individual COIs. Ecological SLVs are not considered because, as noted in the RI/FS MP (URS 2007a), soil deeper than 3 feet is not relevant for ecological risk assessment and soils shallower than 3 feet bgs have already been considered in the other depth intervals.
- Organic COIs in Soil (0-10 feet bgs and > 10 feet bgs) – The selected human health

toxicity-based SLVs based on exposure to individual COIs. Ecological SLVs are not considered because, as noted in the RI/FS MP (URS 2007a), soil deeper than 3 feet is not relevant for ecological risk assessment and soils shallower than 3 feet bgs have already been considered in the other depth intervals.

J.3.2 Sediment

- Inorganic COIs– The greater of the Reference Area 95% UPLs and the toxicity based SLVs (lower of the human health and ecological SLVs) based on exposure to individual COIs.
- Organic COIs – The lower of the human health and ecological toxicity-based SLVs based on exposure to individual COIs.

J.3.3 Soil Gas

- Inorganic and Organic COIs – The human health toxicity-based SLVs based on exposure to individual COIs.

J.3.4 Groundwater, Seep Water, and Surface Water

- Dissolved metals and all organic COIs – The lower of the selected direct contact and groundwater-to-surface water/bioaccumulative toxicity-based water SLVs established for human and/or ecological receptors based on exposure to individual COIs.
- Total metals – the lower of the selected direct contact and groundwater-to-surface water/bioaccumulation toxicity-based water SLVs established for human health toxicity only (because ecological SLVs are not based on total metals).

J.3.5 Tissue

- Inorganic and Organic COIs – The lower of the human health and ecological toxicity-based SLVs based on exposure to individual COIs for crayfish and smallmouth bass.
- Inorganic and Organic COIs – The lowest ecological toxicity-based SLVs based on exposure to individual COIs for clam and sculpin (these tissues are not relevant for the human health pathway).

J.3.6 References

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Table J-1a - Miniumum Potentially Applicable Soil SLVs for Identification of Preliminary COPCs
Bradford Island, Upland Operable Unit
(1 of 3)

Analyte	CAS #	Candidate Human Health Soil Screening Level Values (mg/kg)								Candidate Ecological Soil Screening Level Values (mg/kg)																					
										USEPA Eco SSL[am-be]					DEQ Level II SLV[ar]					ORNL					USEPA TRVs[bi]						
		DEQ Soil Ingest Occupational RBC [u]	DEQ Soil Ingest Construction RBC [u]	DEQ Soil Ingest Excavation RBC [u]	DEQ Soil Volatilize Outdoor Occupational RBC [u]	DEQ Soil Vapor Intrusion Occupational RBC [u]	USEPA Soil Indust RSL [v]	Selected Human Health Soil SLV [w]	Selected Human Health Soil SLV with Surrogates [w]	Plant Eco SSL	Inverte-brate Eco SSL	Avian Eco SSL	Mammal Eco SSL	Lowest USEPA Eco SSL	Plant Level II SLV	Inverte-brate Level II SLV	Avian Level II SLV	Mammal Level II SLV	Lowest DEQ Level II SLV	Plant ORNL[bg]	Inverte-brate ORNL[bh]	Avian ORNL PRG [bi]	Mammal ORNL PRG [bi]	Lowest ORNL	Plant TRV	Inverte-brate TRV	Lowest USEPA TRV	Selected Soil Ecological SLV [bk]	Selected Ecological Soil SLV with Surrogates [bk]	Site-Specific Reference UPL	Selected Min. Potentially Applicable Soil SLV (0-1 & 0-3 ft bgs) [bl]	SLV (0-1 & 0-3 ft bgs): HH or Eco	Selected Min. Potentially Applicable Soil SLV (0-10 ft bgs) [bl]	SLV (0-10 ft bgs): HH
1,1,1,2-Tetrachloroethane	630-20-6	-	-	-	-	-	9.3	9.3	9.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.3	HH	9.3	HH
1,1,1-Trichloroethane (TCA)	71-55-6	-	-	-	-	-	38000	38000	38000	-	-	-	-	-	55550	55550	-	-	-	-	-	-	-	-	55550	55550	-	-	38000	HH	38000	HH
1,1,2,2-Tetrachloroethane	79-34-5	-	-	-	-	-	2.8	2.8	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.8	HH	2.8	HH
1,1,2-Trichloroethane	79-00-5	25	290	8100	24	2.7	5.3	2.7	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	HH	2.7	HH
1,1-Dichloroethane	75-34-3	250	2900	81000	240	5.9	17	5.9	5.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70 [ar]	5.9	HH	5.9	HH
1,1-Dichloroethene	75-35-4	27000	12000	-	-	680	1100	680	680	-	-	-	-	-	3750	3750	-	-	-	-	-	-	-	-	3750	3750	-	-	680	HH	680	HH
1,1-Dichloropropene	563-58-6	-	-	-	-	-	8.1	8.1	8.1 [e]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.1 [e]	HH	8.1 [e]	HH
1,2,3-Trichlorobenzene	87-61-6	-	-	-	-	-	490	490	490	-	-	-	-	-	-	20	-	-	20	-	20	-	-	20	-	-	-	20	20	-	20	Eco	490	HH
1,2,3-Trichloropropane	96-18-4	-	-	-	-	-	0.095	0.095	0.095	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.095	HH	0.095	HH
1,2,4-Trichlorobenzene	120-82-1	-	-	-	-	-	99	99	99	-	-	-	-	-	-	20	-	-	20	-	20	-	-	20	-	-	-	20	20	-	20	Eco	99	HH
1,2,4-Trimethylbenzene	95-63-6	2000	2000	54000	980	1000	260	980	980	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200 [x]	200 [x]	-	980	HH	980	HH
1,2-Dibromo-3-chloropropane	96-12-8	-	-	-	-	-	0.069	0.069	0.069	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.069	HH	0.069	HH
1,2-Dibromoethane (EDB)	106-93-4	0.68	8.1	230	0.65	0.14	0.17	0.14	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.14	HH	0.14	HH
1,2-Dichlorobenzene	95-50-1	35000	19000	-	-	-	9800	19000	19000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.26 [ah]	2.26 [ah]	-	19000	Eco	19000	HH
1,2-Dichloroethane (EDC)	107-06-2	15	180	5000	15	0.59	2.2	0.59	0.59	-	-	-	-	-	-	-	70	2780	70	-	-	-	-	-	70	70	-	-	0.59	HH	0.59	HH
1,2-Dichloropropane	78-87-5	-	-	-	-	-	4.5	4.5	4.5	-	-	-	-	-	-	700	-	-	700	-	700	-	-	700	-	-	-	700	700	-	4.5	HH	4.5	HH
1,3,5-Trimethylbenzene	108-67-8	1600	1500	42000	-	150	10000	150	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200 [x]	150	HH	150	HH
1,3-Dichlorobenzene	541-73-1	-	-	-	-	-	-	-	17 [m]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.26	2.26	2.26	2.26	-	2.26	Eco	17 [m]	HH
1,3-Dichloropropane	142-28-9	-	-	-	-	-	20000	20000	20000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20000	HH	20000	HH
1,4-Dichlorobenzene	106-46-7	63	1200	34000	36	17	12	17	17	-	-	-	-	-	-	20	-	-	20	-	20	-	-	20	-	-	-	20	20	-	17	HH	17	HH
2,2-Dichloropropane	594-20-7	-	-	-	-	-	-	-	4.5 [n]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.5 [n]	HH	4.5 [n]	HH
2,4,5-T	93-76-5	-	-	-	-	-	6200	6200	6200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.021 [aj]	0.021 [aj]	-	0.021 [aj]	Eco	6200	HH
2,4,5-TP (Silvex)	93-72-1	-	-	-	-	-	4900	4900	4900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.021 [aj]	0.021 [aj]	-	0.021 [aj]	Eco	4900	HH
2,4,5-Trichlorophenol	95-95-4	-	-	-	-	-	62000	62000	62000	-	-	-	-	-	4	9	-	-	4	4	9	-	-	4	-	-	-	4	4	-	4	Eco	62000	HH
2,4,6-Trichlorophenol	88-06-2	200	240	6600	-	-	160	200	200	-	-	-	-	-	10	10	-	-	10	-	10	-	-	10	-	-	-	10	10	-	10	Eco	200	HH
2,4-D	94-75-7	7700	2400	66000	-	-	7700	2400	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.021 [aj]	0.021 [aj]	-	0.021 [aj]	Eco	2400	HH
2,4-DB	94-82-6	-	-	-	-	-	4900	4900	4900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.021 [aj]	0.021 [aj]	-	0.021 [aj]	Eco	4900	HH
2,4-Dichlorophenol	120-83-2	-	-	-	-	-	1800	1800	1800	-	-	-	-	-	20	-	-	-	20	-	-	-	-	-	-	-	-	20	20	-	20	Eco	1800	HH
2,4-Dimethylphenol	105-67-9	-	-	-	-	-	12000	12000	12000	-	-	-	-	-	20	-	-	-	20	-	-	-	-	-	-	-	-	20	20	-	20	Eco	12000	HH
2,4-Dinitrophenol	51-28-5	-	-	-	-	-	1200	1200	1200	-	-	-	-	-	20	-	-	-	20	20	-	-	-	20	-	-	-	20	20	-	20	Eco	1200	HH
2,4-Dinitrotoluene	121-14-2	-	-	-	-	-	5.5	5.5	5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.5	HH	5.5	HH
2,6-Dinitrotoluene	606-20-2	770	240	6600	-	-	620	240	240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	240	HH	240	HH
2-Butanone (MEK)	78-93-3	-	-	-	-	-	200000	200000	200000	-	-	-	-	-	-	-	-	200000	200000	-	-	-	-	-	-	-	-	200000	200000	-	200000	HH	200000	HH
2-Chloronaphthalene	91-58-7	-	-	-	-	-	82000	82000	82000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82000	HH	82000	HH
2-Chlorophenol	95-57-8	-	-	-	-	-	5100	5100	5100	-	-	-	-	-	60	-	-	-	60	-	-	-	-	-	-	-	-	60	60	-	60	Eco	5100	HH
2-Chlorotoluene	95-49-8	-	-	-	-	-	20000	20000	20000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20000	HH	20000	HH
2-Hexanone	591-78-6	-	-	-	-	-	1400	1400	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1250 [z]	-	1250 [z]	Eco	1400	HH
2-Methylnaphthalene	91-57-6	-	-	-	-	-	4100	4100	4100	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	-	-	-	***	***	-	4100	HH	4100	HH
2-Methylphenol	95-48-7	-	-	-	-	-	31000	31000	31000	-	-	-	-	-	50	-	-	16000	50	-	-	-	-	-	-	-	-	50	50	-	50	Eco	31000	HH
2-Nitroaniline	88-74-4	-	-	-	-	-	6000	6000	6000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6000	HH	6000	HH
2-Nitrophenol	88-75-5	-	-	-	-	-	-	-	180000 [o]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180000 [o]	HH	180000 [o]	HH
3,3'-Dichlorobenzidine	91-94-1	4.8	37	1000	-	-	3.8	4.8	4.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.8	HH	4.8	HH
3-Nitroaniline	99-09-2	-	-	-	-	-	-	-	6000 [q]	-	-	-	-	-	70	-	-	-	70	-	-	-	-	-	-	-	-	70	70	-	70	Eco	6000 [q]	HH
4,4'-DDD	72-54-8	11	83	2300	-	-	7.2	11	11	-	-	0.093	0.021	0.021	-	-	0.01	100	0.01	-	-	-	-	-	-	-	-	0.021	0.021	-	0.021	Eco	11	HH
4,4'-DDE	72-55-9	7.7	58	1600	-	-	5.1	7.7	7.7	-	-	0.093	0.021	0.021	-	-	0.01	100	0.01	-	-	-	-	-	-	-	-	0.021	0.021	-	0.021	Eco	7.7	HH
4,4'-DDT	50-29-3	7.7	58	1600	-	-	7	7.7	7.7	-	-	0.093	0.021	0.021	-	-	0.01	100	0.01	-	-	-	-	-	-	-	-	0.021	0.021	-	0.021	Eco	7.7	HH
4,6-Dinitro-2-methylphenol	534-52-1	-	-	-	-	-	49	49	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	HH	49	HH
4-Bromophenyl Phenyl Ether	101-55-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	59-50-7	-	-	-	-	-	62000	62000	62000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62000	HH	62000	HH
4-Chloroaniline	106-47-8	-	-	-	-	-	8.6	8.6	8.6	-	-	-	-	-	40	-	-	-	40	-	-	-	-	-	-	-	-	40	40	-	8.6	HH	8.6	HH
4-Chlorophenyl Phenyl Ether	7005-72-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorotoluene	106-43-4	-	-	-	-	-	72000	72000	72000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72000	HH	72000	HH
4-Isopropyltoluene	99-87-6	-	-	-	-	-	-	-	24000 [bu]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200 [x]	-	200 [x]	Eco	24000 [bu]	HH
4-Methyl-2-pentanone (MIBK)	108-10-1	-	-	-	-	-	53000	53000	53000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1250 [z]	-	1250 [z]	Eco	53000	HH
4-Nitroaniline	100-01-6	-	-	-	-	-	86	86	86	-	-	-	-	-	40	-	-	-	40	-	-	-	-	-	-	-	-	40	40	-	40	Eco	86	HH
4-Nitrophenol	100-02-7	-	-	-	-	-	-	-	180000 [o]	-	-	-	-	-	10	7	-	-	7	-	7	-	-	7	-	-	-	7	7	-	7	Eco	180000 [o]	HH
Acenaphthene	83-32-9	61000	19000	-	-	-	33000	19000	19000	-	***	-	***	***	20	-	-	-	20	-	-	-	-	20	-	-	-	***	***	-	19000	HH	19000	HH
Acenaphthylene	208-96-8	-	-	-	-	-	-	-	23 [g]	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	-	-	-	***	***	-	23 [g]	HH	23 [g]	HH
Acetone	67-64-1	-	-	-	-	-	630000	630000	630000	-	-	-	-	-	-	-	-	1250	1250	-	-	-	-	-	-	-	-	1250	1250	-	1250	Eco	630000	HH
Aldrin	309-00-2	0.13	0.98	27	-	-	0.1	0.13	0.13	-	-	0.022	0.0049	0.0049	-	-	-	25	25	-	-	-	-	-	-	-	-	0.0049	0.0049	-	0.0049	Eco	0.13	HH
Aluminum	7429-90-5	-	-	-	-	-	990000	990000	990000	*	-	-	-	-	50	600	450	107	50	50	-	-	-	50	5	-	5	50	50	31400	31400	UPL	990000	HH
Aniline	62-53-3	-	-	-	-	-	300	300	300	-	-	-	-	-	200	-	-	-	200	-	-	-	-	-	-	-	-	200	200	-	200	Eco	300	HH
Anthracene	120-12-7	-	93000	-	-	-	170000	93000	93000	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	-	-	-	***	***	-	93000	HH	93000	HH
Antimony	7440-36-0	-	-	-	-	-	410	410	410	-	78	-	0.27	0.27	5	-	-	15	5	5	-	-	-	5	0.5	-	0.5	0.27	0.27	0.176	0.27	Eco	410	HH
Aroclor 1016	12674-11-2	-	-	-	-	-	21	21	21	-	-	-	-	-	-	-	-	100	100	-	-	-	-	-	-	2.51	2.51	100	0.371 [aa]	-	0.371 [aa]	Eco	21	HH
Aroclor 1221	11104-28-2	-	-	-	-	-	0.54	0.54	0.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.371 [aa]	-	0.371 [aa]	Eco	0.54	HH
Aroclor 1232	11141-16-5	-	-	-	-	-	0.54	0.54	0.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.371 [aa]	-	0.371 [aa]	Eco	0.54	HH
Aroclor 1242	53469-21-9	-	-	-	-	-	0.74	0.74	0.74	-	-	-	-	-	-	-	1.5	5	1.5	-	-	-	-	-	-	-	-	1.5	0.371 [aa]	-	0.371 [aa]	Eco	0.74	HH
Aroclor 1248	12672-29-6	-	-	-	-	-	0.74	0.74	0.74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.371 [aa]	-	0.371 [aa]	Eco	0.74	HH
Aroclor 1254	11097-69-1	-	-	-	-	-	0.74	0.74	0.74	-	-	-	-	-	-	-	0.7	4	0.7	40	-	-	-	40	10	2.51	2.51	0.7	0.371 [aa]	-	0.371 [aa]	Eco	0.74	HH
Aroclor 1260	11096-82-5	-	-	-	-	-	0.74	0.74	0.74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.371 [aa]	-	0.371 [aa]	Eco	0.74	HH
Aroclor 1262	37324-23-5	-	-	-	-	-	-	-	0.54 [a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.371 [aa]	-	0.371 [aa]	Eco	0.54 [a]	HH
Aroclor 1268	11100-14-4	-	-	-	-	-	-	-	0.54 [a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.371 [aa]	-	0.371 [aa]	Eco	0.54 [a]	HH
Arsenic	7440-38-2	1.7	13	370	-	-	1.6	1.7	1.7	18	-	43	46	18	10	60	10	29	10	10	60	102	9.9	9.9	1	0.25	0.25	18	18	5.40	5.40	UPL	5.40	UPL
Barium	7440-39-3	-	60000	-	-	-	190000	60000	60000	-	330	-	2000	330	500	3000	85	638	85	500	-	283	329	283	5	-	5	330	330	169	330	Eco	60000	HH
Benzo(a)anthracene	56-55-3	2.7	21	590	-	-	2.1	2.7	2.7	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	1.2	25	1.2	***	***	-	2.7	HH	2.7	HH
Benzene	71-43-2	34	340	9500	50	1.2	5.4	1.2	1.2	-	-	-	-	-	3300	3300	-	-	-	-	-	-	-	-	-	-	-	3300	3300	-	1.2	HH	1.2	HH
Benzidine	92-87-5	55	510	14000	-	-	0.0075	55	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	HH	55	HH
Benzo(a)pyrene	50-32-8	0.27	2.1	59	-	-	0.21	0.27	0.27	-	***	-	***	***	-	-	-	125	125	-	-	-	-	-	1.2	25	1.2	***	***	-	0.27	HH	0.27	HH
Benzo(b)fluoranthene	205-99-2	2.7	21	590	-	-	2.1	2.7	2.7	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	1.2	25	1.2	***	***	-	2.7	HH	2.7	HH
Benzo(g,h,i)perylene	191-24-2	-	-	-	-	-	-	-	27 [b]	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	-	-	-	***	***	-	27 [b]	HH	27 [b]	HH
Benzo(j,k)flouranthenes	205-82-3 & 207-08-9	-	-	-	-	-	-	-	27 [bw]	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	-	-	-	***	***	-	27 [bw]	HH	27 [bw]	HH
Benzo(k)fluoranthene	207-08-9	27	210	5900	-	-	21	27	27	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	1.2	25	1.2	***	***	-	27	HH	27	HH
Benzofluoranthenes, Total	56832-73-6	-	-	-	-	-	-	-	2.7 [bx]	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	-	-	-	***	***	-	2.7 [bx]	HH	2.7 [bx]	HH
Benzoic Acid	65-85-0	-	-	-	-	-	2500000	2500000	2500000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200 [x]	-	200 [x]	Eco	2500000	HH
Benzyl Alcohol	100-51-6	-	-	-	-	-	62000	62000	62000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.26 [ah]	-	2.26 [ah]	Eco	62000	HH
Beryllium	7440-41-7	2000	610	17000	-	-	2000	610	610	-	40	-	21	21	10	-	-	83	10	10	-	-	-	10	0.1	-	0.1	21	21	0.659	21	Eco	610	HH
BHC (alpha)	319-84-6	0.34	2.6	74	-	-	0.27	0.34	0.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8 [ac]	-	0.34	HH	0.34	HH
BHC (beta)	319-85-7	-	-	-	-	-	0.96	0.96	0.96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8 [ac]	-	0.96	HH	0.96	HH
BHC (delta)	319-86-8	-	-	-	-	-	-	-	0.34 [c]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8 [ac]	-	0.34 [c]	HH	0.34 [c]	HH
BHC (gamma) Lindane	58-89-9	2	15	420	-	-	2.1	2	2	-	-	-	-	-	8	1000	8	-	-	-	-	-	-	-	-	-	-	8	8	-	2	HH	2	HH
Bis(2-chloroethoxy)methane	111-91-1	-	-	-	-	-	1800	1800	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	730 [ak]	-	730 [ak]	Eco	1800	HH
Bis(2-chloroethyl) Ether	111-44-4	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	HH	1	HH
Bis(2-chloroisopropyl) Ether	39638-32-9 or 108-60-1	-	-	-	-	-	-	-	1 [f]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 [f]	HH	1 [f]	HH
Bis(2-ethylhexyl) Phthalate	117-81-7	150	1200	33000	-	-	120	150	150	-	-	-	-	-	4.5	1020	4.5	-	-	-	-	-	-	-	-	-	-	4.5	4.5	-	4.5	Eco	150	HH
Bromobenzene	108-86-1	-	-	-	-	-	1800	1800	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1800	HH	1800	HH
Bromochloromethane	74-97-5	-	-	-	-	-	-	-	1.9 [s]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	730 [ak]	-	1.9 [s]	HH	1.9 [s]	HH

Table J-1a - Miniumum Potentially Applicable Soil SLVs for Identification of Preliminary COPCs
Bradford Island, Upland Operable Unit
(2 of 3)

Analyte	CAS #	Candidate Human Health Soil Screening Level Values (mg/kg)								Candidate Ecological Soil Screening Level Values (mg/kg)																					
										USEPA Eco SSL[am-be]						DEQ Level II SLV[ar]						ORNL					USEPA TRVs[bi]								
		DEQ Soil Ingest Occupational RBC [u]	DEQ Soil Ingest Construction RBC [u]	DEQ Soil Ingest Excavation RBC [u]	DEQ Soil Volatilize Outdoor Occupational RBC [u]	DEQ Soil Vapor Intrusion Occupational RBC [u]	USEPA Soil Indust RSL [v]	Selected Human Health Soil SLV [w]	Selected Human Health Soil SLV with Surrogates [w]	Plant Eco SSL	Inverte-brate Eco SSL	Avian Eco SSL	Mammal Eco SSL	Lowest USEPA Eco SSL	Plant Level II SLV	Inverte-brate Level II SLV	Avian Level II SLV	Mammal Level II SLV	Lowest DEQ Level II SLV	Plant ORNL[bg]	Inverte-brate ORNL[bh]	Avian ORNL PRG [bi]	Mammal ORNL PRG [bi]	Lowest ORNL	Plant TRV	Inverte-brate TRV	Lowest USEPA TRV	Selected Soil Ecological SLV [bk]	Selected Ecological Soil SLV with Surrogates [bk]	Site-Specific Reference UPL	Selected Min. Potentially Applicable Soil SLV [bl] (0-1 & 0-3 ft bgs)	SLV (0-1 & 0-3 ft bgs): HH or Eco	Selected Min. Potentially Applicable Soil SLV (0-10 ft bgs) [bl]	SLV (0-10 ft bgs): HH
Bromodichloromethane	75-27-4	15	210	5800	11	1.9	1.4	1.9	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	730 [ak]	-	1.9	HH	1.9	HH
Bromoform	75-25-2	360	2700	76000	-	-	220	360	360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	360	HH	360	HH
Bromomethane	74-83-9	710	330	9200	700	17	32	17	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	730 [ak]	-	17	HH	17	HH
Butyl Benzyl Phthalate	85-68-7	-	-	-	-	-	910	910	910	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.45 [ad]	-	0.45 [ad]	Eco	910	HH
Cadmium	7440-43-9	500	150	4300	-	-	800 [t]	150	150	32	140	0.77	0.36	0.36	4	20	6	125	4	4	20	4.2	6	4	0.2	10	0.2	0.36	0.36	0.271	0.36	Eco	150	HH
Calcium	7440-70-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10400	10400	UPL	10400	UPL
Carbazole	86-74-8	-	-	-	-	-	-	-	1000 [bs]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.26 [ah]	-	2.26 [ah]	Eco	1000 [bs]	HH
Carbon Disulfide	75-15-0	-	-	-	-	-	3700	3700	3700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000 [al]	-	1000 [al]	Eco	3700	HH
Carbon Tetrachloride	56-23-5	15	150	4100	26	0.63	3	0.63	0.63	-	-	-	-	-	-	1000	-	2000	1000	-	-	-	-	-	-	-	-	1000	1000	-	0.63	HH	0.63	HH
Carbon, Total Organic	7440-44-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordane (alpha)	5103-71-9	-	-	-	-	-	-	-	7.2 [d]	-	-	-	-	-	9	250	9	-	-	-	-	-	-	-	-	-	-	9	9 [ae]	-	7.2 [d]	HH	7.2 [d]	HH
Chlordane (gamma)	5103-74-2	-	-	-	-	-	-	-	7.2 [d]	-	-	-	-	-	9	250	9	-	-	-	-	-	-	-	-	-	-	9	9 [ae]	-	7.2 [d]	HH	7.2 [d]	HH
Chlordane (technical)	12789-03-6	7.2	55	1500	-	-	6.5	7.2	7.2	-	-	-	-	-	9	250	9	-	-	-	-	-	-	-	-	-	-	9	9 [ae]	-	7.2	HH	7.2	HH
Chlorobenzene	108-90-7	8300	4300	-	-	-	1400	4300	4300	-	-	-	-	-	-	40	-	-	40	-	40	-	-	40	-	-	-	40	40	-	40	Eco	4300	HH
Chloroethane	75-00-3	-	-	-	-	-	61000	61000	61000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61000	HH	61000	HH
Chloroform	67-66-3	25	380	11000	17	0.41	1.5	0.41	0.41	-	-	-	-	-	-	-	-	1875	1875	-	-	-	-	-	-	-	-	1875	1875	-	0.41	HH	0.41	HH
Chloromethane	74-87-3	25000	25000	-	-	300	500	300	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	730 [ak]	-	300	HH	300	HH
Chromium	7440-47-3	190	920	26000	-	-	5.6	190	190 [bv]	-	-	26	34	26	-	-	-	410	410	1	0.4	16.1	110	0.4	0.018	-	0.018	26	26	28.1	28.1	UPL	190 [bv]	HH
Chrysene	218-01-9	270	2100	59000	-	-	210	270	270	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	1.2	25	1.2	***	***	-	270	HH	270	HH
cis-1,2-Dichloroethene	156-59-2	10000	3100	86000	-	-	10000	3100	3100	-	-	-	-	-	-	2500	2500	-	-	-	-	-	-	-	-	-	-	2500	2500	-	2500	Eco	3100	HH
cis-1,3-Dichloropropene	10061-01-5	-	-	-	-	-	8.1	8.1	8.1 [e]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.1 [e]	HH	8.1 [e]	HH
Cobalt	7440-48-4	-	-	-	-	-	300	300	300	13	-	120	230	13	20	1000	-	150	20	20	-	-	20	-	-	-	-	13	13	19.9	19.9	UPL	300	HH
Copper	7440-50-8	41000	12000	-	-	-	41000	12000	12000	70	80	28	49	28	100	50	190	390	50	100	50	515	370	50	1	32	1	28	28	56.7	56.7	UPL	12000	HH
Dalapon	75-99-0	-	-	-	-	-	18000	18000	18000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18000	HH	18000	HH
Dibenz(a,h)anthracene	53-70-3	0.27	2.1	59	-	-	0.21	0.27	0.27	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	1.2	25	1.2	***	***	-	0.27	HH	0.27	HH
Dibenzofuran	132-64-9	-	-	-	-	-	1000	1000	1000	-	-	-	-	-	-	-	-	0.002	0.002	-	-	-	-	-	-	-	-	0.002	0.002	-	0.002	Eco	1000	HH
Dibromochloromethane	124-48-1	34	260	7200	-	-	3.3	34	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	730 [ak]	-	34	HH	34	HH
Dibromomethane	74-95-3	-	-	-	-	-	110	110	110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	730 [ak]	-	110	HH	110	HH
Dibutyltin	1002-53-5	-	-	-	-	-	180	180	180	-	-	-	-	-	-	-	28	1300	28	-	-	-	-	-	-	-	-	28	28 [ag]	-	28 [ag]	Eco	180	HH
Dicamba	1918-00-9	-	-	-	-	-	18000	18000	18000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18000	HH	18000	HH
Dichlorodifluoromethane	75-71-8	-	-	-	-	-	780	780	780	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	730 [ak]	-	730 [ak]	Eco	780	HH
Dichloromethane (Methylene Chloride)	75-09-2	310	2700	75000	830	20	53	20	20	-	-	-	-	-	-	730	730	-	-	-	-	-	-	-	-	-	-	730	730	-	20	HH	20	HH
Dichlorprop	120-36-5	-	-	-	-	-	-	-	4900 [br]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.021 [aj]	-	0.021 [aj]	Eco	4900 [br]	HH
Dieldrin	60-57-1	0.13	1	29	-	-	0.11	0.13	0.13	-	-	0.022	0.0049	0.0049	-	-	0.3	3	0.3	-	-	-	-	-	-	-	-	0.0049	0.0049	-	0.0049	Eco	0.13	HH
Diesel Range Organics	68334-30-5	70000	23000	-	-	-	-	23000	23000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23000	HH	23000	HH
Diethyl Phthalate	84-66-2	-	-	-	-	-	490000	490000	490000	-	-	-	-	-	100	-	-	250000	100	100	-	-	-	100	-	-	-	100	100	-	100	Eco	490000	HH
Dimethyl Phthalate	131-11-3	-	-	-	-	-	-	-	150 [i]	-	-	-	-	-	-	200	-	-	200	-	200	-	-	200	-	-	-	200	200	-	150 [i]	HH	150 [i]	HH
Di-n-butyl Phthalate	84-74-2	-	-	-	-	-	62000	62000	62000	-	-	-	-	-	200	-	0.45	30000	0.45	200	-	-	-	200	-	-	-	0.45	0.45	-	0.45	Eco	62000	HH
Di-n-octyl Phthalate	117-84-0	-	-	-	-	-	-	-	150 [i]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.45 [ad]	-	0.45 [ad]	Eco	150 [i]	HH
Dinoseb	88-85-7	-	-	-	-	-	620	620	620	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	620	HH	620	HH
Endosulfan I	959-98-8	4600	1400	40000	-	-	3700	1400	1400 [f]	-	-	-	-	-	-	-	42	20	20	-	-	-	-	-	-	-	-	20	20 [f]	-	20 [f]	Eco	1400 [f]	HH
Endosulfan II	33213-65-9	4600	1400	40000	-	-	3700	1400	1400 [f]	-	-	-	-	-	-	-	42	20	20	-	-	-	-	-	-	-	-	20	20 [f]	-	20 [f]	Eco	1400 [f]	HH
Endosulfan Sulfate	1031-07-8	4600	1400	40000	-	-	3700	1400	1400 [f]	-	-	-	-	-	-	-	42	20	20	-	-	-	-	-	-	-	-	20	20 [f]	-	20 [f]	Eco	1400 [f]	HH
Endrin	72-20-8	230	71	2000	-	-	180	71	71	-	-	-	-	-	-	-	0.04	5	0.04	-	-	-	-	-	-	-	-	0.04	0.0049 [bm]	-	0.0049 [bm]	Eco	71	HH
Endrin Aldehyde	7421-93-4	-	-	-	-	-	-	-	71 [t]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0049 [bm]	-	0.0049 [bm]	Eco	71 [t]	HH
Endrin Ketone	53494-70-5	-	-	-	-	-	-	-	71 [t]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0049 [bm]	-	0.0049 [bm]	Eco	71 [t]	HH
Ethylbenzene	100-41-4	140	1600	44000	160	12	27	12	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.26 [ah]	-	2.26	Eco	12	HH
Fluoranthene	206-44-0	29000	8900	-	-	-	22000	8900	8900	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	-	-	-	***	***	-	8900	HH	8900	HH
Fluorene	86-73-7	41000	12000	-	-	-	22000	12000	12000	-	***	-	***	***	-	30	-	-	30	-	30	-	-	30	-	-	-	***	***	-	12000	HH	12000	HH
Gasoline Range Organics	8006-61-9	22000	13000	-	100000	-	-	13000	13000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13000	HH	13000	HH
Heptachlor	76-44-8	0.48	3.7	100	-	-	0.38	0.48	0.48	-	-	-	-	-	-	-	-	15	15	-	-	-	-	-	-	1	-	1	15	15	-	0.48	HH	0.48	HH
Heptachlor Epoxide	1024-57-3	0.24	1.8	51	-	-	0.19	0.24	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15 [y]	-	0.24	HH	0.24	HH
Hexachlorobenzene	118-74-1	1.8	14	380	-	-	1.1	1.8	1.8	-	-	-	-	-	-	1000	-	-	1000	-	-	-	-	-	-	-	-	1000	1000	-	1.8	HH	1.8	HH
Hexachlorobutadiene	87-68-3	-	-	-	-	-	22	22	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	HH	22	HH
Hexachlorocyclopentadiene	77-47-4	-	-	-	-	-	3700	3700	3700	-	-	-	-	-	10	-	-	-	10	10	-	-	-	10	0.1	-	0.1	10	10	-	10	Eco	3700	HH
Hexachloroethane	67-72-1	150	240	6600	-	-	120	150	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	HH	150	HH
Indeno(1,2,3-cd)pyrene	193-39-5	2.7	21	590	-	-	2.1	2.7	2.7	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	1.2	25	1.2	***	***	-	2.7	HH	2.7	HH
Iron	7439-89-6	-	-	-	-	-	720000	720000	720000	**	**	**	**	-	10	200	-	-	10	-	-	-	-	-	-	-	-	10	10	36900	36900	UPL	720000	HH
Isophorone	78-59-1	-	-	-	-	-	1800	1800	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1800	HH	1800	HH
Isopropylbenzene	98-82-8	53000	24000	-	-	-	11000	24000	24000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.26 [ah]	-	2.26 [ah]	Eco	24000	HH
Lead	7439-92-1	800	800	800	-	-	800	800	800	120	1700	11	56	11	50	500	16	4000	16	50	500	40.5	740	40.5	4.6	100	4.6	11	11	25.5	25.5	UPL	800	HH
m,p-Xylenes	179601-23-1	25000	19000	-	-	-	-	19000	2700 [h]	-	-	-	-	-	-	-	-	120	120	-	-	-	-	-	-	-	-	120	120 [bq]	-	120 [bq]	Eco	2700 [h]	HH
Magnesium	7439-95-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12400	12400	UPL	12400	UPL
Manganese	7439-96-5	23000	7200	-	-	-	23000 [l]	7200	7200	220	450	4300	4000	220	500	100	4125	11000	100	500	-	-	500	-	-	-	-	220	220	885	885	UPL	7200	HH
MCPA	94-74-6	380	120	3300	-	-	310	120	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.021 [aj]	-	0.021 [aj]	Eco	120	HH
MCPP	93-65-2	-	-	-	-	-	620	620	620	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.021 [aj]	-	0.021 [aj]	Eco	620	HH
Mercury	7439-97-6	310	93	2600	-	-	34	93	93	-	-	-	-	-	0.3	0.1	1.5	73	0.1	0.3	0.1	0.00051	0.146	0.00051	-	2.5	2.5	0.1	0.00051 [bn]	0.0660	0.066	UPL	93	HH
Methoxychlor	72-43-5	-	-	-	-	-	3100	3100	3100	-	-	-	-	-	-	500	500	-	-	-	-	-	-	-	-	-	-	500	500	-	500	Eco	3100	HH
Monobutyltin	78763-54-9	-	-	-	-	-	-	-	180 [bo]	-	-	-	-	-	28	1300	28	-	-	-	-	-	-	-	-	-	-	28	28 [ag]	-	28 [ag]	Eco	180 [bo]	HH
Naphthalene	91-20-3	23	580	16000	27	99	18	23	23	-	***	-	***	***	10	-	-	3900	10	-	-	-	-	-	-	-	-	***	***	-	23	HH	23	HH
n-Butylbenzene	104-51-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	7440-02-0	20000	6100	-	-	-	20000	6100	6100	38	280	210	130	38	30	200	320	625	30	30	200	121	246	30	25	100	25	38	38	26.5	38	Eco	6100	HH
Nitrobenzene	98-95-3	-	-	-	-	-	24	24	24	-	-	-	-	-	8	40	-	-	8	-	40	-	-	40	-	2.26	2.26	8	8	-	8	Eco	24	HH
N-Nitrosodimethylamine	62-75-9	-	-	-	-	-	0.034	0.034	0.034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.034	HH	0.034	HH
N-Nitrosodi-n-propylamine	621-64-7	-	-	-	-	-	0.25	0.25	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	HH	0.25	HH
N-Nitrosodiphenylamine	86-30-6	-	-	-	-	-	350	350	350	-	-	-	-	-	-	20	-	-	20	-	20	-	-	20	-	-	-	20	20	-	20	Eco	350	HH
n-Propylbenzene	103-65-1	-	-	-	-	-	21000	21000	21000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.26 [ah]	-	2.26 [ah]	Eco	21000	HH
o-Xylene	95-47-6	-	-	-	-	-	19000	19000	19000	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	1	1	-	1	Eco	19000	HH
p-cresol (4-Methylphenol)	106-44-5	-	-	-	-	-	3100	3100	3100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50 [p]	-	50 [p]	Eco	3100	HH
Pentachlorophenol	87-86-5	13	100	2900	-	-	9	13	13	5	31	2.1	2.8	2.1	3	4	-	30	3	3	6	-	-	3	1.73	10	1.73	2.1	2.1	-	2.1	Eco	13	HH
Phenanthrene	85-01-8	-	-	-	-	-	-	-	93000 [bt]	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	-	-	-	***	***	-	93000 [bt]	HH	93000 [bt]	HH
Phenol	108-95-2	-	-	-	-	-	180000	180000	180000	-	-	-	-	-	70	30	-	-	30	70	30	-	-	30	-	-	-	30	30	-	30	Eco	180000	HH
Potassium	7440-09-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2050	2050	UPL	2050	UPL
Pyrene	129-00-0	21000	6700	-	-	-	17000	6700	6700	-	***	-	***	***	-	-	-	-	-	-	-	-	-	-	-	-	-	***	***	-	6700	HH	6700	HH
Residual Range Organics	RRO	-	40000	-	-	-	-	40000	40000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40000	HH	40000	HH
sec-Butylbenzene	135-98-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.26 [ah]	-	2.26 [ah]	Eco	-	-
Selenium	7782-49-2	-	-	-	-	-	5100	5100	5100	0.52	4.1	1.2	0.63	0.52	1	70	2	25	1	1	70	0.000001	0.000001	0.000001	0.05	7.7	0.05	0.52	0.52	0.500	0.52	Eco	5100	HH
Silver	7440-22-4	5100	1500	43000	-	-	5100	1500	1500	560	-	4.2	14	4.2	2	50	-	-	2	2	-	-	-	2	0.02	-	0.02	4.2	4.2	0.187	4.2	Eco	1500	HH
Sodium	7440-23-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	341	341	UPL	341	UPL
Solids, Total	TS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	100-42-5	-	51000	-	-	-	36000	51000	51000	-	-	-	-	-	300	-	-	-	300	300	-	-	-	300	-	-	-	300	300	-	300	Eco	51000	HH
tert-Butylbenzene	98-06-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.26 [ah]	-	2.26 [ah]	Eco	-	-
Tetrabutyltin	1461-25-2	-	-	-	-	-	-	-	180 [bo]	-	-	-	-	-	-	-	28	1300	28	-	-	-	-	-	-	-	-	-	28	28 [ag]	-	28 [ag]	Eco	180 [bo]	HH
Tetrachloroethene (PCE)	127-18-4	5.1	40	1100	66	1.6	2.6	1.6	1.6	-	-	-	-	-	10	-	-	80	10	-	-	-	-	-	-	-	-	10	10	-	1.6	HH	1.6	HH
Thallium	7440-28-0	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	1	-	-	2.1	1	0.01	-	0.01	1	1	0.203	1	Eco	0.203	UPL
Toluene	108-88-3	77000	24000	-	-	-	45000	24000	24000	-	-	-	-	-	200	-	-	1440	200	200	-	-	-	200	-	-	-	200	200	-	200	Eco	24000	HH
Total PCBs		0.98	4.4	120	-	-	0.74	0.74	0.74 [bp]	-	-	-	-	-	40	-	-	4	4	40	-	0.655	0.371	0.371	-	-	-	4	0.371 [aa]	-	0.371 [aa]	Eco	0.74 [bp]	HH

Table J-1a - Miniumum Potentially Applicable Soil SLVs for Identification of Preliminary COPCs
Bradford Island, Upland Operable Unit
(3 of 3)

Analyte	CAS #	Candidate Human Health Soil Screening Level Values (mg/kg)								Candidate Ecological Soil Screening Level Values (mg/kg)																			
										USEPA Eco SSL[am-be]					DEQ Level II SLV[ar]					ORNL					USEPA TRVs[bi]						
		DEQ Soil Ingest Occupational RBC [u]	DEQ Soil Ingest Construction RBC [u]	DEQ Soil Ingest Excavation RBC [u]	DEQ Soil Volatilize Outdoor Occupational RBC [u]	DEQ Soil Vapor Intrusion Occupational RBC [u]	USEPA Soil Indust RSL [v]	Selected Human Health Soil SLV [w]	Selected Human Health Soil SLV with Surrogates [w]	Plant Eco SSL	Inverte-brate Eco SSL	Avian Eco SSL	Mammal Eco SSL	Lowest USEPA Eco SSL	Plant Level II SLV	Inverte-brate Level II SLV	Avian Level II SLV	Mammal Level II SLV	Lowest DEQ Level II SLV	Plant ORNL[bg]	Inverte-brate ORNL[bh]	Avian ORNL PRG [bi]	Mammal ORNL PRG [bi]	Lowest ORNL	Plant TRV	Inverte-brate TRV	Lowest USEPA TRV	Selected Soil Ecological SLV [bk]	Selected Ecological Soil SLV with Surrogates [bk]	Site-Specific Reference UPL	Selected Min. Potentially Applicable Soil SLV (0-1 & 0-3 ft bgs) [bl]	SLV (0-1 & 0-3 ft bgs): HH or Eco	Selected Min. Potentially Applicable Soil SLV (0-10 ft bgs) [bl]	SLV (0-10 ft bgs): HH
Total PAH		-	-	-	-	-	-	-	-	-	***	-	***		-	-	-	-		-	-	-	-		-	-		-		-	-	-	-
Total LPAH		-	-	-	-	-	-	-	-	-	29	-	100	29	-	-	-	-		-	-	-	-		-	-		29	29	-	29	Eco	-	-
Total HPAH		-	-	-	-	-	-	-	-	-	18	-	1.1	1.1	-	-	-	-		-	-	-	-		1.2	25	1.2	1.1	1.1	-	1.1	Eco	-	-
Toxaphene	8001-35-2	2	15	420	-	-	1.6	2	2	-	-	-	-		-	-	-	1000	1000	-	-	-	-		-	-	-	1000	1000	-	2	HH	2	HH
trans-1,2-Dichloroethene	156-60-5	9200	4500	-	-	200	690	200	200	-	-	-	-		-	-	-	2500	2500	-	-	-	-		-	-	-	2500	2500	-	200	HH	200	HH
trans-1,3-Dichloropropene	10061-02-6	-	-	-	-	-	8.1	8.1	8.1 [e]	-	-	-	-		-	-	-	-		-	-	-	-		-	-	-	-	-	-	8.1 [e]	HH	8.1 [e]	HH
Tributyltin	688-73-3	-	-	-	-	-	180	180	180	-	-	-	-		-	-	28	1300	28	-	-	-	-		-	-	-	28	28 [aq]	-	28 [aq]	Eco	180	HH
Trichloroethene (TCE)	79-01-6	3.9	43	1200	4.3	0.13	14	0.13	0.13	-	-	-	-		-	-	-	40	40	-	-	-	-		-	-	-	40	40	-	0.13	HH	0.13	HH
Trichlorofluoromethane	75-69-4	-	63000	-	-	-	3400	63000	63000	-	-	-	-		-	-	-	-		-	-	-	-		-	-	-	-	730 [ak]	-	730 [ak]	Eco	63000	HH
Vanadium	7440-62-2	-	-	-	-	-	72	72	72	-	-	7.8	280	7.8	2	-	47	25	2	2	-	-	55	2	-	-	-	7.8	7.8	104	104	UPL	104	UPL
Vinyl Acetate	108-05-4	-	-	-	-	-	4100	4100	4100	-	-	-	-		-	-	-	-		-	-	-	-		-	-	-	-	-	-	4100	HH	4100	HH
Vinyl Chloride	75-01-4	3.9	30	830	89	2.2	1.7	2.2	2.2	-	-	-	-		-	-	-	20	20	-	-	-	-		-	-	-	20	20	-	2.2	HH	2.2	HH
Zinc	7440-66-6	-	-	-	-	-	310000	310000	310000	160	120	46	79	46	50	200	60	20000	50	50	200	8.5	1600	8.5	0.9	199	0.9	46	46	71.7	71.7	UPL	310000	HH

Note

Human Health Screening Levels correspond to a target risk of 1E-06 for carcinogens and target hazard quotient of 1.0 for non-carcinogens for the selected receptor and pathway.
MCLs incorporate considerations of risk as well as feasibility in attaining target level.
- = No benchmark available
DEQ = Oregon Department of Environmental Quality
Eco SSL = Ecological Soil Screening Level
USEPA = US Environmental Protection Agency
HMW = High Molecular Weight
LMW = Low Molecular Weight
MCL = Maximum Contaminant Level
mg/kg = milligram per kilogram dry weight
ORNL = Oak Ridge National Laboratory
PAH = Polycyclic Aromatic Hydrocarbons
PRG = Preliminary Remediation Goal
RBC = Risk Based Concentrations
RI = Remedial Investigation
RSL = Regional Screening Level
SLV = Screening Level Value
TRV = Toxicity Reference Value
UPL = Upper Prediction Limit

* = Eco SSL is dependent on pH.

** = Eco SSL is a determination of the geochemical conditions (i.e., pH and Eh at a minimum) of the environmental setting, as well as the presence of iron floc and the toxic metals, is critical to the determination of the relative importance of iron at a site.

*** = PAH Eco SSLs are based on Total LMW PAHs (Invert. Eco SSL = 29 mg/kg and Mammal Eco SSL = 100 mg/kg) and Total HMW PAHs (Invert. Eco SSL = 18 mg/kg and Mammal Eco SSL = 1.1 mg/kg).
LMW PAHs include: 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, and Phenanthrene.
HMW PAHs include : Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(j,k)flouranthenes, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, and Pyrene.

[a] Aroclor 1221 was used as a surrogate because there was no chemical specific SLV.
[b] Toxic Equivalency Factors for Benzo(g,h,i)perylene (0.01) was applied to the Benzo(a)pyrene SLV because there was no chemical specific SLV.
[c] BHC alpha was used as a surrogate, because there was no chemical-specific SLV, and BHC alpha was the lowest BHC.
[d] Chlordane (technical) was used as a surrogate because there was no chemical specific SLV.
[e] 1,3- Dichloropropene was used as a surrogate because there was no chemical specific SLV.
[f] Endosulfan was used as a surrogate because there was no chemical specific SLV.
[g] The SLV for naphthalene was used as a surrogate because there was no chemical-specific SLV.
[h] Xylene (mixed) was used as a surrogate because there was no chemical specific SLV.
[i] Dibutyltin compounds was used as a surrogate because there was no chemical specific SLV.
[j] Manganese (water) was used as opposed to Manganese (diet).
[k] Cadmium (diet) was used as opposed to Cadmium (water).
[l] Bis(2-ethylhexyl) Phthalate was used as a surrogate, because there was no chemical-specific SLV, and Bis(2-ethylhexyl) Phthalate was the lowest phthalate.
[m] 1,4- Dichlorobenzene was used as a surrogate because there was no chemical specific SLV.
[n] 1,2- Dichloropropane was used as a surrogate because there was no chemical specific SLV.
[o] Phenol was used as a surrogate because there was no chemical specific SLV.
[p] 2-Methylphenol was used as a surrogate because there was no chemical specific SLV.
[q] 2-Nitroaniline was used as a surrogate because there was no chemical specific SLV.
[r] Bis(2-chloroethyl) ether was used as a surrogate because there was no chemical specific SLV.
[s] Bromodichloromethane was used as a surrogate because there was no chemical specific SLV.
[t] Endrin was used as a surrogate because there was no chemical specific SLV.
[u] DEQ 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
[v] US Environmental Protection Agency (USEPA) 2009. Regional Screening Level. December.
[w] **Human Health Hierarchical SLV Selection: 1. DEQ RBCs (the minimum of Ingest Occupational, Ingest Construction, Ingest Excavation, Volatize Outdoor, and Vapor Intrusion) and 2. USEPA Soil RSL.**
[x] Toluene was used as a surrogate because there was no chemical specific SLV.
[y] Heptachlor was used as a surrogate because there was no chemical specific SLV.
[z] Acetone was used as a surrogate because there was no chemical specific SLV.
[ab] The lowest PRG (mammal) for Total PCBs was used as a surrogate because the SLV is based on bioaccumulation and is more conservative than the DEQ Level II individual aroclor SLVs and Total PCB SLV, which do not take into account bioaccumulation.
[ab] Benzo(a)anthracene was used as a surrogate because there was no chemical-specific SLV, and benzo(a)anthracene had the lowest SLV of the HMW PAHs.
[ac] BHC gamma was used as a surrogate, because there was no chemical-specific SLV, and BHC gamma was the lowest BHC.
[ad] di-n-butyl Phthalate was used as a surrogate because there was no chemical specific SLV, and di-n-butyl Phthalate was the lowest of the phthalates.
[ae] Chlordane (CAS # 57-74-9) was used as a surrogate.
[af] Naphthalene was used as a surrogate because there was no chemical-specific SLV, and naphthalene had the lowest SLV of the LMW PAHs.
[ag] Tributyltin oxide was used as a surrogate, because there was no chemical-specific SLV.
[ah] 1,3- Dichlorobenzene was used as a surrogate because there was no chemical specific SLV, and it had the SLV lowest of the non-methylbenzenes.
[ai] 1,2- Dichloroethane was used as a surrogate because there was no chemical specific SLV.
[aj] DDT (and metabolites) was used as a surrogate because there was no chemical specific SLV, and DDT was the lowest of the herbicides/pesticides.
[ak] Dichloromethane was used as a surrogate because there was no chemical specific SLV.
[al] Carbon tetrachloride was used as a surrogate because there was no chemical specific SLV.
[am] USEPA 2005. Ecological Soil Screening Levels for Antimony. Interim Final. February. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-61.
[an] USEPA 2005. Ecological Soil Screening Levels for Arsenic. Interim Final. March. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-62.
[ao] USEPA 2005. Ecological Soil Screening Levels for Barium. Interim Final. February. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7- 63.
[ap] USEPA 2005. Ecological Soil Screening Levels for Beryllium. Interim Final. February. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7- 64.
[aq] USEPA 2005. Ecological Soil Screening Levels for Cadmium. Interim Final. March. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-65.
[ar] USEPA 2005. Ecological Soil Screening Levels for Chromium. Interim Final. March. Revised April 2008. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7- 66.
[as] USEPA 2005. Ecological Soil Screening Levels for Cobalt. Interim Final. March. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-67.
[at] USEPA 2006. Ecological Soil Screening Levels for Copper. Interim Final. July. Revised February 2007. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-68.
[au] USEPA 2005. Ecological Soil Screening Levels for Dieldrin. Interim Final. March. Revised April 2007. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-56.
[av] USEPA 2007. Ecological Soil Screening Levels for DDT and Metabolites. April. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-57.
[aw] USEPA 2005. Ecological Soil Screening Levels for Lead. Interim Final. March. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-70.
[ax] USEPA 2007. Ecological Soil Screening Levels for Manganese Interim Final. April. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-71.
[ay] USEPA 2007. Ecological Soil Screening Levels for Nickel. Interim Final. March. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-76.
[az] USEPA 2007. Ecological Soil Screening Levels for Polycyclic Aromatic Hydrocarbons (PAHs). June. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-78.
[ba] USEPA 2005. Ecological Soil Screening Levels for Pentachlorophenol. Interim Final. March. Revised April 2007. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-58.
[bb] USEPA 2007. Ecological Soil Screening Levels for Selenium. Interim Final. July. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72.
[bc] USEPA 2006. Ecological Soil Screening Levels for Silver. Interim Final. September U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-77.
[bd] USEPA 2005. Ecological Soil Screening Levels for Vanadium. Interim Final. April. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-75.
[be] USEPA 2007. Ecological Soil Screening Levels for Zinc. Interim Final. June. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-73.
[bf] DEQ 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001
[bg] Efroymson RA, ME Wil, GW Suter II, and AC Wooten. 1997. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. November. ORNL. ES/ER/TM-85/R3.
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[bj] USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.
[bk] **Ecological Hierarchical SLV Selection: 1. USEPA Eco SSL, 2. DEQ Level II SLV, 3. ORNL, 4. USEPA TRV (Plants and Soil Invertebrates Only).**
[bl] **The Soil SLV Selection for Preliminary COPC Screening: <u>For 0-1 and 0-3 ft bgs -</u> Most conservative of the Selected Human Health and Ecological SLVs with Surrogates. <u>For 0-10 ft bgs -</u> Selected Human Health SLV with Surrogates.**
[bm] The lowest Eco SSL (mammal) for Dieldrin was used as a surrogate because the SLV is based on bioaccumulation and is more conservative than the DEQ Level II Endrin SLV, which does not take into account bioaccumulation.
[bn] The lowest PRG (avian) for Mercury was used as a surrogate because the SLV is based on bioaccumulation and is more conservative than the DEQ Level II Mercury SLV, which does not take into account bioaccumulation.
[bo] Tributyltin was used as a surrogate because there was no chemical specific SLV.
[bp] The RSL for Total PCBs was selected as the SLV per DEQ.
[bq] The SLV for Xylenes (mixed) was selected as a surrogate because there was no chemical specific SLV.
[br] The SLV for 2,4,5-TP (Silvex) was selected as a surrogate because there was no chemical specific SLV.
[bs] The SLV for dibenzofuran was selected as a surrogate because there was no chemical specific SLV.
[bt] The SLV for anthracene was selected as a surrogate because there was no chemical specific SLV.
[bu] The SLV for isopropylbenzene (cumene) was selected as a surrogate because there was no chemical specific SLV.
[bv] The SLV for chromium IV was used for total chromium, as a worst case scenario
[bw] Benzo(k)fluoranthene was used as a surrogate because there was no chemical-specific SLV.
[bx] Benzo(b)fluoranthene was used as a surrogate because there was no chemical-specific SLV and benzo(b)fluoranthene had the lowest SLV of the benzofluoranthenes.

Table J-1b - Miniumum Potentially Applicable Direct Contact Water SLVs for Identification of Preliminary COPCs
Bradford Island, Upland Operable Unit
(1 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Direct Contact (ug/L)									Canidate Ecological Water Screening Level Values (ug/L)														
		DEQ GW Ingest Residential RBC [m]	DEQ GW Ingest Occupational RBC [m]	DEQ GW Volatilize Outdoor Air Occupational RBC [m]	DEQ GW Vapor Intrusion Occupational RBC [m]	DEQ GW Excavation Construct/Exca RBC [m]	USEPA Tapwater RSL [n]	DEQ MCL [o]	Direct Contact Selected HH SLV [s]	Direct Contact Selected HH Water SLV w/ Surrogates [s]	USEPA Freshwater NRWQC [p]	DEQ Freshwater Table 33A WQC[q]	DEQ Level II Aquatic SLV[ad]	DEQ Level II Bird SLV[af]	DEQ Level II Mammal SLV[af]	Lowest DEQ Level II SLV[af]	ORNL Tier II Chronic Value[ag]	USEPA PAH FCV[ah]	Canadian WQG[ai]	NOAA SQuiRTs Freshwater Chronic [aj]	Selected Ecological SLV [ak]	Selected Ecological Water SLV with Surrogates [ak]	Selected Min. Potentially Applicable Water SLV (Total) [al]	SLV (Total): HH or Eco	Selected Min. Potentially Applicable Water SLV (Dissolved) [am]	SLV (Dissolved): HH or Eco
2-Chlorobiphenyl	2051-60-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Chlorobiphenyl	2051-61-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorobiphenyl	2051-62-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-Dichlorobiphenyl	13029-08-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3-Dichlorobiphenyl	16605-91-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3'-Dichlorobiphenyl	25569-80-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorobiphenyl	33284-50-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4'-Dichlorobiphenyl	34883-43-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,5-Dichlorobiphenyl	34883-39-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dichlorobiphenyl	33146-45-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobiphenyl	2050-67-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4-Dichlorobiphenyl	2974-92-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4'-Dichlorobiphenyl	2974-90-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,5-Dichlorobiphenyl	34883-41-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-Dichlorobiphenyl	2050-68-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3-Trichlorobiphenyl	38444-78-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4-Trichlorobiphenyl	37680-66-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',5-Trichlorobiphenyl	37680-65-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',6-Trichlorobiphenyl	38444-73-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3'-Trichlorobiphenyl	38444-84-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4-Trichlorobiphenyl	55702-46-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4'-Trichlorobiphenyl	38444-85-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,5-Trichlorobiphenyl	55720-44-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,6-Trichlorobiphenyl	55702-45-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4-Trichlorobiphenyl	55712-37-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',5-Trichlorobiphenyl	38444-81-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',6-Trichlorobiphenyl	38444-76-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,4'-Trichlorobiphenyl	7012-37-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorobiphenyl	15862-07-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorobiphenyl	35693-92-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4',5-Trichlorobiphenyl	16606-02-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4',6-Trichlorobiphenyl	38444-77-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4'-Trichlorobiphenyl	38444-86-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',5'-Trichlorobiphenyl	37680-68-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4-Trichlorobiphenyl	37680-69-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',5-Trichlorobiphenyl	38444-87-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4,4'-Trichlorobiphenyl	38444-90-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4,5-Trichlorobiphenyl	53555-66-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4',5-Trichlorobiphenyl	38444-88-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3'-Tetrachlorobiphenyl	38444-93-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4-Tetrachlorobiphenyl	52663-59-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4'-Tetrachlorobiphenyl	36559-22-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5-Tetrachlorobiphenyl	70362-46-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5'-Tetrachlorobiphenyl	41464-39-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,6-Tetrachlorobiphenyl	70362-45-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,6'-Tetrachlorobiphenyl	41464-47-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4'-Tetrachlorobiphenyl	2437-79-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5-Tetrachlorobiphenyl	70362-47-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5'-Tetrachlorobiphenyl	41464-40-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,6-Tetrachlorobiphenyl	62796-65-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,6'-Tetrachlorobiphenyl	68194-04-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',5,5'-Tetrachlorobiphenyl	35693-99-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',5,6'-Tetrachlorobiphenyl	41464-41-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',6,6'-Tetrachlorobiphenyl	15968-05-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4-Tetrachlorobiphenyl	74338-24-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4'-Tetrachlorobiphenyl	41464-43-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5-Tetrachlorobiphenyl	70424-67-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5'-Tetrachlorobiphenyl	41464-49-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',6-Tetrachlorobiphenyl	74472-33-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,4'-Tetrachlorobiphenyl	33025-41-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,5-Tetrachlorobiphenyl	33284-53-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,6-Tetrachlorobiphenyl	54230-22-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4',5-Tetrachlorobiphenyl	74472-34-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4',6-Tetrachlorobiphenyl	52663-58-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,5,6-Tetrachlorobiphenyl	33284-54-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4'-Tetrachlorobiphenyl	32598-10-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,5-Tetrachlorobiphenyl	73575-53-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,5'-Tetrachlorobiphenyl	73575-52-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,6-Tetrachlorobiphenyl	60233-24-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',5-Tetrachlorobiphenyl	32598-11-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',6-Tetrachlorobiphenyl	41464-46-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',5,5'-Tetrachlorobiphenyl	41464-42-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',5',6-Tetrachlorobiphenyl	74338-23-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,4',5-Tetrachlorobiphenyl	32690-93-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,4',6-Tetrachlorobiphenyl	32598-12-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',5'-Tetrachlorobiphenyl	70362-48-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	-	-	-	-	-	0.0052	-	0.0052	0.0052	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0052	HH	0.0052	HH
3,3',4,5-Tetrachlorobiphenyl	70362-49-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,5'-Tetrachlorobiphenyl	41464-48-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',5,5'-Tetrachlorobiphenyl	33284-52-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	-	-	-	-	-	0.0052	-	0.0052	0.0052	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0052	HH	0.0052	HH
2,2',3,3',4-Pentachlorobiphenyl	52663-62-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5-Pentachlorobiphenyl	60145-20-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',6-Pentachlorobiphenyl	52663-60-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4'-Pentachlorobiphenyl	65510-45-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5-Pentachlorobiphenyl	55312-69-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5'-Pentachlorobiphenyl	38380-02-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table J-1b - Miniumum Potentially Applicable Direct Contact Water SLVs for Identification of Preliminary COPCs
Bradford Island, Upland Operable Unit
(2 of 6)

		Candidate Human Health Water Screening Level Values for Direct Contact (ug/L)									Canidate Ecological Water Screening Level Values (ug/L)														
Analyte	CAS #	DEQ GW Ingest Residential RBC [m]	DEQ GW Ingest Occupational RBC [m]	DEQ GW Volatilize Outdoor Air Occupational RBC [m]	DEQ GW Vapor Intrusion Occupational RBC [m]	DEQ GW Excavation Construct/Exca RBC [m]	USEPA Tapwater RSL [n]	DEQ MCL [o]	Direct Contact Selected HH SLV [s]	Direct Contact Selected HH Water SLV w/ Surrogates [s]	USEPA Freshwater NRWQC [p]	DEQ Freshwater Table 33A WQC[q]	DEQ Level II Aquatic SLV[ad]	DEQ Level II Bird SLV[af]	DEQ Level II Mammal SLV[af]	Lowest DEQ Level II SLV[af]	ORNL Tier II Chronic Value[ag]	USEPA PAH FCV[ah]	Canadian WQG[ai]	NOAA SQuiRTs Freshwater Chronic [aj]	Selected Ecological SLV [ak]	Selected Ecological Water SLV with Surrogates [ak]	Selected Min. Potentially Applicable Water SLV (Total) [al]	SLV (Total): HH or Eco	Selected Min. Potentially Applicable Water SLV (Dissolved) [am]	SLV (Dissolved): HH or Eco
2,2',3,4,6-Pentachlorobiphenyl	55215-17-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,6'-Pentachlorobiphenyl	73575-57-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5-Pentachlorobiphenyl	68194-07-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',6-Pentachlorobiphenyl	68194-05-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,5'-Pentachlorobiphenyl	52663-61-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,6-Pentachlorobiphenyl	73575-56-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,6'-Pentachlorobiphenyl	73575-55-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5',6-Pentachlorobiphenyl	38379-99-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,6,6'-Pentachlorobiphenyl	73575-54-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5'-Pentachlorobiphenyl	41464-51-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',6'-Pentachlorobiphenyl	60233-25-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5-Pentachlorobiphenyl	38380-01-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',6-Pentachlorobiphenyl	39485-83-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5,5'-Pentachlorobiphenyl	37680-73-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5,6'-Pentachlorobiphenyl	68194-06-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5',6-Pentachlorobiphenyl	60145-21-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,6,6'-Pentachlorobiphenyl	56558-16-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	-	-	-	-	-	0.0052	-	0.0052	0.0052	-	-	-	-	-	-	-	-	-	-	-	-	0.0052	HH	0.0052	HH
2,3,3',4,5-Pentachlorobiphenyl	70424-69-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5-Pentachlorobiphenyl	70424-68-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5'-Pentachlorobiphenyl	70362-41-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,6-Pentachlorobiphenyl	74472-35-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',6-Pentachlorobiphenyl	38380-03-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5,5'-Pentachlorobiphenyl	39635-32-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5,6-Pentachlorobiphenyl	74472-36-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5',6-Pentachlorobiphenyl	68194-10-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	-	-	-	-	-	0.0001	-	0.0001	0.0001	-	-	-	-	-	-	-	-	-	-	-	-	0.0001	HH	0.0001	HH
2,3,4,4',6-Pentachlorobiphenyl	74472-38-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,5,6-Pentachlorobiphenyl	18259-05-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4',5,6-Pentachlorobiphenyl	68194-11-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	-	-	-	-	-	0.0052	-	0.0052	0.0052	-	-	-	-	-	-	-	-	-	-	-	-	0.0052	HH	0.0052	HH
2,3',4,4',6-Pentachlorobiphenyl	56558-17-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,5,5'-Pentachlorobiphenyl	68194-12-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,5',6-Pentachlorobiphenyl	56558-18-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5'-Pentachlorobiphenyl	76842-07-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4',5'-Pentachlorobiphenyl	65510-44-3	-	-	-	-	-	0.0052	-	0.0052	0.0052	-	-	-	-	-	-	-	-	-	-	-	-	0.0052	HH	0.0052	HH
2,3',4',5,5'-Pentachlorobiphenyl	70424-70-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',5',6-Pentachlorobiphenyl	74472-39-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	-	-	-	-	-	0.0000052	-	0.0000052	0.0000052	-	-	-	-	-	-	-	-	-	-	-	-	0.0000052	HH	0.0000052	HH
3,3',4,5,5'-Pentachlorobiphenyl	39635-33-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4'-Hexachlorobiphenyl	38380-07-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5-Hexachlorobiphenyl	55215-18-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5'-Hexachlorobiphenyl	52663-66-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,6-Hexachlorobiphenyl	61798-70-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,6'-Hexachlorobiphenyl	38380-05-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,5'-Hexachlorobiphenyl	35694-04-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,6-Hexachlorobiphenyl	52704-70-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,6'-Hexachlorobiphenyl	52744-13-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',6,6'-Hexachlorobiphenyl	38411-22-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5-Hexachlorobiphenyl	35694-06-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5'-Hexachlorobiphenyl	35065-28-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',6-Hexachlorobiphenyl	56030-56-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',6'-Hexachlorobiphenyl	59291-64-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,5'-Hexachlorobiphenyl	52712-04-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,6-Hexachlorobiphenyl	41411-61-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,6'-Hexachlorobiphenyl	68194-15-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5',6-Hexachlorobiphenyl	68194-14-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,6,6'-Hexachlorobiphenyl	74472-40-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,5'-Hexachlorobiphenyl	51908-16-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,6-Hexachlorobiphenyl	68194-13-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,6'-Hexachlorobiphenyl	74472-41-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5',6-Hexachlorobiphenyl	38380-04-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',6,6'-Hexachlorobiphenyl	68194-08-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,5',6-Hexachlorobiphenyl	52663-63-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,6,6'-Hexachlorobiphenyl	68194-09-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5,5'-Hexachlorobiphenyl	35065-27-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5,6'-Hexachlorobiphenyl	60145-22-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',6,6'-Hexachlorobiphenyl	33979-03-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	-	-	-	-	-	0.001	-	0.001	0.001	-	-	-	-	-	-	-	-	-	-	-	-	0.001	HH	0.001	HH
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	-	-	-	-	-	0.001	-	0.001	0.001	-	-	-	-	-	-	-	-	-	-	-	-	0.001	HH	0.001	HH
2,3,3',4,4',6-Hexachlorobiphenyl	74472-42-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5,5'-Hexachlorobiphenyl	39635-35-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5,6-Hexachlorobiphenyl	41411-62-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5',6-Hexachlorobiphenyl	74472-43-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5,5'-Hexachlorobiphenyl	39635-34-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5,6-Hexachlorobiphenyl	74472-44-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5',6-Hexachlorobiphenyl	74472-45-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5,5',6-Hexachlorobiphenyl	74472-46-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,4',5,6-Hexachlorobiphenyl	41411-63-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	-	-	-	-	-	0.052	-	0.052	0.052	-	-	-	-	-	-	-	-	-	-	-	-	0.052	HH	0.052	HH
2,3',4,4',5',6-Hexachlorobiphenyl	59291-65-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	-	-	-	-	-	0.000052	-	0.000052	0.000052	-	-	-	-	-	-	-	-	-	-	-	-	0.000052	HH	0.000052	HH
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',6-Heptachlorobiphenyl	52663-71-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,5'-Heptachlorobiphenyl	52663-74-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,6-Heptachlorobiphenyl	68194-16-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,6'-Heptachlorobiphenyl	38411-25-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table J-1b - Miniumum Potentially Applicable Direct Contact Water SLVs for Identification of Preliminary COPCs
Bradford Island, Upland Operable Unit
(3 of 6)

		Candidate Human Health Water Screening Level Values for Direct Contact (ug/L)									Canidate Ecological Water Screening Level Values (ug/L)															
Analyte	CAS #	DEQ GW Ingest Residential RBC [m]	DEQ GW Ingest Occupational RBC [m]	DEQ GW Volatilize Outdoor Air Occupational RBC [m]	DEQ GW Vapor Intrusion Occupational RBC [m]	DEQ GW Excavation Construct/Exca RBC [m]	USEPA Tapwater RSL [n]	DEQ MCL [o]	Direct Contact Selected HH SLV [s]	Direct Contact Selected HH Water SLV w/ Surrogates [s]	USEPA Freshwater NRWQC [p]	DEQ Freshwater Table 33A WQC[q]	DEQ Level II Aquatic SLV[ad]	DEQ Level II Bird SLV[af]	DEQ Level II Mammal SLV[af]	Lowest DEQ Level II SLV[af]	ORNL Tier II Chronic Value[ag]	USEPA PAH FCV[ah]	Canadian WQG[ai]	NOAA SQuiRTs Freshwater Chronic [aj]	Selected Ecological SLV [ak]	Selected Ecological Water SLV with Surrogates [ak]	Selected Min. Potentially Applicable Water SLV (Total) [al]	SLV (Total): HH or Eco	Selected Min. Potentially Applicable Water SLV (Dissolved) [am]	SLV (Dissolved): HH or Eco
2,2',3,3',4,5',6-Heptachlorobiphenyl	40186-70-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,6,6'-Heptachlorobiphenyl	52663-65-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5',6'-Heptachlorobiphenyl	52663-70-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,5',6-Heptachlorobiphenyl	52663-67-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,6,6'-Heptachlorobiphenyl	52663-64-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,6-Heptachlorobiphenyl	74472-47-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,6'-Heptachlorobiphenyl	60145-23-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5',6-Heptachlorobiphenyl	52663-69-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',6,6'-Heptachlorobiphenyl	74472-48-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,5',6-Heptachlorobiphenyl	52712-05-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,6,6'-Heptachlorobiphenyl	74472-49-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,5',6-Heptachlorobiphenyl	52663-68-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,6,6'-Heptachlorobiphenyl	74487-85-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	-	-	-	-	-	0.0052	-	0.0052	0.0052	-	-	-	-	-	-	-	-	-	-	-	-	0.0052	HH	0.0052	HH
2,3,3',4,4',5,6-Heptachlorobiphenyl	41411-64-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5',6-Heptachlorobiphenyl	74472-50-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5,5',6-Heptachlorobiphenyl	74472-51-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5,5',6-Heptachlorobiphenyl	69782-91-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	35694-08-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,6-Octachlorobiphenyl	52663-78-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,6'-Octachlorobiphenyl	42740-50-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',6,6'-Octachlorobiphenyl	33091-17-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,5',6-Octachlorobiphenyl	68194-17-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,5',6'-Octachlorobiphenyl	52663-75-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,6,6'-Octachlorobiphenyl	52663-73-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	40186-71-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,5',6,6'-Octachlorobiphenyl	2136-99-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,5',6-Octachlorobiphenyl	52663-76-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,6,6'-Octachlorobiphenyl	74472-52-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5,5',6-Octachlorobiphenyl	74472-53-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	40186-72-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	52663-79-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	52663-77-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Decachlorobiphenyl	2051-24-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	630-20-6	-	-	-	-	-	0.52	-	0.52	0.52	-	-	186	-	-	186	-	-	-	-	186	186	0.52	HH	0.52	HH
1,1,1-Trichloroethane (TCA)	71-55-6	9100	38000	-	-	1100000	9100	200	9100	9100	-	-	11	-	4000000	11	11	-	-	11	11	11	11	Eco	11	Eco
1,1,2,2-Tetrachloroethane	79-34-5	-	-	-	-	-	0.067	-	0.067	0.067	-	-	2400	-	-	2400	610	-	-	111	2400	2400	0.067	HH	0.067	HH
1,1,2-Trichloroethane	79-00-5	0.23	1.3	19000	8800	990	0.24	5	0.23	0.23	-	-	9400	-	-	9400	1200	-	-	500	9400	9400	0.23	HH	0.23	HH
1,1-Dichloroethane	75-34-3	2.3	13	73000	16000	10000	2.4	-	2.3	2.3	-	-	47	-	-	47	47	-	-	47	47	47	2.3	HH	2.3	HH
1,1-Dichloroethene	75-35-4	340	1400	-	340000	43000	340	7	340	340	-	-	25	-	230000	25	25	-	-	25	25	25	25	Eco	25	Eco
1,1-Dichloropropene	563-58-6	-	-	-	-	-	0.43	-	0.43	0.43 [e]	-	-	-	-	-	-	-	-	-	-	-	-	0.43 [e]	HH	0.43 [e]	HH
1,2,3-Trichlorobenzene	87-61-6	-	-	-	-	-	29	-	29	29	-	-	-	-	-	-	-	-	8.0	8	8	8	8	Eco	8	Eco
1,2,3-Trichloropropane	96-18-4	-	-	-	-	-	0.00072	-	0.00072	0.00072	-	-	-	-	-	-	-	-	-	-	-	-	0.00072	HH	0.00072	HH
1,2,4-Trichlorobenzene	120-82-1	-	-	-	-	-	2.3	0	2.3	2.3	-	-	110	-	-	110	110	-	24	24	110	110	2.3	HH	2.3	HH
1,2,4-Trimethylbenzene	95-63-6	15	61	-	-	1700	15	-	15	15	-	-	-	-	-	-	-	-	-	-	-	7.3 [y]	7.3 [y]	Eco	7.3 [y]	Eco
1,2-Dibromo-3-chloropropane	96-12-8	-	-	-	-	-	0.00032	-	0.00032	0.00032	-	-	-	-	-	-	-	-	-	-	-	-	0.00032	HH	0.00032	HH
1,2-Dibromoethane (EDB)	106-93-4	0.0063	0.034	960	690	28	0.0065	-	0.0063	0.0063	-	-	-	-	-	-	-	-	-	-	-	-	0.0063	HH	0.0063	HH
1,2-Dichlorobenzene	95-50-1	370	1500	-	-	37000	370	600	370	370	-	-	14	-	-	14	14	-	0.7	0.7	14	14	14	Eco	14	Eco
1,2-Dichloroethane (EDC)	107-06-2	0.14	0.78	9500	3800	630	0.15	5	0.14	0.14	-	-	20000	125000	200000	20000	910	-	100	100	20000	20000	0.14	HH	0.14	HH
1,2-Dichloropropane	78-87-5	-	-	-	-	-	0.39	5	0.39	0.39	-	-	5700	-	-	5700	-	-	-	5700	5700	5700	0.39	HH	0.39	HH
1,3,5-Trimethylbenzene	108-67-8	12	52	-	41000	1400	370	-	12	12	-	-	-	-	-	-	-	-	-	-	-	7.3 [y]	7.3 [y]	Eco	7.3 [y]	Eco
1,3-Dichlorobenzene	541-73-1	-	-	-	-	-	-	-	-	0.42 [ap]	-	-	71	-	-	71	71	-	150	38	71	71	0.42 [ap]	HH	0.42 [ap]	HH
1,3-Dichloropropane	142-28-9	-	-	-	-	-	730	-	730	730	-	-	-	-	-	-	-	-	-	-	-	5700	730	HH	730	HH
1,4-Dichlorobenzene	106-46-7	0.42	2.2	20000	5700	1500	0.43	75	0.42	0.42	-	-	15	-	-	15	15	-	26	9.4	15	15	0.42	HH	0.42	HH
2,2-Dichloropropane	594-20-7	-	-	-	-	-	-	-	-	0.39 [t]	-	-	-	-	-	-	-	-	-	-	-	5700 [t]	0.39 [t]	HH	0.39 [t]	HH
2,4,5-T	93-76-5	-	-	-	-	-	370	-	370	370	-	-	-	-	-	-	-	-	-	36	36	36	36	Eco	36	Eco
2,4,5-TP (Silvex)	93-72-1	-	-	-	-	-	290	50	290	290	-	-	-	-	-	-	-	-	-	-	-	-	290	HH	290	HH
2,4,5-Trichlorophenol	95-95-4	-	-	-	-	-	3700	-	3700	3700	-	-	-	-	-	-	-	-	18	63	18	18	18	Eco	18	Eco
2,4,6-Trichlorophenol	88-06-2	5.2	37	-	-	1600	6.1	-	5.2	5.2	-	-	970	-	-	970	-	-	18	4.9	970	970	5.2	HH	5.2	HH
2,4-D	94-75-7	370	1500	-	-	72000	370	70	370	370	-	-	-	-	-	-	-	-	-	4	4	4	4	Eco	4	Eco
2,4-DB	94-82-6	-	-	-	-	-	290	-	290	290	-	-	-	-	-	-	-	-	-	-	-	-	290	HH	290	HH
2,4-Dichlorophenol	120-83-2	-	-	-	-	-	110	-	110	110	-	-	3650	-	-	3650	-	-	0.2	11	3650	3650	110	HH	110	HH
2,4-Dimethylphenol	105-67-9	-	-	-	-	-	730	-	730	730	-	-	42	-	-	42	-	-	-	100	42	42	42	Eco	42	Eco
2,4-Dinitrophenol	51-28-5	-	-	-	-	-	73	-	73	73	-	-	-	-	-	-	-	-	-	19	19	19	19	Eco	19	Eco
2,4-Dinitrotoluene	121-14-2	-	-	-	-	-	0.22	-	0.22	0.22	-	-	230	-	-	230	-	-	-	44	230	230	0.22	HH	0.22	HH
2,6-Dinitrotoluene	606-20-2	37	150	-	-	29000	37	-	37	37	-	-	230	-	-	230	-	-	-	-	230	230	37	HH	37	HH
2-Butanone (MEK)	78-93-3	-	-	-	-	-	7100	-	7100	7100	-	-	14000	-	-	14000	14000	-	-	14000	14000	14000	7100	HH	7100	HH
2-Chloroethylvinylether	110-75-8	-	-	-	-	-	-	-	-	-	-	-	4760	-	-	4760	-	-	-	-	4760	4760	4760	Eco	4760	Eco
2-Chloronaphthalene	91-58-7	-	-	-	-	-	2900	-	2900	2900	-	-	32	-	-	32	-	-	-	0.396	32	32	32	Eco	32	Eco
2-Chlorophenol	95-57-8	-	-	-	-	-	180	-	180	180	-	-	2000	-	-	2000	-	-	7	24	2000	2000	180	HH	180	HH
2-Chlorotoluene	95-49-8	-	-	-	-	-	730	-	730	730	-	-	-	-	-	-	-	-	-	-	-	-	730	HH	730	HH
2-Hexanone	591-78-6	-	-	-	-	-	47	-	47	47	-	-	99	-	-	99	99	-	-	99	99	99	47	HH	47	HH
2-Methylnaphthalene	91-57-6	-	-	-	-	-	150	-	150	150	-	-	-	-	-	-	-	72.16	-	330	72.16	72.16	72.16	Eco	72.16	Eco
2-Methylphenol	95-48-7	-	-	-	-	-	1800	-	1800	1800	-	-	13	-	2200000	13	13	-	-	13	13	13	13	Eco	13	Eco
2-Nitroaniline	88-74-4	-	-	-	-	-	370	-	370	370	-	-	-	-	-	-	-	-	-	-	-	-	370	HH	370	HH
2-Nitrophenol	88-75-5	-	-	-	-	-	-	-	-	11000 [u]	-	-	-	-	-	-	-	-	-	-	-	-	11000 [u]	HH	11000 [u]	HH
3,3'-Dichlorobenzidine	91-94-1	0.13	0.91	-	-	460	0.15	-	0.13	0.13	-	-	-	-	-	-	-	-	-	4.5	4.5	4.5	0.13	HH	0.13	HH
3-Nitroaniline	99-09-2	-	-	-	-	-	-	-	-	3.4 [w]	-	-	-	-	-	-	-	-	-	-	-	-	3.4 [w]	HH	3.4 [w]	HH
4,4'-DDD	72-54-8	0.24	1.7	-	-	40	0.28	-	0.24	0.24	-	-	0.001	20	6000	0.001	0.011	-	-	0.011	0.001	0.001	0.001	Eco	0.001	Eco
4,4'-DDE	72-55-9	0.17	1.2	-	-	32	0.2	-	0.17	0.17	-	-	-	20	6000	20	-	-	-	105	20	0.001	0.001	Eco	0.001	Eco
4,4'-DDT	50-29-3	0.17	1.2	-	-	15	0.2	-	0.17	0.17	0.001	0.001	0.001	20	6000	0.001	0.013	-	-	0.0005	0.001	0.001	0.001	Eco	0.001	Eco
4,6-Dinitro-2-methylphenol	534-52-1	-	-	-	-	-	2.9	-	2.9	2.9	-	-	-	-	-	-	-	-	-	-	-	-	2.9	HH	2.9	HH
4-Bromophenyl Phenyl Ether	101-55-3	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	1.5	1.5	-	-	-	1.5	1.5	1.5	Eco	1.5	Eco
4-Chloro-3-methylphenol	59-50-7	-	-	-	-	-	3700	-	3700	3700	-	-	-	-	-	-	-	-	-	-	-	-	3700	HH	3700	HH
4-Chloroaniline	106-47-8	-	-	-	-	-	0.34	-	0.34	0.34	-	-	-	-	-	-	-	-	-	50	50	50	0.34	HH	0.34	HH
4-Chlorophenyl Phenyl Ether	7005-72-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table J-1b - Miniumum Potentially Applicable Direct Contact Water SLVs for Identification of Preliminary COPCs
Bradford Island, Upland Operable Unit
(4 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Direct Contact (ug/L)									Canidate Ecological Water Screening Level Values (ug/L)													
		DEQ GW Ingest Residential RBC [m]	DEQ GW Ingest Occupational RBC [m]	DEQ GW Volatilize Outdoor Air Occupational RBC [m]	DEQ GW Vapor Intrusion Occupational RBC [m]	DEQ GW Excavation Construct/Exca RBC [m]	USEPA Tapwater RSL [n]	DEQ MCL [o]	Direct Contact Selected HH SLV [s]	Direct Contact Selected HH Water SLV w/ Surrogates [s]	USEPA Freshwater NRWQC [p]	DEQ Freshwater Table 33A WQC[q]	DEQ Level II Aquatic SLV[ad]	DEQ Level II Bird SLV[af]	DEQ Level II Mammal SLV[af]	Lowest DEQ Level II SLV[af]	ORNL Tier II Chronic Value[ag]	USEPA PAH FCV[ah]	Canadian WQG[ai]	NOAA SQuiRTs Freshwater Chronic [aj]	Selected Ecological SLV [ak]	Selected Ecological Water SLV with Surrogates [ak]	Selected Min. Potentially Applicable Water SLV (Total) [al]	SLV (Total): HH or Eco	Selected Min. Potentially Applicable Water SLV (Dissolved) [am]	SLV (Dissolved): HH or Eco
4-Chlorotoluene	106-43-4	-	-	-	-	-	2600	-	2600	2600	-	-	-	-	-	-	-	-	-	-	-	-	2600	HH	2600	HH
4-Isopropyltoluene	99-87-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone (MIBK)	108-10-1	-	-	-	-	-	2000	-	2000	2000	-	-	170	-	-	170	170	-	-	170	170	170	170	Eco	170	Eco
4-Nitroaniline	100-01-6	-	-	-	-	-	3.4	-	3.4	3.4	-	-	-	-	-	-	-	-	-	-	-	-	3.4	HH	3.4	HH
4-Nitrophenol	100-02-7	-	-	-	-	-	-	-	-	11000 [u]	-	-	150	-	-	150	300	-	-	60	150	150	150	Eco	150	Eco
Acenaphthene	83-32-9	2200	-	-	-	-	2200	-	2200	2200	-	-	520	-	-	520	-	55.85	5.8	5.8	55.85	55.85 [ay]	55.85 [ay]	Eco	55.85 [ay]	Eco
Acenaphthylene	208-96-8	-	-	-	-	-	-	-	-	0.14 [j]	-	-	-	-	-	-	-	306.9	-	4840	306.9	306.9	0.14 [j]	HH	0.14 [j]	HH
Acetone	67-64-1	-	-	-	-	-	22000	-	22000	22000	-	-	1500	-	76000	1500	1500	-	-	1500	1500	1500	1500	Eco	1500	Eco
Aldrin	309-00-2	0.0033	0.024	-	-	-	0.004	-	0.0033	0.0033	-	-	0.06	-	1500	0.06	-	-	-	0.017	0.06	0.06	0.0033	HH	0.0033	HH
Aniline	62-53-3	-	-	-	-	-	12	-	12	12	-	-	-	-	-	-	-	-	-	2.2	2.2	2.2	2.2	Eco	2.2	Eco
Anthracene	120-12-7	-	-	-	-	-	11000	-	11000	11000	-	-	13	-	-	13	0.73	20.73	0.012	0.012	13	13	13	Eco	13	Eco
Aroclor 1016	12674-11-2	-	-	-	-	-	0.96	-	0.96	0.96	-	-	-	-	13000	13000	-	-	-	-	13000	0.014 [an]	0.014 [an]	Eco	0.014 [an]	Eco
Aroclor 1221	11104-28-2	-	-	-	-	-	0.0068	-	0.0068	0.0068	-	-	0.28	-	-	0.28	0.28	-	-	-	0.28	0.014 [an]	0.0068	HH	0.0068	HH
Aroclor 1232	11141-16-5	-	-	-	-	-	0.0068	-	0.0068	0.0068	-	-	0.58	-	-	0.58	0.58	-	-	-	0.58	0.014 [an]	0.0068	HH	0.0068	HH
Aroclor 1242	53469-21-9	-	-	-	-	-	0.034	-	0.034	0.034	-	-	0.053	3000	700	0.053	0.053	-	-	-	0.053	0.014 [an]	0.014 [an]	Eco	0.014 [an]	Eco
Aroclor 1248	12672-29-6	-	-	-	-	-	0.034	-	0.034	0.034	-	-	0.081	-	-	0.081	0.081	-	-	-	0.081	0.014 [an]	0.014 [an]	Eco	0.014 [an]	Eco
Aroclor 1254	11097-69-1	-	-	-	-	-	0.034	-	0.034	0.034	-	-	0.033	1300	300	0.033	0.033	-	-	-	0.033	0.014 [an]	0.014 [an]	Eco	0.014 [an]	Eco
Aroclor 1260	11096-82-5	-	-	-	-	-	0.034	-	0.034	0.034	-	-	94	-	-	94	94	-	-	-	94	0.014 [an]	0.014 [an]	Eco	0.014 [an]	Eco
Benzene	71-43-2	0.39	2.2	14000	2800	1700	0.41	5	0.39	0.39	-	-	130	-	200000	130	130	-	370	46	130	130	0.39	HH	0.39	HH
Benzidine	92-87-5	0.72	14	-	-	130000	0.000094	-	0.72	0.72	-	-	3.9	-	-	3.9	3.9	-	-	3.9	3.9	3.9	0.72	HH	0.72	HH
Benzo(a)anthracene	56-55-3	0.029	0.56	-	-	9.1	0.029	-	0.029	0.029	-	-	0.027	-	-	0.027	0.027	2.227	0.018	0.027	0.027	0.027	0.027	Eco	0.027	Eco
Benzo(a)pyrene	50-32-8	0.0029	0.056	-	-	0.53	0.0029	0.2	0.0029	0.0029	-	-	0.014	-	8000	0.014	0.014	0.9573	0.015	0.014	0.014	0.014	0.0029	HH	0.0029	HH
Benzo(b)fluoranthene	205-99-2	0.029	0.56	-	-	-	0.029	-	0.029	0.029	-	-	-	-	-	-	-	0.6774	-	9.07	0.6774	0.6774	0.029	HH	0.029	HH
Benzo(g,h,i)perylene	191-24-2	-	-	-	-	-	-	-	-	0.29 [au]	-	-	-	-	-	-	-	0.4391	-	7.64	0.4391	0.4391	0.29 [au]	HH	0.29 [au]	HH
Benzo(j,k)flouranthenes	205-82-3 & 207-08-9	-	-	-	-	-	-	-	-	0.29 [av]	-	-	-	-	-	-	-	-	-	-	-	0.014 [b]	0.014 [b]	Eco	0.014 [b]	Eco
Benzo(k)fluoranthene	207-08-9	0.29	-	-	-	-	0.29	-	0.29	0.29	-	-	-	-	-	-	-	0.6415	-	-	0.6415	0.6415	0.29	HH	0.29	HH
Benzofluoranthenes, Total	56832-73-6	-	-	-	-	-	-	-	-	0.029 [aw]	-	-	-	-	-	-	-	-	-	-	-	0.014 [b]	0.014 [b]	Eco	0.014 [b]	Eco
Benzoic Acid	65-85-0	-	-	-	-	-	150000	-	150000	150000	-	-	42	-	-	42	42	-	-	42	42	42	42	Eco	42	Eco
Benzyl Alcohol	100-51-6	-	-	-	-	-	3700	-	3700	3700	-	-	8.6	-	-	8.6	8.6	-	-	8.6	8.6	8.6	8.6	Eco	8.6	Eco
BHC (alpha)	319-84-6	0.009	0.065	-	-	28	0.011	-	0.009	0.009	-	-	2.2	-	-	2.2	2.2	-	-	2.2	2.2	2.2	0.009	HH	0.009	HH
BHC (beta)	319-85-7	-	-	-	-	-	0.037	-	0.037	0.037	-	-	2.2	-	-	2.2	2.2	-	-	0.495	2.2	2.2	0.037	HH	0.037	HH
BHC (delta)	319-86-8	-	-	-	-	-	-	-	-	0.009 [c]	-	-	-	-	-	-	2.2	-	-	2.2	2.2	2.2	0.009 [c]	HH	0.009 [c]	HH
BHC (gamma) Lindane	58-89-9	0.052	0.37	-	-	170	0.061	0.2	0.052	0.052	-	0.08	0.08	14500	62000	0.08	-	-	0.01	0.08	0.08	0.08	0.052	HH	0.052	HH
Bicarbonate as CaCO3	71-52-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand	BOD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bis(2-chloroethoxy)methane	111-91-1	-	-	-	-	-	110	-	110	110	-	-	-	-	-	-	-	-	-	-	-	-	110	HH	110	HH
Bis(2-chloroethyl) Ether	111-44-4	-	-	-	-	-	0.012	-	0.012	0.012	-	-	-	-	-	-	-	-	-	1900	1900	1900	0.012	HH	0.012	HH
Bis(2-chloroisopropyl) Ether	39638-32-9 or 108-60-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	117-81-7	4.1	29	-	-	-	4.8	-	4.1	4.1	-	-	3	8000	73000	3	3.0	-	-	0.3	3	3	3	Eco	3	Eco
Bromobenzene	108-86-1	-	-	-	-	-	88	-	88	88	-	-	-	-	-	-	-	-	-	-	-	-	88	HH	88	HH
Bromochloromethane	74-97-5	-	-	-	-	-	-	-	-	0.12 [x]	-	-	-	-	-	-	-	-	-	-	-	-	0.12 [x]	HH	0.12 [x]	HH
Bromodichloromethane	75-27-4	0.12	0.6	9300	5600	450	0.12	-	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	0.12	HH	0.12	HH
Bromoform	75-25-2	7.2	52	-	-	150000	8.5	-	7.2	7.2	-	-	-	-	-	-	-	-	-	320	320	320	7.2	HH	7.2	HH
Bromomethane	74-83-9	8.7	36	170000	36000	1200	8.7	-	8.7	8.7	-	-	-	-	-	-	-	-	-	16	16	16	8.7	HH	8.7	HH
Butyl Benzyl Phthalate	85-68-7	-	-	-	-	-	35	-	35	35	-	-	19	-	-	19	19	-	-	19	19	19	19	Eco	19	Eco
Carbazole	86-74-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Disulfide	75-15-0	-	-	-	-	-	1000	-	1000	1000	-	-	0.92	-	-	0.92	0.92	-	-	0.92	0.92	0.92	0.92	Eco	0.92	Eco
Carbon Tetrachloride	56-23-5	0.19	1.1	2200	320	770	0.44	5	0.19	0.19	-	-	74	-	123000	74	9.8	-	13.3	9.8	74	74	0.19	HH	0.19	HH
Chlordane (alpha)	5103-71-9	-	-	-	-	-	-	-	-	0.16 [d]	-	-	0.0043	15500	18000	0.0043	-	-	-	-	0.0043	0.0043 [ac]	0.0043 [ac]	Eco	0.0043 [ac]	Eco
Chlordane (gamma)	5103-74-2	-	-	-	-	-	-	-	-	0.16 [d]	-	-	0.0043	15500	18000	0.0043	-	-	-	-	0.0043	0.0043 [ac]	0.0043 [ac]	Eco	0.0043 [ac]	Eco
Chlordane (technical)	12789-03-6	0.16	1.2	-	-	-	0.19	2	0.16	0.16	-	-	0.0043	15500	18000	0.0043	-	-	-	-	0.0043	0.0043 [ac]	0.0043 [ac]	Eco	0.0043 [ac]	Eco
Chlorobenzene	108-90-7	91	380	-	-	10000	91	100	91	91	-	-	50	-	-	50	64	-	-	1.3	50	50	50	Eco	50	Eco
Chloroethane	75-00-3	21000	88000	-	-	2400000	21000	-	21000	21000	-	-	-	-	-	-	-	-	-	-	-	-	21000	HH	21000	HH
Chloroform	67-66-3	0.19	0.99	5500	1200	720	0.19	-	0.19	0.19	-	-	1240	-	115000	1240	28	-	1.8	1.8	1240	1240	0.19	HH	0.19	HH
Chloromethane	74-87-3	190	790	2100000	320000	22000	190	-	190	190	-	-	-	-	-	-	-	-	-	-	-	-	190	HH	190	HH
Chrysene	218-01-9	-	-	-	-	-	2.9	-	2.9	2.9	-	-	-	-	-	-	-	2.042	-	-	2.042	2.042	2.042	Eco	2.042	Eco
cis-1,2-Dichloroethene	156-59-2	360	1500	-	-	120000	370	70	360	360	-	-	590	-	180000	590	-	-	-	590	590	590	360	HH	360	HH
cis-1,3-Dichloropropene	10061-01-5	-	-	-	-	-	0.43	-	0.43	0.43 [e]	-	-	-	-	-	-	-	-	-	<0.055	<0.055	0.055	0.055	Eco	0.055	Eco
Dalapon	75-99-0	-	-	-	-	-	1100	200	1100	1100	-	-	-	-	-	-	-	-	-	-	-	-	1100	HH	1100	HH
Dibenz(a,h)anthracene	53-70-3	0.0029	0.056	-	-	0.21	0.0029	-	0.0029	0.0029	-	-	-	-	-	-	-	0.2825	-	-	0.2825	0.2825	0.0029	HH	0.0029	HH
Dibenzofuran	132-64-9	-	-	-	-	-	37	-	37	37	-	-	3.7	-	-	3.7	3.7	-	-	3.7	3.7	3.7	3.7	Eco	3.7	Eco
Dibromochloromethane	124-48-1	0.68	4.9	-	-	13000	0.15	-	0.68	0.68	-	-	-	-	-	-	-	-	-	-	-	-	0.68	HH	0.68	HH
Dibromomethane	74-95-3	-	-	-	-	-	8.2	-	8.2	8.2	-	-	-	-	-	-	-	-	-	-	-	-	8.2	HH	8.2	HH
Dibutyltin	1002-53-5	-	-	-	-	-	11	-	11	11 [k]	-	-	-	-	-	-	-	-	-	-	-	0.063 [ab]	0.063 [ab]	Eco	0.063 [ab]	Eco
Dicamba	1918-00-9	-	-	-	-	-	1100	-	1100	1100	-	-	-	-	-	-	-	-	10	10	10	10	10	Eco	10	Eco
Dichlorodifluoromethane	75-71-8	-	-	-	-	-	390	-	390	390	-	-	-	-	-	-	-	-	-	-	-	-	390	HH	390	HH
Dichloromethane (Methylene Chloride)	75-09-2	4.4	27	330000	99000	32000	4.8	5	4.4	4.4	-	-	2200	-	45000	2200	2200	-	98.1	98.1	2200	2200	4.4	HH	4.4	HH
Dichlorprop	120-36-5	-	-	-	-	-	290	-	290	290 [ao]	-	-	-	-	-	-	-	-	-	-	-	4 [ae]	4 [ae]	Eco	4 [ae]	Eco
Dieldrin	60-57-1	0.0035	0.026	-	-	6.1	0.0042	-	0.0035	0.0035	0.056	-	0.056	600	150	0.056	-	-	-	0.056	0.056	0.056	0.0035	HH	0.0035	HH
Diesel Range Organics	68334-30-5	90	360	-	-	-	-	-	90	90	-	-	-	-	-	-	-	-	-	-	-	-	90	HH	90	HH
Diethyl Phthalate	84-66-2	-	-	-	-	-	29000	-	29000	29000	-	-	210	-	18000000	210	210	-	-	110	210	210	210	Eco	210	Eco
Dimethyl Phthalate	131-11-3	-	-	-	-	-	-	-	-	29000 [ar]	-	-	3	-	-	3	-	-	-	3	3	3	3	Eco	3	Eco
Di-n-butyl Phthalate	84-74-2	-	-	-	-	-	3700	-	3700	3700	-	-	35	800	2200000	35	35	-	19	9.7	35	35	35	Eco	35	Eco
Di-n-octyl Phthalate	117-84-0	-	-	-	-	-	-	-	-	4.1 [z]	-	-	708	-	-	708	-	-	-	3	708	708	4.1 [z]	HH	4.1 [z]	HH
Dinoseb	88-85-7	-	-	-	-	-	37	7	37	37	-	-	-	-	-	-	-	-	0.05	0.05	0.05	0.05	0.05	Eco	0.05	Eco
Endosulfan I	959-98-8	-	-	-	-	-	220	-	220	220 [as]	0.056	0.056	-	-	-	-	0.051	-	0.02	0.028	0.056	0.056	0.056	Eco	0.056	Eco
Endosulfan II	33213-65-9	-	-	-	-	-	220	-	220	220 [as]	0.056	0.056	-	-	-	-	0.051	-	0.02	0.028	0.056	0.056	0.056	Eco	0.056	Eco
Endosulfan Sulfate	1031-07-8	-	-	-	-	-	220	-	220	220 [as]	-	-	-	-	-	-	0.051	-	0.02	2.22	0.051	0.051	0.051	Eco	0.051	Eco
Endrin	72-20-8	11	44	-	-	-	11	2	11	11	0.036	-	0.036	70	300	0.036	-	-	-	0.036	0.036	0.036	0.036	Eco	0.036	Eco
Endrin Aldehyde	7421-93-4	-	-	-	-	-	-	-	-	11 [aa]	-	-	-	-	-	-	-	-	-	0.15	0.15	0.15	0.15	Eco	0.15	Eco
Endrin Ketone	53494-70-5	-	-	-	-	-	-	-	-	11 [aa]	-	-	-	-	-	-	-	-	-	-	-	-	11 [aa]	HH	11 [aa]	HH
Ethylbenzene	100-41-4	1.4	7.8	41000	7400	4400	1.5	700	1.4	1.4	-	-	7.3	-	-	7.3	7.3	-	90	7.3	7.3	7.3	1.4	HH	1.4	HH
Fluoranthene	206-44-0	-	-	-	-	-	1500	-	1500	1500	-	-	6.16	-	-	6.16	-	7.109	0.04	0.04	6.16	6.16	6.16	Eco	6.16	Eco
Fluorene	86-73-7	1500	-	-	-	-	1500	-	1500	1500	-	-	3.9	-	-	3.9	3.9	39.3	3	3.9	3.9	3.9	3.9	Eco	3.9	Eco
Gasoline Range Organics	8006-61-9	100	420	-	-	13000	-	-	100	100	-	-	-	-	-	-	-	-	-	-	-	-	100	HH	100	HH

Table J-1b - Miniumum Potentially Applicable Direct Contact Water SLVs for Identification of Preliminary COPCs
Bradford Island, Upland Operable Unit
(5 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Direct Contact (ug/L)									Canidate Ecological Water Screening Level Values (ug/L)													
		DEQ GW Ingest Residential RBC [m]	DEQ GW Ingest Occupational RBC [m]	DEQ GW Volatilize Outdoor Air Occupational RBC [m]	DEQ GW Vapor Intrusion Occupational RBC [m]	DEQ GW Excavation Construct/Exca RBC [m]	USEPA Tapwater RSL [n]	DEQ MCL [o]	Direct Contact Selected HH SLV [s]	Direct Contact Selected HH Water SLV w/ Surrogates [s]	USEPA Freshwater NRWQC [p]	DEQ Freshwater Table 33A WQC[q]	DEQ Level II Aquatic SLV[ad]	DEQ Level II Bird SLV[af]	DEQ Level II Mammal SLV[af]	Lowest DEQ Level II SLV[af]	ORNL Tier II Chronic Value[ag]	USEPA PAH FCV[ah]	Canadian WQG[ai]	NOAA SQuiRTs Freshwater Chronic [aj]	Selected Ecological SLV [ak]	Selected Ecological Water SLV with Surrogates [ak]	Selected Min. Potentially Applicable Water SLV (Total) [al]	SLV (Total): HH or Eco	Selected Min. Potentially Applicable Water SLV (Dissolved) [am]	SLV (Dissolved): HH or Eco
Heptachlor	76-44-8	0.013	0.091	-	-	32	0.015	0.4	0.013	0.013	0.0038	0.0038	0.0038	-	2000	0.0038	0.0069	-	-	0.0019	0.0038	0.0038	0.0038	Eco	0.0038	Eco
Heptachlor Epoxide	1024-57-3	0.0062	0.045	-	-	3.2	0.0074	0.2	0.0062	0.0062	0.0038	0.0038	0.0038	-	-	0.0038	-	-	-	0.0019	0.0038	0.0038	0.0038	Eco	0.0038	Eco
Hexachlorobenzene	118-74-1	0.035	0.26	-	-	10	0.042	1	0.035	0.035	-	-	-	-	-	-	-	-	-	0.0003	0.0003	0.0003	0.0003	Eco	0.0003	Eco
Hexachlorobutadiene	87-68-3	-	-	-	-	-	0.86	-	0.86	0.86	-	-	9.3	-	-	9.3	-	-	1.3	0.053	9.3	9.3	0.86	HH	0.86	HH
Hexachlorocyclopentadiene	77-47-4	-	-	-	-	-	220	50	220	220	-	-	5.2	-	-	5.2	-	-	-	5.2	5.2	5.2	5.2	Eco	5.2	Eco
Hexachloroethane	67-72-1	4.1	29	-	-	1400	4.8	-	4.1	4.1	-	-	540	-	-	540	12	-	-	8	540	540	4.1	HH	4.1	HH
Indeno(1,2,3-cd)pyrene	193-39-5	-	-	-	-	-	0.029	-	0.029	0.029	-	-	-	-	-	-	-	0.275	-	4.31	0.275	0.275	0.029	HH	0.029	HH
Isophorone	78-59-1	-	-	-	-	-	71	-	71	71	-	-	2340	-	-	2340	-	-	-	920	2340	2340	71	HH	71	HH
Isopropylbenzene	98-82-8	-	-	-	-	-	680	-	680	680	-	-	-	-	-	-	-	-	-	-	-	7.3 [y]	7.3 [y]	Eco	7.3 [y]	Eco
m,p-Xylenes	179601-23-1	-	-	200	850	2300	200	10000	200	200 [h]	-	-	13	-	8000	13	13	-	-	-	13	13 [h]	13 [h]	Eco	13 [h]	Eco
MCPA	94-74-6	18	73	-	-	6600	18	-	18	18	-	-	-	-	-	-	-	-	2.6	2.6	2.6	2.6	2.6	Eco	2.6	Eco
MCPP	93-65-2	-	-	-	-	-	37	-	37	37	-	-	-	-	-	-	-	-	-	-	-	-	37	HH	37	HH
Methoxychlor	72-43-5	-	-	-	-	-	180	40	180	180	-	0.03	0.03	-	30000	0.03	0.019	-	-	0.03	0.03	0.03	0.03	Eco	0.03	Eco
Monobutyltin	78763-54-9	-	-	-	-	-	-	-	-	11 [g]	-	-	-	-	-	-	-	-	-	-	-	0.063 [ab]	0.063 [ab]	Eco	0.063 [ab]	Eco
Naphthalene	91-20-3	0.14	0.72	16000	10000	500	0.14	-	0.14	0.14	-	-	620	-	284000	620	12	193.5	1.1	1.1	193.5	193.5 [ay]	0.14	HH	0.14	HH
n-Butylbenzene	104-51-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	98-95-3	-	-	-	-	-	0.12	-	0.12	0.12	-	-	540	-	-	540	-	-	-	220	540	540	0.12	HH	0.12	HH
N-Nitrosodimethylamine	62-75-9	-	-	-	-	-	0.00042	-	0.00042	0.00042	-	-	117	-	-	117	-	-	-	-	117	117	0.00042	HH	0.00042	HH
N-Nitrosodi-n-propylamine	621-64-7	-	-	-	-	-	0.0096	-	0.0096	0.0096	-	-	117	-	-	117	-	-	-	-	117	117	0.0096	HH	0.0096	HH
N-Nitrosodiphenylamine	86-30-6	-	-	-	-	-	14	-	14	14	-	-	210	-	-	210	210	-	-	210	210	210	14	HH	14	HH
n-Propylbenzene	103-65-1	-	-	-	-	-	1300	-	1300	1300	-	-	-	-	-	-	-	-	-	-	-	7.3 [y]	7.3 [y]	Eco	7.3 [y]	Eco
o-Xylene	95-47-6	-	-	-	-	-	1200	-	1200	1200	-	-	-	-	-	-	-	-	-	350	350	350	350	Eco	350	Eco
p-cresol (4-Methylphenol)	106-44-5	-	-	-	-	-	180	-	180	180	-	-	-	-	-	-	-	-	-	-	-	13 [v]	13 [v]	Eco	13 [v]	Eco
Pentachlorophenol	87-86-5	0.47	3.4	-	-	52	0.56	1	0.47	0.47	15	-	15	-	1800	15	-	-	0.5	15	15	15	0.47	HH	0.47	HH
Phenanthrene	85-01-8	-	-	-	-	-	-	-	-	11000 [aq]	-	-	6.3	-	-	6.3	-	19.13	0.4	3.6	6.3	6.3	6.3	Eco	6.3	Eco
Phenol	108-95-2	-	-	-	-	-	11000	-	11000	11000	-	-	110	-	-	110	-	-	4	180	110	110	110	Eco	110	Eco
Pyrene	129-00-0	-	-	-	-	-	1100	-	1100	1100	-	-	-	-	-	-	-	10.11	0.025	0.025	10.11	10.11	10.11	Eco	10.11	Eco
Residual Range Organics	RRO	290	1100	-	-	-	-	-	290	290	-	-	-	-	-	-	-	-	-	-	-	-	290	HH	290	HH
sec-Butylbenzene	135-98-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solids, Total Dissolved	TDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	100-42-5	1600	6700	-	-	160000	1600	100	1600	1600	-	-	-	-	-	-	-	-	72	32	72	72	72	Eco	72	Eco
Sulfate	14808-79-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tert-Butylbenzene	98-06-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrabutyltin	1461-25-2	-	-	-	-	-	-	-	-	11 [g]	-	-	-	-	-	-	-	-	-	-	-	0.063 [ab]	0.063 [ab]	Eco	0.063 [ab]	Eco
Tetrachloroethene (PCE)	127-18-4	0.093	0.64	9200	1400	240	0.11	5	0.093	0.093	-	-	840	-	6000	840	98	-	111	45	840	840	0.093	HH	0.093	HH
Toluene	108-88-3	2300	9200	-	-	210000	2300	1000	2300	2300	-	-	9.8	-	104000	9.8	9.8	-	2	2	9.8	9.8	9.8	Eco	9.8	Eco
Total PCBs	1336-36-3	0.028	0.2	-	-	1.9	0.17	0.5	0.17	0.17 [at]	0.014	0.014	0.014	-	270	0.014	0.14	-	-	0.014	0.014	0.014	0.014	Eco	0.014	Eco
Total PAH		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total LPAH		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total HPAH		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toxaphene	8001-35-2	0.052	0.37	-	-	71	0.061	3	0.052	0.052	0.002	0.0002	0.0002	-	60000	0.0002	-	-	-	0.0002	0.002	0.002	0.002	Eco	0.002	Eco
trans-1,2-Dichloroethene	156-60-5	110	450	1800000	350000	14000	110	100	110	110	-	-	590	-	180000	590	-	-	-	1160	590	590	110	HH	110	HH
trans-1,3-Dichloropropene	10061-02-6	-	-	-	-	-	0.43	-	0.43	0.43 [ar]	-	-	-	-	-	-	-	-	-	<0.055	<0.055	0.055	0.055	Eco	0.055	Eco
Tributyltin	688-73-3	-	-	-	-	-	11	-	11	11 [g]	-	-	0.063	-	-	0.063	-	-	0.008	-	0.063	0.063	0.063	Eco	0.063	Eco
Trichloroethylene (TCE)	79-01-6	0.039	0.22	870	150	160	2	5	0.039	0.039	-	-	21900	-	3000	3000	47	-	21	<21	3000	3000	0.039	HH	0.039	HH
Trichlorofluoromethane	75-69-4	1300	5400	-	340000	160000	1300	-	1300	1300	-	-	-	-	-	-	-	-	-	-	-	-	1300	HH	1300	HH
Vinyl Acetate	108-05-4	-	-	-	-	-	410	-	410	410	-	-	16	-	-	16	16	-	-	16	16	16	16	Eco	16	Eco
Vinyl Chloride	75-01-4	0.025	0.52	6800	910	1200	0.016	2	0.025	0.025	-	-	-	-	1300	1300	-	-	-	930	1300	1300	0.025	HH	0.025	HH
Ammonia	7664-41-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromide	24959-67-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon, Dissolved Organic	DOC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon, Total Organic	7440-44-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbonate as CaCO3	3812-32-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	COD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	16887-00-6	-	-	-	-	-	-	-	-	-	-	230000	-	-	-	-	-	-	-	-	230000	230000	230000	Eco	230000	Eco
Cyanide (Hydrogen Cyanide)	74-90-8	730	2900	-	-	2500000	6.2	-	730	730	5.2	5.2	5.2	-	-	5.2	-	-	5	5.2	5.2	5.2	5.2	Eco	5.2	Eco
Fluoride	16984-48-8	-	-	-	-	-	1500	4000	1500	1500	-	-	-	-	-	-	-	-	-	-	-	-	1500	HH	1500	HH
Hardness (by Calculation)	HARDNESS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate as Nitrogen	14797-55-8	-	-	-	-	-	58000	10000	58000	58000	-	-	-	-	-	-	-	-	13000	-	13000	13000	13000	Eco	13000	Eco
Nitrate+Nitrite as Nitrogen	NOx-N	-	-	-	-	-	-	10000	10000	10000	-	-	-	-	-	-	-	-	-	-	-	-	10000	HH	10000	HH
Total Suspended Solids	TSS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	TURB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aluminum (Soluble)	7429-90-5	-	-	-	-	-	37000	-	37000	37000	-	-	87	797000	8000	87	-	-	5-100	87	87	87	37000	HH	87	Eco
Antimony	7440-36-0	-	-	-	-	-	15	6	15	15	-	-	1600	-	1000	1000	30	-	-	30	1000	1000	15	HH	15	HH
Arsenic	7440-38-2	0.038	0.27	-	-	5800	0.045	10	0.038	0.038	150	-	150	18000	6000	150	-	-	5	150	150	150	0.038	HH	0.038	HH
Barium	7440-39-3	7300	29000	-	-	25000000	7300	2000	7300	7300	-	-	4	150000	39000	4	4	-	-	3.9	4	4	7300	HH	4	Eco
Beryllium	7440-41-7	73	290	-	-	250000	73 [i]	4	73	73	-	-	5.3	-	5000	5.3	0.66	-	-	0.66	5.3	5.3	73	HH	5.3	Eco
Cadmium	7440-43-9	18	73	-	-	57000	18 [i]	5	18	18	0.25	-	2.2	10000	8000	2.2	-	-	0.017	0.25	0.25	0.17 [ax]	18	HH	0.17 [ax]	Eco
Calcium	7440-70-2	-	-	-	-	-	-	-	-	-	-	-	116000	-	-	116000	-	-	-	-	116000	116000	-	-	116000	Eco
Chromium	7440-47-3	55000	220000	-	-	-	-	100	55000	55000	-	-	74	7200	21000000	74	-	-	8.9	74	74	54 [ax]	55000	HH	54 [ax]	Eco
Cobalt	7440-48-4	-	-	-	-	-	11	-	11	11	-	-	23	-	9000	23	23	-	-	3	23	23	11	HH	11	HH
Copper	7440-50-8	1500	5800	-	-	5000000	1500	1300	1500	1500	9	-	9	341000	53000	9	-	-	2-4	9	9	5.8 [ax]	1500	HH	5.8 [ax]	Eco
Iron	7439-89-6	-	-	-	-	-	26000	-	26000	26000	-	1000	1000	-	-	1000	-	-	300	1000	1000	1000	26000	HH	1000	Eco
Lead	7439-92-1	15	15	-	-	-	-	15	15	15	2.5	-	2.5	28000	323000	2.5	-	-	1-7	2.5	2.5	1.44 [ax]	15	HH	1.44 [ax]	Eco
Magnesium	7439-95-4	-	-	-	-	-	-	-	-	-	-	-	82000	-	-	82000	-	-	-	-	82000	82000	-	-	82000	Eco
Manganese	7439-96-5	880	3500	-	-	3000000	880 [i]	-	880	880	-	-	120	7242000	676000	120	120	-	-	80	120	120	880	HH	120	Eco
Mercury	7439-97-6	11	44	-	-	-	0.57	2	11	11	0.77	0.012	0.77	3300	10000	0.77	1.3	-	0.026, 0.004	0.77	0.77	0.77	11	HH	0.77	Eco
Nickel	7440-02-0	730	2900	-	-	12000000	730	-	730	730	52	-	52	562000	38000	52	-	-	25-150	52	52	34 [ax]	730	HH	34 [ax]	Eco
Potassium	7440-09-7	-	-	-	-	-	-	-	-	-	-	-	53000	-	-	53000	-	-	-	-	53000	53000	-	-	53000	Eco
Selenium	7782-49-2	-	-	-	-	-	180	50	180	180	5	-	5	3600	1500	5	-	-	1	5	5	5	180	HH	5	Eco
Silver	7440-22-4	180	730	-	-	1000000	180	-	180	180	-	-	0.12	-	-	0.12	0.36	-	0.1	0.36	0.12	0.12	180	HH	0.12	Eco
Sodium	7440-23-5	-	-	-	-	-	-	-	-	-	-	-	680000	-	-	680000	-	-	-	-	680000	680000	-	-	680000	Eco
Thallium	7440-28-0	-	-	-	-	-	-	2	2	2	-	-	40	-	60	40	12	-	0.8	0.03	40	40	2	HH	2	HH
Vanadium	7440-62-2	-	-	-	-	-	2.6 [a]	-	2.6	2.6	-	-	20	82000	1600	20	20	-	-	19	20	20	2.6	HH	2.6	HH
Zinc	7440-66-6	-	-	-	-	-	11000	-	11000	11000	120	-	120	105000	1230000	120	-	-	30	120	120	77 [ax]	11000	HH	77 [ax]	Eco

Table J-1b - Miniumum Potentially Applicable Direct Contact Water SLVs for Identification of Preliminary COPCs
Bradford Island, Upland Operable Unit
(6 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Direct Contact (ug/L)									Canidate Ecological Water Screening Level Values (ug/L)													
		DEQ GW Ingest Residential RBC [m]	DEQ GW Ingest Occupational RBC [m]	DEQ GW Volatilize Outdoor Air Occupational RBC [m]	DEQ GW Vapor Intrusion Occupational RBC [m]	DEQ GW Excavation Construct/Exca RBC [m]	USEPA Tapwater RSL [n]	DEQ MCL [o]	Direct Contact Selected HH SLV [s]	Direct Contact Selected HH Water SLV w/ Surrogates [s]	USEPA Freshwater NRWQC [p]	DEQ Freshwater Table 33A WQC[q]	DEQ Level II Aquatic SLV[af]	DEQ Level II Bird SLV[af]	DEQ Level II Mammal SLV[af]	Lowest DEQ Level II SLV[af]	ORNL Tier II Chronic Value[ag]	USEPA PAH FCV[ah]	Canadian WQG[ai]	NOAA SQuiRTs Freshwater Chronic [aj]	Selected Ecological SLV [ak]	Selected Ecological Water SLV with Surrogates [ak]	Selected Min. Potentially Applicable Water SLV (Total) [al]	SLV (Total): HH or Eco	Selected Min. Potentially Applicable Water SLV (Dissolved) [am]	SLV (Dissolved): HH or Eco
Note:																										
Human Health Screening Levels correspond to a target risk of 1E-06 for carcinogens and target hazard quotient of 1.0 for non-carcinogens for the selected receptor and pathway. MCLs incorporate considerations of risk as well as feasibility in attaining target level.																										
- = No benchmark available or available benchmark not needed, based on hierarchy of sources																										
DEQ = Oregon Department of Environmental Quality																										
USEPA = US Environmental Protection Agency																										
GW = groundwater																										
MCL = Maximum Contaminant Level																										
ug/L = microgram per liter																										
NOAA = National Oceanic and Atmospheric Administration																										
NRWQC = National Recommended Water Quality Criteria																										
ORNL = Oak Ridge National Laboratory																										
PAH = Polycyclic aromatic hydrocarbon																										
RBC = Risk Based Concentrations																										
RI = Remedial Investigation																										
RSL = Regional Screening Level																										
SLV = Screening Level Value																										
SQuiRTs = Screening Quick Reference Tables																										
WQC = Water Quality Criteria																										
[a] Vanadium, Metallic was used.																										
[b] Benzo(a)pyrene was used as a surrogate because there was no chemical-specific SLV.																										
[c] BHC alpha was used as a surrogate, because there was no chemical-specific SLV, and BHC alpha was the lowest BHC.																										
[d] Chlordane was used as a surrogate.																										
[e] Dichloropropene, 1,3- was used as a surrogate.																										
[f] 4,4'-DDT was used as a surrogate because the Aquatic Level II SLV is for DDT and its metabolites and is more conservative than the Avian Level II SLV for DDE.																										
[g] Tributyltin compounds was used as a surrogate because there was no chemical specific SLV.																										
[h] Xylene (mixed) was used as a surrogate because there was no chemical specific SLV.																										
[i] Manganese (water) was used as opposed to Manganese (diet).																										
[j] Naphthalene was used as a surrogate because there was no chemical-specific SLV.																										
[k] Dibutyltin compounds was used as a surrogate because there was no chemical specific SLV.																										
[l] Cadmium (water) was used.																										
[m] DEQ. DEQ 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2005																										
[n] US Environmental Protection Agency (USEPA) 2009. Regional Screening Level. December.																										
[o] DEQ. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf.																										
[p] USEPA 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.																										
[q] DEQ. Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Table 33A).																										
[r] 1,2,4- Trichlorobenzene was used as a surrogate because there was no chemical specific SLV.																										
[s] Groundwater HH Hierarchical SLV Selection for Direct Contact: 1. DEQ RBCs (the minimum of Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA RSL, and 3. DEQ MCL. Surface Water HH Hierarchical SLV Selection for Direct Contact: 1) DEQ RBCs (the minimum of Ingest Residential and Ingest Occupational) and 2-6 same as groundwater; this does not result in a change of the selected SLV.																										
[t] 1,2- Dichloropropane was used as a surrogate because there was no chemical specific SLV.																										
[u] Phenol was used as a surrogate because there was no chemical specific SLV.																										
[v] 2- Methylphenol was used as a surrogate because there was no chemical specific SLV.																										
[w] 2- Nitroaniline was used as a surrogate because there was no chemical specific SLV.																										
[x] Bromodichloromethane was used as a surrogate because there was no chemical specific SLV.																										
[y] Ethylbenzene was used as a surrogate because there was no chemical specific SLV.																										
[z] Bis(2-ethyl hexyl) phthalate was used as a surrogate because there was no chemical specific SLV, and Bis(2-ethyl hexyl) phthalate was the lowest of the pthalates.																										
[ab] Endrin was used as a surrogate because there was no chemical specific SLV.																										
[ab] Tributyltin was used as a surrogate because there was no chemical specific SLV.																										
[ac] Chlordane (CAS # 57749) was used as a surrogate because there was no chemical specific SLV.																										
[ad] Chromium (III) was used as a surrogate because there was no chemical specific SLV.																										
[ae] 2,4-D was used as a surrogate because there was no chemical specific SLV.																										
[af] Oregon Department of Environmental Quality (ODEQ) 1998. Updated 2001. Guidance for Ecological risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.																										
[ag] Suter GW II, and CL Tsao. 1996. Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on Oak Ridge Reservation: 1996 Revision. ORNL, Oak Ridge, TN. 104pp. ES/ER/TM-96/R2.																										
[ah] USEPA 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. November. EPA-600-R-02-013																										
[ai] Canadian Council of Resource and Environment Ministers. 2007. Canadian Water Quality Guidelines for the Protection of Aquatic Life. December Accessed on 1/20/10 at http://ceqg-rcqe.ccme.ca/.																										
[aj] Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34 pages.																										
[ak] Ecological Hierarchical SLV Selection: 1. USEPA Freshwater NAWQC, 2. ODEQ Freshwater Table 33A WQC, 3. DEQ Level II SLVs (lowest), 4. ORNL Tier II Value, 5. USEPA PAH FCV, 6. Canadian Freshwater WQG, 7. NOAA SQuiRTs Freshwater Chronic.																										
[al] For organic analytes, most conservative of Human Health and Ecological Selected Water Screening Levels with Surrogates. For inorganic analytes, selected Human Health Selected Screening Level.																										
[am] For all analytes, most conservative of Human Health and Ecological Selected Water Screening Levels with Surrogates.																										
[an] Total PCBs was used as a surrogate because the SLV is more conservative than the individual aroclor SLVs.																										
[ao] 4-(2,4-Dichlorophenoxy)butyric Acid was used as a surrogate because there was no chemical specific SLV.																										
[ap] 1,4-Dichlorobenzene was used as a surrogate because there was no chemical specific SLV.																										
[aq] The SLV for anthracene was used as a surrogate because there was no chemical specific SLV.																										
[ar] Diethyl Phthalate was used as a surrogate because there was no chemical specific SLV.																										
[as] Endosulfan was used as a surrogate because there was no chemical specific SLV.																										
[at] The RSL for Total PCBs was selected as the SLV per DEQ.																										
[au] Toxic Equivalency Factors for Benzo(g,h,i)perylene (0.01) was applied to the Benzo(a)pyrene SLV because there was no chemical specific SLV.																										
[av] Benzo(k)fluoranthene was used as a surrogate because there was no chemical-specific SLV.																										
[aw] Benzo(b)fluoranthene was used as a surrogate because there was no chemical-specific SLV and benzo(b)fluoranthene had the lowest SLV of the benzofluoranthenes.																										
[ax] As per EPA guidance, certain NRWQC were adjusted for hardness based on a site-specific hardness value of 60 mg/L (minimum value of 54 mg/L and maximum value of 64 mg/L).																										
[ay] For these two PAHs, the ecological SLV hierarchy presented in footnote "ak" was not followed. As per the response to DEQ's Specific Comment #26 (see Appendix P), EPA's FCVs were used instead (EPA 2003).																										

Table J-1c - Miniumum Potentially Applicable Discharge to Surface Water and Bioaccumulation Water SLVs for Identification of Preliminary COPCs
Bradford Island, Upland and River Operable Units
(1 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Discharge to Surface Water/Bioaccumulation (ug/L)								Canidate Ecological Water Screening Level Values (ug/L)														
		USEPA NRWQC (Water + Organism) p	USEPA NRWQC (Organism Only) p	DEQ Table 33A WQC (Water+ Organism)[q]	DEQ Table 33A WQC (Organism Only)[q]	DEQ Table 33B WQC (Water+ Organism)[q]	DEQ Table 33B WQC (Organism Only)[q]	Selected HH SLV [s]	Selected HH Water SLV with Surrogates [s]	USEPA Freshwater NRWQC p	DEQ Freshwater Table 33A WQC[q]	DEQ Level II Aquatic SLV[af]	DEQ Level II Bird SLV[af]	DEQ Level II Mammal SLV[af]	Lowest DEQ Level II SLV[af]	ORNL Tier II Chronic Value[ag]	USEPA PAH FCV[ah]	Canadian WQG[ai]	NOAA SQuiRTs Freshwater Chronic [aj]	Selected Ecological SLV [ak]	Selected Ecological Water SLV with Surrogates [ak]	Selected Min. Potentially Applicable Water SLV (Total) [al]	SLV (Total): HH or Eco	Selected Min. Potentially Applicable Water SLV (Dissolved) [am]	SLV (Dissolved): HH or Eco
2-Chlorobiphenyl	2051-60-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Chlorobiphenyl	2051-61-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorobiphenyl	2051-62-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-Dichlorobiphenyl	13029-08-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3-Dichlorobiphenyl	16605-91-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3'-Dichlorobiphenyl	25569-80-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorobiphenyl	33284-50-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4'-Dichlorobiphenyl	34883-43-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,5-Dichlorobiphenyl	34883-39-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dichlorobiphenyl	33146-45-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobiphenyl	2050-67-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4-Dichlorobiphenyl	2974-92-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4'-Dichlorobiphenyl	2974-90-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,5-Dichlorobiphenyl	34883-41-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-Dichlorobiphenyl	2050-68-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3-Trichlorobiphenyl	38444-78-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4-Trichlorobiphenyl	37680-66-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',5-Trichlorobiphenyl	37680-65-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',6-Trichlorobiphenyl	38444-73-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3'-Trichlorobiphenyl	38444-84-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4-Trichlorobiphenyl	55702-46-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4'-Trichlorobiphenyl	38444-85-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,5-Trichlorobiphenyl	55720-44-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,6-Trichlorobiphenyl	55702-45-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4-Trichlorobiphenyl	55712-37-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',5-Trichlorobiphenyl	38444-81-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',6-Trichlorobiphenyl	38444-76-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,4'-Trichlorobiphenyl	7012-37-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorobiphenyl	15862-07-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorobiphenyl	35693-92-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4',5-Trichlorobiphenyl	16606-02-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4',6-Trichlorobiphenyl	38444-77-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4'-Trichlorobiphenyl	38444-86-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',5'-Trichlorobiphenyl	37680-68-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4-Trichlorobiphenyl	37680-69-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',5-Trichlorobiphenyl	38444-87-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4,4'-Trichlorobiphenyl	38444-90-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4,5-Trichlorobiphenyl	53555-66-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4',5-Trichlorobiphenyl	38444-88-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3'-Tetrachlorobiphenyl	38444-93-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4-Tetrachlorobiphenyl	52663-59-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4'-Tetrachlorobiphenyl	36559-22-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5-Tetrachlorobiphenyl	70362-46-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5'-Tetrachlorobiphenyl	41464-39-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,6-Tetrachlorobiphenyl	70362-45-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,6'-Tetrachlorobiphenyl	41464-47-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4'-Tetrachlorobiphenyl	2437-79-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5-Tetrachlorobiphenyl	70362-47-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5'-Tetrachlorobiphenyl	41464-40-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,6-Tetrachlorobiphenyl	62796-65-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,6'-Tetrachlorobiphenyl	68194-04-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',5,5'-Tetrachlorobiphenyl	35693-99-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',5,6'-Tetrachlorobiphenyl	41464-41-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',6,6'-Tetrachlorobiphenyl	15968-05-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4-Tetrachlorobiphenyl	74338-24-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4'-Tetrachlorobiphenyl	41464-43-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5-Tetrachlorobiphenyl	70424-67-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5'-Tetrachlorobiphenyl	41464-49-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',6-Tetrachlorobiphenyl	74472-33-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,4'-Tetrachlorobiphenyl	33025-41-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,5-Tetrachlorobiphenyl	33284-53-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,6-Tetrachlorobiphenyl	54230-22-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4',5-Tetrachlorobiphenyl	74472-34-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4',6-Tetrachlorobiphenyl	52663-58-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,5,6-Tetrachlorobiphenyl	33284-54-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4'-Tetrachlorobiphenyl	32598-10-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,5-Tetrachlorobiphenyl	73575-53-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,5'-Tetrachlorobiphenyl	73575-52-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,6-Tetrachlorobiphenyl	60233-24-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',5-Tetrachlorobiphenyl	32598-11-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',6-Tetrachlorobiphenyl	41464-46-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',5,5'-Tetrachlorobiphenyl	41464-42-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',5',6-Tetrachlorobiphenyl	74338-23-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,4',5-Tetrachlorobiphenyl	32690-93-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,4',6-Tetrachlorobiphenyl	32598-12-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',5'-Tetrachlorobiphenyl	70362-48-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,5-Tetrachlorobiphenyl	70362-49-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,5'-Tetrachlorobiphenyl	41464-48-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',5,5'-Tetrachlorobiphenyl	33284-52-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4-Pentachlorobiphenyl	52663-62-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table J-1c - Miniumum Potentially Applicable Discharge to Surface Water and Bioaccumulation Water SLVs for Identification of Preliminary COPCs
Bradford Island, Upland and River Operable Units
(2 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Discharge to Surface Water/Bioaccumulation (ug/L)								Canidate Ecological Water Screening Level Values (ug/L)														
		USEPA NRWQC (Water + Organism) p	USEPA NRWQC (Organism Only) p	DEQ Table 33A WQC (Water+ Organism)[q]	DEQ Table 33A WQC (Organism Only)[q]	DEQ Table 33B WQC (Water+ Organism)[q]	DEQ Table 33B WQC (Organism Only)[q]	Selected HH SLV [s]	Selected HH Water SLV with Surrogates [s]	USEPA Freshwater NRWQC p	DEQ Freshwater Table 33A WQC[q]	DEQ Level II Aquatic SLV[af]	DEQ Level II Bird SLV[af]	DEQ Level II Mammal SLV[af]	Lowest DEQ Level II SLV[af]	ORNL Tier II Chronic Value[ag]	USEPA PAH FCV[ah]	Canadian WQG[ai]	NOAA SQuiRTs Freshwater Chronic [aj]	Selected Ecological SLV [ak]	Selected Ecological Water SLV with Surrogates [ak]	Selected Min. Potentially Applicable Water SLV (Total) [al]	SLV (Total): HH or Eco	Selected Min. Potentially Applicable Water SLV (Dissolved) [am]	SLV (Dissolved): HH or Eco
2,2',3,3',5-Pentachlorobiphenyl	60145-20-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',6-Pentachlorobiphenyl	52663-60-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4'-Pentachlorobiphenyl	65510-45-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5-Pentachlorobiphenyl	55312-69-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5'-Pentachlorobiphenyl	38380-02-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,6-Pentachlorobiphenyl	55215-17-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,6'-Pentachlorobiphenyl	73575-57-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5-Pentachlorobiphenyl	68194-07-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',6-Pentachlorobiphenyl	68194-05-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,5'-Pentachlorobiphenyl	52663-61-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,6-Pentachlorobiphenyl	73575-56-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,6'-Pentachlorobiphenyl	73575-55-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5',6-Pentachlorobiphenyl	38379-99-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,6,6'-Pentachlorobiphenyl	73575-54-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5'-Pentachlorobiphenyl	41464-51-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',6'-Pentachlorobiphenyl	60233-25-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5-Pentachlorobiphenyl	38380-01-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',6-Pentachlorobiphenyl	39485-83-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5,5'-Pentachlorobiphenyl	37680-73-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5,6'-Pentachlorobiphenyl	68194-06-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5',6-Pentachlorobiphenyl	60145-21-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,6,6'-Pentachlorobiphenyl	56558-16-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5-Pentachlorobiphenyl	70424-69-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5-Pentachlorobiphenyl	70424-68-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5'-Pentachlorobiphenyl	70362-41-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,6-Pentachlorobiphenyl	74472-35-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',6-Pentachlorobiphenyl	38380-03-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5,5'-Pentachlorobiphenyl	39635-32-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5,6-Pentachlorobiphenyl	74472-36-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5',6-Pentachlorobiphenyl	68194-10-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,4',6-Pentachlorobiphenyl	74472-38-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,5,6-Pentachlorobiphenyl	18259-05-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4',5,6-Pentachlorobiphenyl	68194-11-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4',6-Pentachlorobiphenyl	56558-17-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,5,5'-Pentachlorobiphenyl	68194-12-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,5',6-Pentachlorobiphenyl	56558-18-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5-Pentachlorobiphenyl	76842-07-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4',5'-Pentachlorobiphenyl	65510-44-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',5,5'-Pentachlorobiphenyl	70424-70-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',5',6-Pentachlorobiphenyl	74472-39-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,5,5'-Pentachlorobiphenyl	39635-33-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4'-Hexachlorobiphenyl	38380-07-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5-Hexachlorobiphenyl	55215-18-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5'-Hexachlorobiphenyl	52663-66-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,6-Hexachlorobiphenyl	61798-70-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,6'-Hexachlorobiphenyl	38380-05-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,5'-Hexachlorobiphenyl	35694-04-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,6-Hexachlorobiphenyl	52704-70-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,6'-Hexachlorobiphenyl	52744-13-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',6,6'-Hexachlorobiphenyl	38411-22-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5-Hexachlorobiphenyl	35694-06-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5'-Hexachlorobiphenyl	35065-28-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',6-Hexachlorobiphenyl	56030-56-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',6'-Hexachlorobiphenyl	59291-64-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,5'-Hexachlorobiphenyl	52712-04-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,6-Hexachlorobiphenyl	41411-61-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,6'-Hexachlorobiphenyl	68194-15-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5',6-Hexachlorobiphenyl	68194-14-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,6,6'-Hexachlorobiphenyl	74472-40-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,5'-Hexachlorobiphenyl	51908-16-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,6-Hexachlorobiphenyl	68194-13-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,6'-Hexachlorobiphenyl	74472-41-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5',6-Hexachlorobiphenyl	38380-04-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',6,6'-Hexachlorobiphenyl	68194-08-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,5',6-Hexachlorobiphenyl	52663-63-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,6,6'-Hexachlorobiphenyl	68194-09-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5,5'-Hexachlorobiphenyl	35065-27-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5,6'-Hexachlorobiphenyl	60145-22-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',6,6'-Hexachlorobiphenyl	33979-03-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',6-Hexachlorobiphenyl	74472-42-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5,5'-Hexachlorobiphenyl	39635-35-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5,6-Hexachlorobiphenyl	41411-62-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5',6-Hexachlorobiphenyl	74472-43-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5,5'-Hexachlorobiphenyl	39635-34-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5,6-Hexachlorobiphenyl	74472-44-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5',6-Hexachlorobiphenyl	74472-45-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table J-1c - Miniumum Potentially Applicable Discharge to Surface Water and Bioaccumulation Water SLVs for Identification of Preliminary COPCs
Bradford Island, Upland and River Operable Units
(3 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Discharge to Surface Water/Bioaccumulation (ug/L)								Canidate Ecological Water Screening Level Values (ug/L)														
		USEPA NRWQC (Water + Organism) p	USEPA NRWQC (Organism Only) p	DEQ Table 33A WQC (Water+ Organism)[q]	DEQ Table 33A WQC (Organism Only)[q]	DEQ Table 33B WQC (Water+ Organism)[q]	DEQ Table 33B WQC (Organism Only)[q]	Selected HH SLV [s]	Selected HH Water SLV with Surrogates [s]	USEPA Freshwater NRWQC p	DEQ Freshwater Table 33A WQC[q]	DEQ Level II Aquatic SLV[af]	DEQ Level II Bird SLV[af]	DEQ Level II Mammal SLV[af]	Lowest DEQ Level II SLV[af]	ORNL Tier II Chronic Value[ag]	USEPA PAH FCV[ah]	Canadian WQG[ai]	NOAA SQuiRTs Freshwater Chronic [aj]	Selected Ecological SLV [ak]	Selected Ecological Water SLV with Surrogates [ak]	Selected Min. Potentially Applicable Water SLV (Total) [al]	SLV (Total): HH or Eco	Selected Min. Potentially Applicable Water SLV (Dissolved) [am]	SLV (Dissolved): HH or Eco
2,2',3,3',5,5',6-Hexachlorobiphenyl	74472-46-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,4',5,6-Hexachlorobiphenyl	41411-63-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4',5',6-Hexachlorobiphenyl	59291-65-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',6-Heptachlorobiphenyl	52663-71-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,5'-Heptachlorobiphenyl	52663-74-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,6-Heptachlorobiphenyl	68194-16-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,6'-Heptachlorobiphenyl	38411-25-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5',6-Heptachlorobiphenyl	40186-70-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,6,6'-Heptachlorobiphenyl	52663-65-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5',6'-Heptachlorobiphenyl	52663-70-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,5',6-Heptachlorobiphenyl	52663-67-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,6,6'-Heptachlorobiphenyl	52663-64-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,6-Heptachlorobiphenyl	74472-47-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,6'-Heptachlorobiphenyl	60145-23-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5',6-Heptachlorobiphenyl	52663-69-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',6,6'-Heptachlorobiphenyl	74472-48-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,5',6-Heptachlorobiphenyl	52712-05-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,6,6'-Heptachlorobiphenyl	74472-49-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,5',6-Heptachlorobiphenyl	52663-68-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,6,6'-Heptachlorobiphenyl	74487-85-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5,6-Heptachlorobiphenyl	41411-64-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5',6-Heptachlorobiphenyl	74472-50-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5,5',6-Heptachlorobiphenyl	74472-51-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5,5',6-Heptachlorobiphenyl	69782-91-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	35694-08-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,6-Octachlorobiphenyl	52663-78-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,6'-Octachlorobiphenyl	42740-50-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',6,6'-Octachlorobiphenyl	33091-17-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,5',6-Octachlorobiphenyl	68194-17-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,5',6'-Octachlorobiphenyl	52663-75-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,6,6'-Octachlorobiphenyl	52663-73-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	40186-71-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,5',6,6'-Octachlorobiphenyl	2136-99-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,5',6-Octachlorobiphenyl	52663-76-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,6,6'-Octachlorobiphenyl	74472-52-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5,5',6-Octachlorobiphenyl	74472-53-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	40186-72-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	52663-79-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	52663-77-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Decachlorobiphenyl	2051-24-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	630-20-6	-	-	-	-	-	-	-	-	-	-	186	-	-	186	-	-	-	186	186	186	Eco	186	Eco
1,1,1-Trichloroethane (TCA)	71-55-6	-	-	-	-	-	-	-	-	-	-	11	-	4000000	11	11	-	-	11	11	11	Eco	11	Eco
1,1,2,2-Tetrachloroethane	79-34-5	0.17	4	0.17	4	-	-	0.17	0.17	-	-	2400	-	-	2400	610	-	-	111	2400	2400	0.17	HH	0.17	HH
1,1,2-Trichloroethane	79-00-5	0.59	16	0.59	16	-	-	0.59	0.59	-	-	9400	-	-	9400	1200	-	-	500	9400	9400	0.59	HH	0.59	HH
1,1-Dichloroethane	75-34-3	-	-	-	-	-	-	-	-	-	-	47	-	-	47	47	-	-	47	47	47	47	Eco	47	Eco
1,1-Dichloroethene	75-35-4	330	7100	330	7100	-	-	330	330	-	-	25	-	230000	25	25	-	-	25	25	25	25	Eco	25	Eco
1,1-Dichloropropene	563-58-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	87-61-6	-	-	-	-	-	-	-	35 [r]	-	-	-	-	-	-	-	-	8.0	8	8	8	8	Eco	8	Eco
1,2,3-Trichloropropane	96-18-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	120-82-1	35	70	35	70	-	-	35	35	-	-	110	-	-	110	110	-	24	24	110	110	35	HH	35	HH
1,2,4-Trimethylbenzene	95-63-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3 [y]	7.3 [y]	Eco	7.3 [y]	Eco
1,2-Dibromo-3-chloropropane	96-12-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane (EDB)	106-93-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	95-50-1	420	1300	420	1300	-	-	420	420	-	-	14	-	-	14	14	-	0.7	0.7	14	14	14	Eco	14	Eco
1,2-Dichloroethane (EDC)	107-06-2	0.38	37	0.38	37	-	-	0.38	0.38	-	-	20000	125000	200000	20000	910	-	100	100	20000	20000	0.38	HH	0.38	HH
1,2-Dichloropropane	78-87-5	0.5	15	0.5	15	-	-	0.5	0.5	-	-	5700	-	-	5700	-	-	-	5700	5700	5700	0.5	HH	0.5	HH
1,3,5-Trimethylbenzene	108-67-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3 [y]	7.3 [y]	Eco	7.3 [y]	Eco
1,3-Dichlorobenzene	541-73-1	320	960	320	960	-	-	320	320	-	-	71	-	-	71	71	-	150	38	71	71	71	Eco	71	Eco
1,3-Dichloropropane	142-28-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5700	5700	Eco	5700	Eco
1,4-Dichlorobenzene	106-46-7	63	190	63	190	-	-	63	63	-	-	15	-	-	15	15	-	26	9.4	15	15	15	Eco	15	Eco
2,2-Dichloropropane	594-20-7	-	-	-	-	-	-	-	0.5 [t]	-	-	-	-	-	-	-	-	-	-	-	5700 [t]	0.5 [t]	HH	0.5 [t]	HH
2,4,5-T	93-76-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	36	36	36	Eco	36	Eco
2,4,5-TP (Silvex)	93-72-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	95-95-4	-	-	1800	3600	-	-	1800	1800	-	-	-	-	-	-	-	-	18	63	18	18	18	Eco	18	Eco
2,4,6-Trichlorophenol	88-06-2	1.4	2.4	-	2.4	1.4	-	1.4	1.4	-	-	970	-	-	970	-	-	18	4.9	970	970	1.4	HH	1.4	HH
2,4-D	94-75-7	-	-	100	-	-	-	100	100	-	-	-	-	-	-	-	-	-	4	4	4	4	Eco	4	Eco
2,4-DB	94-82-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	120-83-2	77	290	77	290	-	-	77	77	-	-	3650	-	-	3650	-	-	0.2	11	3650	3650	77	HH	77	HH
2,4-Dimethylphenol	105-67-9	380	850	380	850	-	-	380	380	-	-	42	-	-	42	-	-	-	100	42	42	42	Eco	42	Eco
2,4-Dinitrophenol	51-28-5	69	5300	69	5300	-	-	69	69	-	-	-	-	-	-	-	-	-	19	19	19	19	Eco	19	Eco
2,4-Dinitrotoluene	121-14-2	0.11	3.4	0.11	3.4	-	-	0.11	0.11	-	-	230	-	-	230	-	-	-	44	230	230	0.11	HH	0.11	HH
2,6-Dinitrotoluene	606-20-2	-	-	-	-	-	-	-	-	-	-	230	-	-	230	-	-	-	-	230	230	230	Eco	230	Eco
2-Butanone (MEK)	78-93-3	-	-	-	-	-	-	-	-	-	-	14000	-	-	14000	14000	-	-	14000	14000	14000	14000	Eco	14000	Eco
2-Chloroethylvinylether	110-75-8	-	-	-	-	-	-	-	-	-	-	4760	-	-	4760	-	-	-	-	4760	4760	4760	Eco	4760	Eco
2-Chloronaphthalene	91-58-7	1000	1600	1000	1600	-	-	1000	1000	-	-	32	-	-	32	-	-	-	0.396	32	32	32	Eco	32	Eco
2-Chlorophenol	95-57-8	81	150	81	150	-	-	81	81	-	-	2000	-	-	2000	-	-	7	24	2000	2000	81	HH	81	HH
2-Chlorotoluene	95-49-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table J-1c - Miniumum Potentially Applicable Discharge to Surface Water and Bioaccumulation Water SLVs for Identification of Preliminary COPCs
Bradford Island, Upland and River Operable Units
(4 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Discharge to Surface Water/Bioaccumulation (ug/L)								Canidate Ecological Water Screening Level Values (ug/L)														
		USEPA NRWQC (Water + Organism) p	USEPA NRWQC (Organism Only) p	DEQ Table 33A WQC (Water+ Organism)[q]	DEQ Table 33A WQC (Organism Only)[q]	DEQ Table 33B WQC (Water+ Organism)[q]	DEQ Table 33B WQC (Organism Only)[q]	Selected HH SLV [s]	Selected HH Water SLV with Surrogates [s]	USEPA Freshwater NRWQC p	DEQ Freshwater Table 33A WQC[q]	DEQ Level II Aquatic SLV[af]	DEQ Level II Bird SLV[af]	DEQ Level II Mammal SLV[af]	Lowest DEQ Level II SLV[af]	ORNL Tier II Chronic Value[ag]	USEPA PAH FCV[ah]	Canadian WQG[ai]	NOAA SQuiRTs Freshwater Chronic [aj]	Selected Ecological SLV [ak]	Selected Ecological Water SLV with Surrogates [ak]	Selected Min. Potentially Applicable Water SLV (Total) [al]	SLV (Total): HH or Eco	Selected Min. Potentially Applicable Water SLV (Dissolved) [am]	SLV (Dissolved): HH or Eco
2-Hexanone	591-78-6	-	-	-	-	-	-	-	-	-	-	99	-	-	99	99	-	-	99	99	99	99	Eco	99	Eco
2-Methylnaphthalene	91-57-6	-	-	-	-	-	-	-	670 [j]	-	-	-	-	-	-	-	72.16	-	330	72.16	72.16	72.16	Eco	72.16	Eco
2-Methylphenol	95-48-7	-	-	-	-	-	-	-	10000 [u]	-	-	13	-	2200000	13	13	-	-	13	13	13	13	Eco	13	Eco
2-Nitroaniline	88-74-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	88-75-5	-	-	-	-	-	-	-	10000 [u]	-	-	-	-	-	-	-	-	-	-	-	-	10000 [u]	HH	10000 [u]	HH
3,3'-Dichlorobenzidine	91-94-1	0.021	0.028	0.021	0.028	-	-	0.021	0.021	-	-	-	-	-	-	-	-	-	4.5	4.5	4.5	0.021	HH	0.021	HH
3-Nitroaniline	99-09-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDD	72-54-8	0.00031	0.00031	0.00031	0.00031	-	-	0.00031	0.00031	-	-	0.001	20	6000	0.001	0.011	-	-	0.011	0.001	0.001	0.00031	HH	0.00031	HH
4,4'-DDE	72-55-9	0.00022	0.00022	0.00022	0.00022	-	-	0.00022	0.00022	-	-	-	20	6000	20	-	-	-	105	20	0.001 [t]	0.00022	HH	0.00022	HH
4,4'-DDT	50-29-3	0.00022	0.00022	-	-	0.00022	0.00022	0.00022	0.00022	0.001	0.001	0.001	20	6000	0.001	0.013	-	-	0.0005	0.001	0.001	0.00022	HH	0.00022	HH
4,6-Dinitro-2-methylphenol	534-52-1	13	280	13	280	-	-	13	13	-	-	-	-	-	-	-	-	-	-	-	-	13	HH	13	HH
4-Bromophenyl Phenyl Ether	101-55-3	-	-	-	-	-	-	-	-	-	-	1.5	-	-	1.5	1.5	-	-	-	1.5	1.5	1.5	Eco	1.5	Eco
4-Chloro-3-methylphenol	59-50-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	106-47-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	50	50	50	Eco	50	Eco
4-Chlorophenyl Phenyl Ether	7005-72-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorotoluene	106-43-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Isopropyltoluene	99-87-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone (MIBK)	108-10-1	-	-	-	-	-	-	-	-	-	-	170	-	-	170	170	-	-	170	170	170	170	Eco	170	Eco
4-Nitroaniline	100-01-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	100-02-7	-	-	-	-	-	-	-	10000 [u]	-	-	150	-	-	150	300	-	-	60	150	150	150	Eco	150	Eco
Acenaphthene	83-32-9	670	990	670	990	-	-	670	670	-	-	520	-	-	520	-	55.85	5.8	5.8	55.85	55.85 [ao]	55.85 [ao]	Eco	55.85 [ao]	Eco
Acenaphthylene	208-96-8	-	-	-	-	-	-	-	670 [j]	-	-	-	-	-	-	-	306.9	-	4840	306.9	306.9	306.9	Eco	306.9	Eco
Acetone	67-64-1	-	-	-	-	-	-	-	-	-	-	1500	-	76000	1500	1500	-	-	1500	1500	1500	1500	Eco	1500	Eco
Aldrin	309-00-2	0.000049	0.00005	0.000049	0.00005	-	-	0.000049	0.000049	-	-	0.06	-	1500	0.06	-	-	-	0.017	0.06	0.06	0.000049	HH	0.000049	HH
Aniline	62-53-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	2.2	2.2	2.2	Eco	2.2	Eco
Anthracene	120-12-7	8300	40000	8300	40000	-	-	8300	8300	-	-	13	-	-	13	0.73	20.73	0.012	0.012	13	13	13	Eco	13	Eco
Aroclor 1016	12674-11-2	-	-	-	-	-	-	-	0.000064 [a]	-	-	-	-	13000	13000	-	-	-	-	13000	0.014 [e]	0.000064 [a]	HH	0.000064 [a]	HH
Aroclor 1221	11104-28-2	-	-	-	-	-	-	-	0.000064 [a]	-	-	0.28	-	-	0.28	0.28	-	-	-	0.28	0.014 [e]	0.000064 [a]	HH	0.000064 [a]	HH
Aroclor 1232	11141-16-5	-	-	-	-	-	-	-	0.000064 [a]	-	-	0.58	-	-	0.58	0.58	-	-	-	0.58	0.014 [e]	0.000064 [a]	HH	0.000064 [a]	HH
Aroclor 1242	53469-21-9	-	-	-	-	-	-	-	0.000064 [a]	-	-	0.053	3000	700	0.053	0.053	-	-	-	0.053	0.014 [e]	0.000064 [a]	HH	0.000064 [a]	HH
Aroclor 1248	12672-29-6	-	-	-	-	-	-	-	0.000064 [a]	-	-	0.081	-	-	0.081	0.081	-	-	-	0.081	0.014 [e]	0.000064 [a]	HH	0.000064 [a]	HH
Aroclor 1254	11097-69-1	-	-	-	-	-	-	-	0.000064 [a]	-	-	0.033	1300	300	0.033	0.033	-	-	-	0.033	0.014 [e]	0.000064 [a]	HH	0.000064 [a]	HH
Aroclor 1260	11096-82-5	-	-	-	-	-	-	-	0.000064 [a]	-	-	94	-	-	94	94	-	-	-	94	0.014 [e]	0.000064 [a]	HH	0.000064 [a]	HH
Benzene	71-43-2	2.2	51	-	-	2.2	51	2.2	2.2	-	-	130	-	200000	130	130	-	370	46	130	130	2.2	HH	2.2	HH
Benzidine	92-87-5	0.000086	0.0002	0.000086	0.0002	-	-	0.000086	0.000086	-	-	3.9	-	-	3.9	3.9	-	-	3.9	3.9	3.9	0.000086	HH	0.000086	HH
Benzo(a)anthracene	56-55-3	0.0038	0.018	0.0038	0.018	-	-	0.0038	0.0038	-	-	0.027	-	-	0.027	0.027	2.227	0.018	0.027	0.027	0.027	0.0038	HH	0.0038	HH
Benzo(a)pyrene	50-32-8	0.0038	0.018	0.0038	0.018	-	-	0.0038	0.0038	-	-	0.014	-	8000	0.014	0.014	0.9573	0.015	0.014	0.014	0.014	0.0038	HH	0.0038	HH
Benzo(b)fluoranthene	205-99-2	0.0038	0.018	0.0038	0.018	-	-	0.0038	0.0038	-	-	-	-	-	-	-	0.6774	-	9.07	0.6774	0.6774	0.0038	HH	0.0038	HH
Benzo(g,h,i)perylene	191-24-2	-	-	-	-	-	-	-	0.38 [k]	-	-	-	-	-	-	-	0.4391	-	7.64	0.4391	0.4391	0.38 [k]	HH	0.38 [k]	HH
Benzo(j,k)flouranthenes	205-82-3 & 207-08-9	-	-	-	-	-	-	-	0.0038 [l]	-	-	-	-	-	-	-	-	-	-	-	0.014 [b]	0.0038 [l]	HH	0.0038 [l]	HH
Benzo(k)fluoranthene	207-08-9	0.0038	0.018	0.0038	0.018	-	-	0.0038	0.0038	-	-	-	-	-	-	-	0.6415	-	-	0.6415	0.6415	0.0038	HH	0.0038	HH
Benzofluoranthenes, Total	56832-73-6	-	-	-	-	-	-	-	0.0038 [m]	-	-	-	-	-	-	-	-	-	-	-	0.014 [b]	0.0038 [m]	HH	0.0038 [m]	HH
Benzoic Acid	65-85-0	-	-	-	-	-	-	-	-	-	-	42	-	-	42	42	-	-	42	42	42	42	Eco	42	Eco
Benzyl Alcohol	100-51-6	-	-	-	-	-	-	-	-	-	-	8.6	-	-	8.6	8.6	-	-	8.6	8.6	8.6	8.6	Eco	8.6	Eco
BHC (alpha)	319-84-6	0.0026	0.0049	0.0026	0.0049	-	-	0.0026	0.0026	-	-	2.2	-	-	2.2	2.2	-	-	2.2	2.2	2.2	0.0026	HH	0.0026	HH
BHC (beta)	319-85-7	0.0091	0.017	0.0091	0.017	-	-	0.0091	0.0091	-	-	2.2	-	-	2.2	2.2	-	-	0.495	2.2	2.2	0.0091	HH	0.0091	HH
BHC (delta)	319-86-8	-	-	-	-	-	-	-	0.0026 [c]	-	-	-	-	-	-	2.2	-	-	2.2	2.2	2.2	0.0026 [c]	HH	0.0026 [c]	HH
BHC (gamma) Lindane	58-89-9	0.98	1.8	-	-	0.98	1.8	0.98	0.98	-	0.08	0.08	14500	62000	0.08	-	-	0.01	0.08	0.08	0.08	0.08	Eco	0.08	Eco
Bicarbonate as CaCO3	71-52-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand	BOD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bis(2-chloroethoxy)methane	111-91-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bis(2-chloroethyl) Ether	111-44-4	0.03	0.53	0.03	0.53	-	-	0.03	0.03	-	-	-	-	-	-	-	-	-	1900	1900	1900	0.03	HH	0.03	HH
Bis(2-chloroisopropyl) Ether	39638-32-9 or 108-60-1	1400	65000	-	-	1400	65000	1400	1400	-	-	-	-	-	-	-	-	-	-	-	-	1400	HH	1400	HH
Bis(2-ethylhexyl) Phthalate	117-81-7	1.2	2.2	1.2	2.2	-	-	1.2	1.2	-	-	3	8000	73000	3	3.0	-	-	0.3	3	3	1.2	HH	1.2	HH
Bromobenzene	108-86-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromochloromethane	74-97-5	-	-	-	-	-	-	-	0.55 [x]	-	-	-	-	-	-	-	-	-	-	-	-	0.55 [x]	HH	0.55 [x]	HH
Bromodichloromethane	75-27-4	0.55	17	0.55	17	-	-	0.55	0.55	-	-	-	-	-	-	-	-	-	-	-	-	0.55	HH	0.55	HH
Bromoform	75-25-2	4.3	140	4.3	140	-	-	4.3	4.3	-	-	-	-	-	-	-	-	-	320	320	320	4.3	HH	4.3	HH
Bromomethane	74-83-9	47	1500	47	1500	-	-	47	47	-	-	-	-	-	-	-	-	-	16	16	16	16	Eco	16	Eco
Butyl Benzyl Phthalate	85-68-7	1500	1900	1500	1900	-	-	1500	1500	-	-	19	-	-	19	19	-	-	19	19	19	19	Eco	19	Eco
Carbazole	86-74-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Disulfide	75-15-0	-	-	-	-	-	-	-	-	-	-	0.92	-	-	0.92	0.92	-	-	0.92	0.92	0.92	0.92	Eco	0.92	Eco
Carbon Tetrachloride	56-23-5	0.23	1.6	0.23	1.6	-	-	0.23	0.23	-	-	74	-	123000	74	9.8	-	13.3	9.8	74	74	0.23	HH	0.23	HH
Chlordane (alpha)	5103-71-9	-	-	-	-	-	-	-	0.0008 [d]	-	-	0.0043	15500	18000	0.0043	-	-	-	-	0.0043	0.0043 [ac]	0.0008 [d]	HH	0.0008 [d]	HH
Chlordane (gamma)	5103-74-2	-	-	-	-	-	-	-	0.0008 [d]	-	-	0.0043	15500	18000	0.0043	-	-	-	-	0.0043	0.0043 [ac]	0.0008 [d]	HH	0.0008 [d]	HH
Chlordane (technical)	12789-03-6	0.0008	0.00081	-	-	0.0008	0.00081	0.0008	0.0008	-	-	0.0043	15500	18000	0.0043	-	-	-	-	0.0043	0.0043 [ac]	0.0008	HH	0.0008	HH
Chlorobenzene	108-90-7	130	1600	130	1600	-	-	130	130	-	-	50	-	-	50	64	-	-	1.3	50	50	50	Eco	50	Eco
Chloroethane	75-00-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	67-66-3	5.7	470	-	-	5.7	470	5.7	5.7	-	-	1240	-	115000	1240	28	-	1.8	1.8	1240	1240	5.7	HH	5.7	HH
Chloromethane	74-87-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	218-01-9	0.0038	0.018	0.0038	0.018	-	-	0.0038	0.0038	-	-	-	-	-	-	-	2.042	-	-	2.042	2.042	0.0038	HH	0.0038	HH
cis-1,2-Dichloroethene	156-59-2	-	-	-	-	-	-	-	-	-	-	590	-	180000	590	-	-	-	590	590	590	590	Eco	590	Eco
cis-1,3-Dichloropropene	10061-01-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.055	<0.055	0.055	0.055	Eco	0.055	Eco
Dalapon	75-99-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	53-70-3	0.038	0.018	0.0038	0.018	-	-	0.018	0.018	-	-	-	-	-	-	-	0.2825	-	-	0.2825	0.2825	0.018	HH	0.018	HH
Dibenzofuran	132-64-9	-	-	-	-	-	-	-	37	-	-	3.7	-	-	3.7	3.7	-	-	3.7	3.7	3.7	3.7	Eco	3.7	Eco
Dibromochloromethane	124-48-1	0.4	13	0.4	13	-	-	0.4	0.4	-	-	-	-	-	-	-	-	-	-	-	-	0.4	HH	0.4	HH
Dibromomethane	74-95-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibutyltin	1002-53-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.063 [ab]	0.063 [ab]	Eco	0.063 [ab]	Eco
Dicamba	1918-00-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	10	10	10	Eco	10	Eco

Table J-1c - Miniumum Potentially Applicable Discharge to Surface Water and Bioaccumulation Water SLVs for Identification of Preliminary COPCs
Bradford Island, Upland and River Operable Units
(5 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Discharge to Surface Water/Bioaccumulation (ug/L)								Canidate Ecological Water Screening Level Values (ug/L)														
		USEPA NRWQC (Water + Organism) p	USEPA NRWQC (Organism Only) p	DEQ Table 33A WQC (Water+ Organism)[q]	DEQ Table 33A WQC (Organism Only)[q]	DEQ Table 33B WQC (Water+ Organism)[q]	DEQ Table 33B WQC (Organism Only)[q]	Selected HH SLV [s]	Selected HH Water SLV with Surrogates [s]	USEPA Freshwater NRWQC p	DEQ Freshwater Table 33A WQC[q]	DEQ Level II Aquatic SLV[af]	DEQ Level II Bird SLV[af]	DEQ Level II Mammal SLV[af]	Lowest DEQ Level II SLV[af]	ORNL Tier II Chronic Value[ag]	USEPA PAH FCV[ah]	Canadian WQG[ai]	NOAA SQuiRTs Freshwater Chronic [aj]	Selected Ecological SLV [ak]	Selected Ecological Water SLV with Surrogates [ak]	Selected Min. Potentially Applicable Water SLV (Total) [al]	SLV (Total): HH or Eco	Selected Min. Potentially Applicable Water SLV (Dissolved) [am]	SLV (Dissolved): HH or Eco
Dichlorodifluoromethane	75-71-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane (Methylene Chloride)	75-09-2	4.6	590	4.6	590	-	-	4.6	4.6	-	-	2200	-	45000	2200	2200	-	98.1	98.1	2200	2200	4.6	HH	4.6	HH
Dichlorprop	120-36-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4 [ae]	4 [ae]	Eco	4 [ae]	Eco
Dieldrin	60-57-1	0.000052	0.000054	0.000052	0.000054	-	-	0.000052	0.000052	0.056	-	0.056	600	150	0.056	-	-	-	0.056	0.056	0.056	0.000052	HH	0.000052	HH
Diesel Range Organics	68334-30-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl Phthalate	84-66-2	17000	44000	17000	44000	-	-	17000	17000	-	-	210	-	18000000	210	210	-	-	110	210	210	210	Eco	210	Eco
Dimethyl Phthalate	131-11-3	270000	1100000	270000	1100000	-	-	270000	270000	-	-	3	-	-	3	-	-	-	3	3	3	3	Eco	3	Eco
Di-n-butyl Phthalate	84-74-2	2000	4500	2000	4500	-	-	2000	2000	-	-	35	800	2200000	35	35	-	19	9.7	35	35	35	Eco	35	Eco
Di-n-octyl Phthalate	117-84-0	-	-	-	-	-	-	-	1.2 [z]	-	-	708	-	-	708	-	-	-	3	708	708	1.2 [z]	HH	1.2 [z]	HH
Dinoseb	88-85-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	0.05	0.05	0.05	0.05	Eco	0.05	Eco
Endosulfan I	959-98-8	62	89	62	89	-	-	62	62 [f]	0.056	0.056	-	-	-	-	0.051	-	0.02	0.028	0.056	0.056	0.056	Eco	0.056	Eco
Endosulfan II	33213-65-9	62	89	62	89	-	-	62	62 [f]	0.056	0.056	-	-	-	-	0.051	-	0.02	0.028	0.056	0.056	0.056	Eco	0.056	Eco
Endosulfan Sulfate	1031-07-8	62	89	62	89	-	-	62	62 [f]	-	-	-	-	-	-	0.051	-	0.02	2.22	0.051	0.051	0.051	Eco	0.051	Eco
Endrin	72-20-8	0.059	0.06	0.059	0.06	-	-	0.059	0.059	0.036	-	0.036	70	300	0.036	-	-	-	0.036	0.036	0.036	0.036	Eco	0.036	Eco
Endrin Aldehyde	7421-93-4	0.29	0.3	0.29	0.3	-	-	0.29	0.29	-	-	-	-	-	-	-	-	-	0.15	0.15	0.15	0.15	Eco	0.15	Eco
Endrin Ketone	53494-70-5	-	-	-	-	-	-	-	0.059 [aa]	-	-	-	-	-	-	-	-	-	-	-	-	0.059 [aa]	HH	0.059 [aa]	HH
Ethylbenzene	100-41-4	530	2100	530	2100	-	-	530	530	-	-	7.3	-	-	7.3	7.3	-	90	7.3	7.3	7.3	7.3	Eco	7.3	Eco
Fluoranthene	206-44-0	130	140	-	-	130	140	130	130	-	-	6.16	-	-	6.16	-	7.109	0.04	0.04	6.16	6.16	6.16	Eco	6.16	Eco
Fluorene	86-73-7	1100	5300	1100	5300	-	-	1100	1100	-	-	3.9	-	-	3.9	3.9	39.3	3	3.9	3.9	3.9	3.9	Eco	3.9	Eco
Gasoline Range Organics	8006-61-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor	76-44-8	0.000079	0.000079	0.000079	0.000079	-	-	0.000079	0.000079	0.0038	0.0038	0.0038	-	2000	0.0038	0.0069	-	-	0.0019	0.0038	0.0038	0.000079	HH	0.000079	HH
Heptachlor Epoxide	1024-57-3	0.000039	0.000039	0.000039	0.000039	-	-	0.000039	0.000039	0.0038	0.0038	0.0038	-	-	0.0038	-	-	-	0.0019	0.0038	0.0038	0.000039	HH	0.000039	HH
Hexachlorobenzene	118-74-1	0.00028	0.00029	0.00028	0.00029	-	-	0.00028	0.00028	-	-	-	-	-	-	-	-	-	0.0003	0.0003	0.0003	0.00028	HH	0.00028	HH
Hexachlorobutadiene	87-68-3	0.44	18	0.44	18	-	-	0.44	0.44	-	-	9.3	-	-	9.3	-	-	1.3	0.053	9.3	9.3	0.44	HH	0.44	HH
Hexachlorocyclopentadiene	77-47-4	40	1100	40	1100	-	-	40	40	-	-	5.2	-	-	5.2	-	-	-	5.2	5.2	5.2	5.2	Eco	5.2	Eco
Hexachloroethane	67-72-1	1.4	3.3	1.4	3.3	-	-	1.4	1.4	-	-	540	-	-	540	12	-	-	8	540	540	1.4	HH	1.4	HH
Indeno(1,2,3-cd)pyrene	193-39-5	0.0038	0.018	0.0038	0.018	-	-	0.0038	0.0038	-	-	-	-	-	-	-	0.275	-	4.31	0.275	0.275	0.0038	HH	0.0038	HH
Isophorone	78-59-1	35	960	35	960	-	-	35	35	-	-	2340	-	-	2340	-	-	-	920	2340	2340	35	HH	35	HH
Isopropylbenzene	98-82-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3 [y]	7.3 [y]	Eco	7.3 [y]	Eco
m,p-Xylenes	179601-23-1	-	-	-	-	-	-	-	-	-	-	13	-	8000	13	13	-	-	-	13	13 [h]	13 [h]	Eco	13 [h]	Eco
MCPA	94-74-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	2.6	2.6	2.6	2.6	Eco	2.6	Eco
MCPP	93-65-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methoxychlor	72-43-5	100	-	100	-	-	-	100	100	-	0.03	0.03	-	30000	0.03	0.019	-	-	0.03	0.03	0.03	0.03	Eco	0.03	Eco
Monobutyltin	78763-54-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.063 [ab]	0.063 [ab]	Eco	0.063 [ab]	Eco
Naphthalene	91-20-3	-	-	-	-	-	-	-	670 [j]	-	-	620	-	284000	620	12	193.5	1.1	1.1	193.5	193.5 [ao]	193.5 [ao]	Eco	193.5 [ao]	Eco
n-Butylbenzene	104-51-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	98-95-3	17	690	17	690	-	-	17	17	-	-	540	-	-	540	-	-	-	220	540	540	17	HH	17	HH
N-Nitrosodimethylamine	62-75-9	0.00069	3	0.00069	3	-	-	0.00069	0.00069	-	-	117	-	-	117	-	-	-	-	117	117	0.00069	HH	0.00069	HH
N-Nitrosodi-n-propylamine	621-64-7	0.005	0.51	0.005	0.51	-	-	0.005	0.005	-	-	117	-	-	117	-	-	-	-	117	117	0.005	HH	0.005	HH
N-Nitrosodiphenylamine	86-30-6	3.3	6	3.3	6	-	-	3.3	3.3	-	-	210	-	-	210	210	-	-	210	210	210	3.3	HH	3.3	HH
n-Propylbenzene	103-65-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3 [y]	7.3 [y]	Eco	7.3 [y]	Eco
o-Xylene	95-47-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	350	350	350	350	Eco	350	Eco
p-cresol (4-Methylphenol)	106-44-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13 [v]	13 [v]	Eco	13 [v]	Eco
Pentachlorophenol	87-86-5	0.27	3	0.27	3	-	-	0.27	0.27	15	-	15	-	1800	15	-	-	0.5	15	15	15	0.27	HH	0.27	HH
Phenanthrene	85-01-8	-	-	-	-	-	-	-	8300 [g]	-	-	6.3	-	-	6.3	-	19.13	0.4	3.6	6.3	6.3	6.3	Eco	6.3	Eco
Phenol	108-95-2	10000	860000	-	1700000	21000	-	10000	10000	-	-	110	-	-	110	-	-	4	180	110	110	110	Eco	110	Eco
Pyrene	129-00-0	830	4000	830	4000	-	-	830	830	-	-	-	-	-	-	-	10.11	0.025	0.025	10.11	10.11	10.11	Eco	10.11	Eco
Residual Range Organics	RRO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
sec-Butylbenzene	135-98-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solids, Total Dissolved	TDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	100-42-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	32	72	72	72	Eco	72	Eco
Sulfate	14808-79-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tert-Butylbenzene	98-06-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrabutyltin	1461-25-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.063 [ab]	0.063 [ab]	Eco	0.063 [ab]	Eco
Tetrachloroethene (PCE)	127-18-4	0.69	3.3	0.69	3.3	-	-	0.69	0.69	-	-	840	-	6000	840	98	-	111	45	840	840	0.69	HH	0.69	HH
Toluene	108-88-3	1300	15000	1300	15000	-	-	1300	1300	-	-	9.8	-	104000	9.8	9.8	-	2	2	9.8	9.8	9.8	Eco	9.8	Eco
Total PCBs	1336-36-3	0.000064	0.000064	0.000064	0.000064	-	-	0.000064	0.000064	0.014	0.014	0.014	-	270	0.014	0.14	-	-	0.014	0.014	0.014	0.000064	HH	0.000064	HH
Total PAH		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total LPAH		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total HPAH		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toxaphene	8001-35-2	0.00028	0.00028	-	-	-	-	0.00028	0.00028	0.002	0.0002	0.0002	-	60000	0.0002	-	-	-	0.0002	0.002	0.002	0.00028	HH	0.00028	HH
trans-1,2-Dichloroethene	156-60-5	140	10000	140	10000	-	-	140	140	-	-	590	-	180000	590	-	-	-	1160	590	590	140	HH	140	HH
trans-1,3-Dichloropropene	10061-02-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.055	<0.055	0.055	0.055	Eco	0.055	Eco
Tributyltin	688-73-3	-	-	-	-	-	-	-	-	-	-	0.063	-	-	0.063	-	-	0.008	-	0.063	0.063	0.063	Eco	0.063	Eco
Trichloroethylene (TCE)	79-01-6	2.5	30	2.5	30	-	-	2.5	2.5	-	-	21900	-	3000	3000	47	-	21	<21	3000	3000	2.5	HH	2.5	HH
Trichlorofluoromethane	75-69-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Acetate	108-05-4	-	-	-	-	-	-	-	-	-	-	16	-	-	16	16	-	-	16	16	16	16	Eco	16	Eco
Vinyl Chloride	75-01-4	0.025	2.4	0.025	2.4	-	-	0.025	0.025	-	-	-	-	1300	1300	-	-	-	930	1300	1300	0.025	HH	0.025	HH
Ammonia	7664-41-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromide	24959-67-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon, Dissolved Organic	DOC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon, Total Organic	7440-44-0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbonate as CaCO3	3812-32-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	COD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	16887-00-6	-	-	-	-	-	-	-	-	-	230000	-	-	-	-	-	-	-	-	230000	230000	230000	Eco	230000	Eco
Cyanide (Hydrogen Cyanide)	74-90-8	140	140	140	140	-	-	140	140	5.2	5.2	5.2	-	-	5.2	-	-	5	5.2	5.2	5.2	5.2	Eco	5.2	Eco
Fluoride	16984-48-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (by Calculation)	HARDNESS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate as Nitrogen	14797-55-8	-	-	10000	-	-	-	10000	10000	-	-	-	-	-	-	-	-	13000	-	13000	13000	10000	HH	10000	HH
Nitrate+Nitrite as Nitrogen	NOx-N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	TSS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	TURB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table J-1c - Miniumum Potentially Applicable Discharge to Surface Water and Bioaccumulation Water SLVs for Identification of Preliminary COPCs
Bradford Island, Upland and River Operable Units
(6 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Discharge to Surface Water/Bioaccumulation (ug/L)								Canidate Ecological Water Screening Level Values (ug/L)														
		USEPA NRWQC (Water + Organism) p	USEPA NRWQC (Organism Only) p	DEQ Table 33A WQC (Water+ Organism)[q]	DEQ Table 33A WQC (Organism Only)[q]	DEQ Table 33B WQC (Water+ Organism)[q]	DEQ Table 33B WQC (Organism Only)[q]	Selected HH SLV [s]	Selected HH Water SLV with Surrogates [s]	USEPA Freshwater NRWQC p	DEQ Freshwater Table 33A WQC[q]	DEQ Level II Aquatic SLV[af]	DEQ Level II Bird SLV[af]	DEQ Level II Mammal SLV[af]	Lowest DEQ Level II SLV[af]	ORNL Tier II Chronic Value[ag]	USEPA PAH FCV[ah]	Canadian WQG[ai]	NOAA SQuiRTs Freshwater Chronic [aj]	Selected Ecological SLV [ak]	Selected Ecological Water SLV with Surrogates [ak]	Selected Min. Potentially Applicable Water SLV (Total) [al]	SLV (Total): HH or Eco	Selected Min. Potentially Applicable Water SLV (Dissolved) [am]	SLV (Dissolved): HH or Eco
Aluminum (Soluble)	7429-90-5	-	-	-	-	-	-	-	-	-	-	87	797000	8000	87	-	-	5-100	87	87	87	-	-	87	Eco
Antimony	7440-36-0	5.6	640	5.6	640	-	-	5.6	5.6	-	-	1600	-	1000	1000	30	-	-	30	1000	1000	5.6	HH	5.6	HH
Arsenic	7440-38-2	0.018	0.14	-	-	0.018	0.14	0.018	0.018	150	-	150	18000	6000	150	-	-	5	150	150	150	0.018	HH	0.018	HH
Barium	7440-39-3	-	-	1000	-	-	-	1000	1000	-	-	4	150000	39000	4	4	-	-	3.9	4	4	1000	HH	4	Eco
Beryllium	7440-41-7	-	-	-	-	-	-	-	-	-	-	5.3	-	5000	5.3	0.66	-	-	0.66	5.3	5.3	-	-	5.3	Eco
Cadmium	7440-43-9	-	-	-	-	-	-	-	-	0.25	-	2.2	10000	8000	2.2	-	-	0.017	0.25	0.25	0.17 [an]	-	-	0.17 [an]	Eco
Calcium	7440-70-2	-	-	-	-	-	-	-	-	-	-	116000	-	-	116000	-	-	-	-	116000	116000	-	-	116000	Eco
Chromium	7440-47-3	-	-	-	-	-	-	-	-	-	-	74	7200	21000000	74	-	-	8.9	74	74	54 [ad, an]	-	-	54 [ad, an]	Eco
Cobalt	7440-48-4	-	-	-	-	-	-	-	-	-	-	23	-	9000	23	23	-	-	3	23	23	-	-	23	Eco
Copper	7440-50-8	1300	-	1300	-	-	-	1300	1300	9	-	9	341000	53000	9	-	-	2-4	9	9	5.8 [an]	1300	HH	5.8 [an]	Eco
Iron	7439-89-6	-	-	-	-	300	-	300	300	-	1000	1000	-	-	1000	-	-	300	1000	1000	1000	300	HH	300	HH
Lead	7439-92-1	-	-	-	-	-	-	-	-	2.5	-	2.5	28000	323000	2.5	-	-	1-7	2.5	2.5	1.44 [an]	-	-	1.44 [an]	Eco
Magnesium	7439-95-4	-	-	-	-	-	-	-	-	-	-	82000	-	-	82000	-	-	-	-	82000	82000	-	-	82000	Eco
Manganese	7439-96-5	-	-	-	-	50	100	50	50	-	-	120	7242000	676000	120	120	-	-	80	120	120	50	HH	50	HH
Mercury	7439-97-6	-	-	-	-	-	-	-	-	0.77	0.012	0.77	3300	10000	0.77	1.3	-	0.026, 0.004	0.77	0.77	0.77	-	-	0.77	Eco
Nickel	7440-02-0	610	4600	-	-	610	4600	610	610	52	-	52	562000	38000	52	-	-	25-150	52	52	34 [an]	610	HH	34 [an]	Eco
Potassium	7440-09-7	-	-	-	-	-	-	-	-	-	-	53000	-	-	53000	-	-	-	-	53000	53000	-	-	53000	Eco
Selenium	7782-49-2	170	4200	-	4200	170	-	170	170	5	-	5	3600	1500	5	-	-	1	5	5	5	170	HH	5	Eco
Silver	7440-22-4	-	-	-	-	-	-	-	-	-	-	0.12	-	-	0.12	0.36	-	0.1	0.36	0.12	0.12	-	-	0.12	Eco
Sodium	7440-23-5	-	-	-	-	-	-	-	-	-	-	680000	-	-	680000	-	-	-	-	680000	680000	-	-	680000	Eco
Thallium	7440-28-0	0.24	0.47	0.24	0.47	-	-	0.24	0.24	-	-	40	-	60	40	12	-	0.8	0.03	40	40	0.24	HH	0.24	HH
Vanadium	7440-62-2	-	-	-	-	-	-	-	-	-	-	20	82000	1600	20	20	-	-	19	20	20	-	-	20	Eco
Zinc	7440-66-6	7400	26000	7400	26000	-	-	7400	7400	120	-	120	105000	1230000	120	-	-	30	120	120	77 [an]	7400	HH	77 [an]	Eco

Note:
Human Health Screening Levels correspond to a target risk of 1E-06 for carcinogens and target hazard quotient of 1.0 for non-carcinogens for the selected receptor and pathway. MCLs incorporate considerations of risk as well as feasibility in attaining target level.
- = No benchmark available or available benchmark not needed, based on hierarchy of sources
DEQ = Oregon Department of Environmental Quality
USEPA = US Environmental Protection Agency
GW = groundwater
MCL = Maximum Contaminant Level
ug/L = microgram per liter
NOAA = National Oceanic and Atmospheric Administration
NRWQC = National Recommended Water Quality Criteria
ORNL = Oak Ridge National Laboratory
PAH = Polycyclic aromatic hydrocarbon
RBC = Risk Based Concentrations
RI = Remedial Investigation
RSL = Regional Screening Level
SLV = Screening Level Value
SQuiRTs = Screening Quick Reference Tables
WQC = Water Quality Criteria

[a] Total PCBs was used as a surrogate because there was no aroclor-specific SLV.
[b] Benzo(a)pyrene was used as a surrogate because there was no chemical-specific SLV, and benzo(a)pyrene had the lowest SLV of the high-molecular-weight PAHs.
[c] BHC alpha was used as a surrogate, because there was no chemical-specific SLV, and BHC alpha was the lowest BHC.
[d] Chlordane was used as a surrogate.
[e] Total PCBs was used as a surrogate because the SLV is more conservative than the individual aroclor SLVs.
[f] Endosulfan was used as a surrogate.
[g] Anthracene was used as a surrogate, because there was no chemical-specific SLV.
[h] Xylene (mixed) was used as a surrogate because there was no chemical specific SLV.
[i] 4,4'-DDT was used as a surrogate because the Aquatic Level II SLV is for DDT and its metabolites and is more conservative than the Avian Level II SLV for DDE.
[j] Acenaphthene was used as a surrogate because there was no chemical-specific SLV.
[k] Toxic Equivalency Factors for Benzo(g,h,i)perylene (0.01) was applied to the Benzo(a)pyrene SLV because there was no chemical specific SLV.
[l] Benzo(k)fluoranthene was used as a surrogate because there was no chemical-specific SLV.
[m] Benzo(b)fluoranthene was used as a surrogate because there was no chemical-specific SLV and benzo(b)fluoranthene had the lowest SLV of the benzofluoranthenes
[p] USEPA 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.
[q] DEQ. Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Tables 33A and 33B).
[r] 1,2,4- Trichlorobenzene was used as a surrogate because there was no chemical specific SLV.
[s] Groundwater and Surface Water HH Hierarchical SLV Selection for Groundwater Discharge to Surface Water/Surface Water Bioaccumulation: 1. USEPA NRWQC (minimum of Water+organism and Organism Only), 2. DEQ Table 33A (minimum of Water+organism and Organism Only), and 3. DEQ (minimum of Water+organism and Organism Only).
[t] 1,2- Dichloropropane was used as a surrogate because there was no chemical specific SLV.
[u] Phenol was used as a surrogate because there was no chemical specific SLV.
[v] 2- Methylphenol was used as a surrogate because there was no chemical specific SLV.
[x] Bromodichloromethane was used as a surrogate because there was no chemical specific SLV.
[y] Ethylbenzene was used as a surrogate because there was no chemical specific SLV.
[z] Bis(2-ethyl hexyl) phthalate was used as a surrogate because there was no chemical specific SLV, and Bis(2-ethyl hexyl) phthalate was the lowest of the pthalates.
[aa] Endrin was used as a surrogate because there was no chemical specific SLV.
[ab] Tributyltin was used as a surrogate because there was no chemical specific SLV.
[ac] Chlordane (CAS # 57749) was used as a surrogate because there was no chemical specific SLV.
[ad] Chromium (III) was used as a surrogate because there was no chemical specific SLV.
[ae] 2,4-D was used as a surrogate because there was no chemical specific SLV.
[af] Oregon Department of Environmental Quality (ODEQ) 1998. Updated 2001. Guidance for Ecological risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.
[ag] Suter GW II, and CL Tsao. 1996. Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on Oak Ridge Reservation: 1996 Revision. ORNL, Oak Ridge, TN. 104pp. ES/ER/TM-96/R2.
[ah] USEPA 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. November. EPA-600-R-02-013
[ai] Canadian Council of Resource and Environment Ministers. 2007. Canadian Water Quality Guidelines for the Protection of Aquatic Life. December Accessed on 1/20/10 at http://ceqg-rcqe.ccme.ca/.
[aj] Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34 pages.

[ak] Ecological Hierarchical SLV Selection: 1. USEPA Freshwater NAWQC, 2. ODEQ Freshwater Table 33A WQC, 3. DEQ Level II SLVs (lowest), 4. ORNL Tier II Value, 5. USEPA PAH FCV, 6. Canadian Freshwater WQG, 7. NOAA SQuiRTs Freshwater Chronic.
[al] For organic analytes, most conservative of Human Health and Ecological Selected Water Screening Levels with Surrogates. For inorganic analytes, selected Human Health Selected Screening Level.
[am] For all analytes, most conservative of Human Health and Ecological Selected Water Screening Levels with Surrogates.
[an] As per EPA guidance, certain NRWQC were adjusted for hardness based on a site-specific hardness value of 60 mg/L (minimum value of 54 mg/L and maximum value of 64 mg/L).
[ao] For these two PAHs, the ecological SLV hierarchy presented in footnote "ak" was not followed. As per the response to DEQ's Specific Comment #26 (see Appendix P), EPA's FCVs were used instead (EPA 2003).

Table J-1d - Miniumum Potentially Applicable Soil Gas SLVs for Identification of Preliminary COPCs
Bradford Island, Upland Operable Unit
(1 of 1)

Analyte	CAS #	Candidate Soil Gas Screening Level Values (ug/m3)			Selected Soil Gas SLV [h]	Selected Min. Potentially Applicable Soil Gas SLV with Surrogates [h]
		DEQ Vapor Intru Occup RBC [c]	USEPA Industrial Air RSL[d]	Adjusted USEPA Industrial Air RSL[d]		
1,1,1-Trichloroethane (TCA)	71-55-6	22,000,000	22,000	22,000,000	22,000,000	22,000,000
1,1,2,2-Tetrachloroethane	79-34-5	-	0.21	210	210	210
1,1,2-Trichloroethane	79-00-5	770	0.77	770	770	770
1,1-Dichloroethane	75-34-3	7,700	7.7	7,700	7,700	7,700
1,1-Dichloroethene	75-35-4	880,000	880	880,000	880,000	880,000
1,2,4-Trichlorobenzene	120-82-1	-	8.8	8,800	8,800	8,800
1,2,4-Trimethylbenzene	95-63-6	31,000	31	31,000	31,000	31,000
1,2-Dibromoethane (EDB)	106-93-4	20	0.020	20	20	20
1,2-Dichlorobenzene	95-50-1	880,000	880	880,000	880,000	880,000
1,2-Dichloroethane (EDC)	107-06-2	470	0.47	470	470	470
1,2-Dichloropropane	78-87-5	-	1.2	1,200	1,200	1,200
1,3,5-Trimethylbenzene	108-67-8	26,000	-	-	26,000	26,000
1,3-Butadiene	106-99-0	-	0.41	410	410	410
1,3-Dichlorobenzene	541-73-1	-	-	-	-	1,100 [e]
1,4-Dichlorobenzene	106-46-7	1,100	1.1	1,100	1,100	1,100
1,4-Dioxane	123-91-1	-	1.6	1,600	1,600	1,600
2,2,4-Trimethylpentane	540-84-1	-	-	-	-	31,000 [i]
2-Butanone (MEK)	78-93-3	-	22,000	22,000,000	22,000,000	22,000,000
2-Hexanone	591-78-6	-	130	130,000	130,000	130,000
2-Propanol	67-63-0	-	31,000	31,000,000	31,000,000	31,000,000
3-Chloropropene	107-05-1	-	2.0	2,000	2,000	2,000
4-Ethyltoluene	622-96-8	-	-	-	-	22,000,000 [k]
4-Methyl-2-pentanone (MIBK)	108-10-1	-	13,000	13,000,000	13,000,000	13,000,000
Acetone	67-64-1	-	140,000	140,000,000	140,000,000	140,000,000
alpha-Chlorotoluene	100-44-7	-	0.25	250	250	250
Benzene	71-43-2	1,600	1.6	1,600	1,600	1,600
Bromodichloromethane	75-27-4	330	0.33	330	330	330
Bromoform	75-25-2	-	11	11,000	11,000	11,000
Bromomethane	74-83-9	22,000	22	22,000	22,000	22,000
Carbon Disulfide	75-15-0	-	3,100	3,100,000	3,100,000	3,100,000
Carbon Tetrachloride	56-23-5	820	2.00	2,000	820	820
Chlorobenzene	108-90-7	220,000	220	220,000	220,000	220,000
Chloroethane	75-00-3	44,000,000	44,000	44,000,000	44,000,000	44,000,000
Chloroform	67-66-3	530	0.53	530	530	530
Chloromethane	74-87-3	390,000	390	390,000	390,000	390,000
cis-1,2-Dichloroethene	156-59-2	-	-	-	-	260,000 [f]
cis-1,3-Dichloropropene	10061-01-5	-	3.1	3,100	3,100	3,100 [a]
Cyclohexane	110-82-7	-	26,000	26,000,000	26,000,000	26,000,000
Dibromochloromethane	124-48-1	-	0.45	450	450	450.0
Dichlorodifluoromethane	75-71-8	-	880	880,000	880,000	880,000
Dichloromethane (Methylene Chloride)	75-09-2	26,000	26	26,000	26,000	26,000
Ethanol	64-17-5	-	-	-	-	-
Ethylbenzene	100-41-4	4,900	4.9	4,900	4,900	4,900
Freon 113	76-13-1	-	130,000	130,000,000	130,000,000	130,000,000
Freon 114	76-14-2	-	-	-	-	130,000,000 [g]
Heptane	142-82-5	-	-	-	-	3,100,000 [j]
Hexachlorobutadiene	87-68-3	-	0.56	560	560	560
Hexane	110-54-3	-	3,100	3,100,000	3,100,000	3,100,000
Isopropylbenzene	98-82-8	1,800,000	1,800	1,800,000	1,800,000	1,800,000
m,p-Xylenes	179601-23-1	440,000	440	440,000	440,000	440,000 [b]
Methyl tert-butyl ether	1634-04-4	47,000	47	47,000	47,000	47,000
n-Propylbenzene	103-65-1	-	4,400	4,400,000	4,400,000	4,400,000
o-Xylene	95-47-6	-	3,100	3,100,000	3,100,000	3,100,000
Styrene	100-42-5	4,400,000	4,400	4,400,000	4,400,000	4,400,000
Tetrachloroethene (PCE)	127-18-4	2,100	2.1	2,100	2,100	2,100
Tetrahydrofuran	109-99-9	-	-	-	-	-
Toluene	108-88-3	22,000,000	22,000	22,000,000	22,000,000	22,000,000
trans-1,2-Dichloroethene	156-60-5	260,000	260	260,000	260,000	260,000
trans-1,3-Dichloropropene	10061-02-6	-	3.1	3,100	3,100	3,100 [a]
Trichloroethene (TCE)	79-01-6	140	6.1	6,100	140	140
Trichlorofluoromethane	75-69-4	3,100,000	3,100	3,100,000	3,100,000	3,100,000
Vinyl Chloride	75-01-4	2,800	2.8	2,800	2,800	2,800

Note
- = No benchmark available
DEQ = Oregon Department of Environmental Quality
USEPA = US Environmental Protection Agency
ESL = Environmental Screening Level
RBC = Risk Based Concentrations
RWQCB = Regional Water Quality Control Board
SG = soil gas
ug/m3 = microgram per cubic meter
Ecological-based Screening Levels were not available for soil gas. The selected Human Health Soil Gas Screening Level will be used for the RI report.
[a] Dichloropropene, 1,3- was used as a surrogate.
[b] Xylene (mixed) was used as a surrogate.
[c] DEQ 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
[d] USEPA 2009. Regional Screening Level. December. EPA Industrial Air RSL adjusted by multiplying by 1000.
[e] 1,4-Dichlorobenzene was used as a surrogate.
[f] trans-1,2-Dichloroethene was used as a surrogate.
[g] Freon 113 was used as a surrogate.
[h] Soil Gas HH SLV Hierarchy: 1. DEQ Vapor Intrusion Occupational RBC, 2. Adjusted USEPA Industrial Air RSL
[i] 1,2,4-trimethylbenzene was used as a surrogate.
[j] Hexane was used as a surrogate.
[k] Toluene was used as a surrogate.

Table J-1e - Miniumum Potentially Applicable Sedimet SLVs for Identification of Preliminary COPCs
Bradford Island, Upland and River Operable Units
(1 of 3)

Analyte	CAS #	Candidate Sediment Screening levels (mg/kg)											Selected Selected Min. Potentially Applicable Sediment SLV [o]	SLV: HH, Eco, or UPL
		DEQ Level II SLV [j]	DEQ Bioaccumulation SLV [k]					Lowest Eco	Lowest HH	Screening Levels with Surrogates		Site-Specific Reference UPL [n]		
			Birds Individual	Mammals Individual	Fish Freshwater	Humans General	Humans Subsistence			Lowest Eco [l]	Lowest HH [m]			
2-Chlorobiphenyl	2051-60-7	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Chlorobiphenyl	2051-61-8	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorobiphenyl	2051-62-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-Dichlorobiphenyl	13029-08-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3-Dichlorobiphenyl	16605-91-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3'-Dichlorobiphenyl	25569-80-6	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorobiphenyl	33284-50-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4'-Dichlorobiphenyl	34883-43-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,5-Dichlorobiphenyl	34883-39-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dichlorobiphenyl	33146-45-1	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobiphenyl	2050-67-1	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4-Dichlorobiphenyl	2974-92-7	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4'-Dichlorobiphenyl	2974-90-5	-	-	-	-	-	-	-	-	-	-	-	-	-
3,5-Dichlorobiphenyl	34883-41-5	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-Dichlorobiphenyl	2050-68-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3-Trichlorobiphenyl	38444-78-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4-Trichlorobiphenyl	37680-66-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',5-Trichlorobiphenyl	37680-65-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',6-Trichlorobiphenyl	38444-73-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3'-Trichlorobiphenyl	38444-84-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4-Trichlorobiphenyl	55702-46-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4'-Trichlorobiphenyl	38444-85-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,5-Trichlorobiphenyl	55720-44-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,6-Trichlorobiphenyl	55702-45-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4-Trichlorobiphenyl	55712-37-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',5-Trichlorobiphenyl	38444-81-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',6-Trichlorobiphenyl	38444-76-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,4'-Trichlorobiphenyl	7012-37-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorobiphenyl	15862-07-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorobiphenyl	35693-92-6	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4',5-Trichlorobiphenyl	16606-02-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4',6-Trichlorobiphenyl	38444-77-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4'-Trichlorobiphenyl	38444-86-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',5'-Trichlorobiphenyl	37680-68-5	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4-Trichlorobiphenyl	37680-69-6	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',5-Trichlorobiphenyl	38444-87-0	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4,4'-Trichlorobiphenyl	38444-90-5	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4,5-Trichlorobiphenyl	53555-66-1	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4',5-Trichlorobiphenyl	38444-88-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3'-Tetrachlorobiphenyl	38444-93-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4-Tetrachlorobiphenyl	52663-59-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4'-Tetrachlorobiphenyl	36559-22-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5-Tetrachlorobiphenyl	70362-46-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5'-Tetrachlorobiphenyl	41464-39-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,6-Tetrachlorobiphenyl	70362-45-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,6'-Tetrachlorobiphenyl	41464-47-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4'-Tetrachlorobiphenyl	2437-79-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5-Tetrachlorobiphenyl	70362-47-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5'-Tetrachlorobiphenyl	41464-40-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,6-Tetrachlorobiphenyl	62796-65-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,6'-Tetrachlorobiphenyl	68194-04-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',5,5'-Tetrachlorobiphenyl	35693-99-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',5,6'-Tetrachlorobiphenyl	41464-41-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',6,6'-Tetrachlorobiphenyl	15968-05-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4-Tetrachlorobiphenyl	74338-24-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4'-Tetrachlorobiphenyl	41464-43-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5-Tetrachlorobiphenyl	70424-67-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5'-Tetrachlorobiphenyl	41464-49-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',6-Tetrachlorobiphenyl	74472-33-6	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,4'-Tetrachlorobiphenyl	33025-41-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,5-Tetrachlorobiphenyl	33284-53-6	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,6-Tetrachlorobiphenyl	54230-22-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4',5-Tetrachlorobiphenyl	74472-34-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4',6-Tetrachlorobiphenyl	52663-58-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,5,6-Tetrachlorobiphenyl	33284-54-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4'-Tetrachlorobiphenyl	32598-10-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,5-Tetrachlorobiphenyl	73575-53-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,5'-Tetrachlorobiphenyl	73575-52-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,6-Tetrachlorobiphenyl	60233-24-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',5-Tetrachlorobiphenyl	32598-11-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',6-Tetrachlorobiphenyl	41464-46-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',5,5'-Tetrachlorobiphenyl	41464-42-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',5',6-Tetrachlorobiphenyl	74338-23-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,4',5-Tetrachlorobiphenyl	32690-93-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,4',6-Tetrachlorobiphenyl	32598-12-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',5'-Tetrachlorobiphenyl	70362-48-0	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	-	0.000008	0.0003	0.0032	0.000052	0.0000064	0.000008	0.0000064	0.000008	0.0000064	-	0.0000064	HH
3,3',4,5-Tetrachlorobiphenyl	70362-49-1	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,5'-Tetrachlorobiphenyl	41464-48-6	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',5,5'-Tetrachlorobiphenyl	33284-52-5	-	-	-	-	-	-	-	-	-	-	-	-	-
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	-	0.000004	0.000098	0.00065	0.000017	0.0000021	0.000004	0.0000021	0.000004	0.0000021	-	0.0000021	HH
2,2',3,3',4,5-Pentachlorobiphenyl	52663-62-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,5-Pentachlorobiphenyl	60145-20-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',6,6-Pentachlorobiphenyl	52663-60-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4'-Pentachlorobiphenyl	65510-45-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5-Pentachlorobiphenyl	55312-69-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5'-Pentachlorobiphenyl	38380-02-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,6-Pentachlorobiphenyl	55215-17-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,6'-Pentachlorobiphenyl	73575-57-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5-Pentachlorobiphenyl	68194-07-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',6-Pentachlorobiphenyl	68194-05-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,5'-Pentachlorobiphenyl	52663-61-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,6-Pentachlorobiphenyl	73575-56-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,6'-Pentachlorobiphenyl	73575-55-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5',6-Pentachlorobiphenyl	38379-99-6	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,6,6'-Pentachlorobiphenyl	73575-54-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5'-Pentachlorobiphenyl	41464-51-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',6'-Pentachlorobiphenyl	60233-25-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5-Pentachlorobiphenyl	38380-01-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',6-Pentachlorobiphenyl	39485-83-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5,5'-Pentachlorobiphenyl	37680-73-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5,6'-Pentachlorobiphenyl	68194-06-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,5',6-Pentachlorobiphenyl	60145-21-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,6,6'-Pentachlorobiphenyl	56558-16-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	-	0.0039	0.00094	0.062	0.00017	0.000021	0.00094	0.000021	0.00094	0.000021	-	0.000021	HH
2,3,3',4,5-Pentachlorobiphenyl	70424-69-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5-Pentachlorobiphenyl	70424-68-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5'-Pentachlorobiphenyl	70362-41-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,6-Pentachlorobiphenyl	74472-35-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',6-Pentachlorobiphenyl	38380-03-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5,5'-Pentachlorobiphenyl	39635-32-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5,6-Pentachlorobiphenyl	74472-36-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5',6-Pentachlorobiphenyl	68194-10-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	-	0.04	0.00098	0.065	0.00017	0.000021	0.00098	0.000021	0.00098	0.000021	-	0.000021	HH
2,3,4,4',6-Pentachlorobiphenyl	74472-38-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,5,6-Pentachlorobiphenyl	18259-05-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4',5,6-Pentachlorobiphenyl	68194-11-6	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	-	0.049	0.0012	0.079	0.00012	0.000026	0.0012	0.000026	0.0012	0.000026	-	0.000026	HH
2,3',4,4',6-Pentachlorobiphenyl	56558-17-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,5,5'-Pentachlorobiphenyl	68194-12-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,5',6-Pentachlorobiphenyl	56558-18-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5'-Pentachlorobiphenyl	76842-07-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4',5'-Pentachlorobiphenyl	65510-44-3	-	0.049	0.0012	0.079	0.00021	0.000026	0.0012	0.000026	0.0012	0.000026	-	0.000026	HH
2,3',4',5,5'-Pentachlorobiphenyl	70424-70-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4',5',6-Pentachlorobiphenyl	74472-39-2	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	-	0.0000039	0.00000028	0.000062	0.00000005	6.2E-09	0.00000028	6.2E-09	0.00000028	6.2E-09	-	6.2E-09	HH
3,3',4,5,5'-Pentachlorobiphenyl	39635-33-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4'-Hexachlorobiphenyl	38380-07-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5-Hexachlorobiphenyl	55215-18-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5'-Hexachlorobiphenyl	52663-66-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,6-Hexachlorobiphenyl	61798-70-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,6'-Hexachlorobiphenyl	38380-05-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,5'-Hexachlorobiphenyl	35694-04-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,6-Hexachlorobiphenyl	52704-70-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,6'-Hexachlorobiphenyl	52744-13-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',6,6'-Hexachlorobiphenyl	38411-22-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5-Hexachlorobiphenyl	35694-06-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5'-Hexachlorobiphenyl	35065-28-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',6-Hexachlorobiphenyl	56030-56-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',6'-Hexachlorobiphenyl	59291-64-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,5'-Hexachlorobiphenyl	52712-04-6	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,6-Hexachlorobiphenyl	41411-61-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,6'-Hexachlorobiphenyl	68194-15-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5',6-Hexachlorobiphenyl	68194-14-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,6,6'-Hexachlorobiphenyl	74472-40-5	-	-	-	-	-	-	-	-	-	-	-	-	-

Table J-1e - Miniumum Potentially Applicable Sedimet SLVs for Identification of Preliminary COPCs
Bradford Island, Upland and River Operable Units
(2 of 3)

Analyte	CAS #	Candidate Sediment Screening levels (mg/kg)											Selected Selected Min. Potentially Applicable Sediment SLV [o]	SLV: HH, Eco, or UPL
		DEQ Level II SLV [j]	DEQ Bioaccumulation SLV [k]						Screening Levels with Surrogates		Site-Specific Reference UPL [n]			
			Birds Individual	Mammals Individual	Fish Freshwater	Humans General	Humans Subsistence	Lowest Eco	Lowest HH	Lowest Eco [l]	Lowest HH [m]			
2,2',3,4',5,5'-Hexachlorobiphenyl	51908-16-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,6-Hexachlorobiphenyl	68194-13-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,6'-Hexachlorobiphenyl	74472-41-6	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5',6-Hexachlorobiphenyl	38380-04-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',6,6'-Hexachlorobiphenyl	68194-08-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,5',6-Hexachlorobiphenyl	52663-63-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,5,6,6'-Hexachlorobiphenyl	68194-09-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5,5'-Hexachlorobiphenyl	35065-27-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',5,6'-Hexachlorobiphenyl	60145-22-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',4,4',6,6'-Hexachlorobiphenyl	33979-03-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	-	0.0049	0.0012	0.079	0.00021	0.000026	0.0012	0.000026	0.0012	0.000026	-	0.000026	HH
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	-	0.0049	0.0012	0.079	0.00021	0.000026	0.0012	0.000026	0.0012	0.000026	-	0.000026	HH
2,3,3',4,4',6-Hexachlorobiphenyl	74472-42-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5,5'-Hexachlorobiphenyl	39635-35-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5,6-Hexachlorobiphenyl	41411-62-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5',6-Hexachlorobiphenyl	74472-43-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5,5'-Hexachlorobiphenyl	39635-34-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5,6-Hexachlorobiphenyl	74472-44-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5',6-Hexachlorobiphenyl	74472-45-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',5,5',6-Hexachlorobiphenyl	74472-46-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,4,4',5,6-Hexachlorobiphenyl	41411-63-6	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	-	0.049	0.0012	0.079	0.00021	0.000026	0.0012	0.000026	0.0012	0.000026	-	0.000026	HH
2,3',4,4',5',6-Hexachlorobiphenyl	59291-65-5	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	-	0.00049	0.0000012	0.079	0.00021	0.000000021	0.0000012	0.000000021	0.0000012	0.000000021	-	0.000000021	HH
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',6-Heptachlorobiphenyl	52663-71-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,5'-Heptachlorobiphenyl	52663-74-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,6-Heptachlorobiphenyl	68194-16-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,6'-Heptachlorobiphenyl	38411-25-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5',6-Heptachlorobiphenyl	40186-70-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,6,6'-Heptachlorobiphenyl	52663-65-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5',6'-Heptachlorobiphenyl	52663-70-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,5',6-Heptachlorobiphenyl	52663-67-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,6,6'-Heptachlorobiphenyl	52663-64-6	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,6-Heptachlorobiphenyl	74472-47-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,6'-Heptachlorobiphenyl	60145-23-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5',6-Heptachlorobiphenyl	52663-69-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',6,6'-Heptachlorobiphenyl	74472-48-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,5',6-Heptachlorobiphenyl	52712-05-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,5,6,6'-Heptachlorobiphenyl	74472-49-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,5',6-Heptachlorobiphenyl	52663-68-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4',5,6,6'-Heptachlorobiphenyl	74487-85-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	-	0.27	0.0066	0.43	0.0012	0.00014	0.0066	0.00014	0.0066	0.00014	-	0.00014	HH
2,3,3',4,4',5,6-Heptachlorobiphenyl	41411-64-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5',6-Heptachlorobiphenyl	74472-50-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,5,5',6-Heptachlorobiphenyl	74472-51-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4',5,5',6-Heptachlorobiphenyl	69782-91-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	35694-08-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,6-Octachlorobiphenyl	52663-78-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,6-Octachlorobiphenyl	42740-50-1	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',6,6'-Octachlorobiphenyl	33091-17-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,5',6-Octachlorobiphenyl	68194-17-2	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,5',6'-Octachlorobiphenyl	52663-75-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,6,6'-Octachlorobiphenyl	52663-73-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	40186-71-8	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',5,5',6,6'-Octachlorobiphenyl	2136-99-4	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,5',6-Octachlorobiphenyl	52663-76-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,4,4',5,6,6'-Octachlorobiphenyl	74472-52-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,3,3',4,4',5,5',6-Octachlorobiphenyl	74472-53-0	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	40186-72-9	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	52663-79-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	52663-77-1	-	-	-	-	-	-	-	-	-	-	-	-	-
Decachlorobiphenyl	2051-24-3	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane (TCA)	71-55-6	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	75-34-3	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	95-63-6	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	108-67-8	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	106-46-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2-Dichloropropane	594-20-7	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-T	93-76-5	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (MEK)	78-93-3	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	591-78-6	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	91-57-6	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDD	72-54-8	0.004	9.50E-05	0.0049	0.00039	0.00033	4.00E-05	0.000095	0.00004	0.000095 [f]	0.00004 [f]	-	0.00004 [f]	HH
4,4'-DDE	72-55-9	0.0015	9.50E-05	0.0049	0.00039	0.00033	4.00E-05	0.000095	0.00004	0.000095 [f]	0.00004 [f]	-	0.00004 [f]	HH
4,4'-DDT	50-29-3	0.004	9.50E-05	0.0049	0.00039	0.00033	4.00E-05	0.000095	0.00004	0.000095 [f]	0.00004 [f]	-	0.00004 [f]	HH
4-Isopropyltoluene	99-87-6	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone (MIBK)	108-10-1	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	83-32-9	0.29	-	-	-	-	-	0.29	-	0.29	62 [g]	-	0.29	Eco
Acenaphthylene	208-96-8	0.16	-	-	-	-	-	0.16	-	0.16	62 [g]	-	0.16	Eco
Acetone	67-64-1	-	-	-	-	-	-	-	-	-	-	-	-	-
Aldrin	309-00-2	0.04	-	-	-	-	-	0.04	-	0.04	-	-	0.04	Eco
Aluminum	7429-90-5	-	-	-	-	-	-	-	-	-	-	38000	38000	UPL
Anthracene	120-12-7	0.057	-	-	-	-	-	0.057	-	0.057	62 [g]	-	0.057	Eco
Antimony	7440-36-0	3	-	-	-	-	-	3	-	3	-	0.427	3	Eco
Aroclor 1016	12674-11-2	-	-	-	-	-	-	-	-	0.0018 [c]	0.000048 [f]	-	0.000048 [i]	HH
Aroclor 1221	11104-28-2	-	-	-	-	-	-	-	-	0.0018 [c]	0.000048 [f]	-	0.000048 [i]	HH
Aroclor 1232	11141-16-5	-	-	-	-	-	-	-	-	0.0018 [c]	0.000048 [f]	-	0.000048 [i]	HH
Aroclor 1242	53469-21-9	-	-	-	-	-	-	-	-	0.0018 [c]	0.000048 [f]	-	0.000048 [i]	HH
Aroclor 1248	12672-29-6	0.021	-	-	-	-	-	0.021	-	0.0018 [c]	0.000048 [f]	-	0.000048 [i]	HH
Aroclor 1254	11097-69-1	0.007	-	-	-	-	-	0.007	-	0.0018 [c]	0.000048 [f]	-	0.000048 [i]	HH
Aroclor 1260	11096-82-5	-	-	-	-	-	-	-	-	0.0018 [c]	0.000048 [f]	-	0.000048 [i]	HH
Aroclor 1262	37324-23-5	-	-	-	-	-	-	-	-	0.0018 [c]	0.000048 [f]	-	0.000048 [i]	HH
Aroclor 1268	11100-14-4	-	-	-	-	-	-	-	-	0.0018 [c]	0.000048 [f]	-	0.000048 [i]	HH
Arsenic	7440-38-2	6	-	-	-	-	-	6	-	6	-	5.86	6	Eco
Barium	7440-39-3	-	-	-	-	-	-	-	-	-	-	315	315	UPL
Benzo(a)anthracene	56-55-3	0.032	-	-	-	-	-	0.032	-	0.032	47 [h]	-	0.032	Eco
Benzene	71-43-2	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	50-32-8	0.032	-	-	-	-	-	0.032	-	0.032	47 [h]	-	0.032	Eco
Benzo(b)fluoranthene	205-99-2	-	-	-	-	-	-	-	-	0.027 [a]	47 [h]	-	0.027 [a]	Eco
Benzo(g,h,i)perylene	191-24-2	0.3	-	-	-	-	-	0.3	-	0.3	47 [h]	-	0.3	Eco
Benzo(k)fluoranthene	207-08-9	0.027	-	-	-	-	-	0.027	-	0.027	47 [h]	-	0.027	Eco
Benzofluoranthenes, Total	56832-73-6	-	-	-	-	-	-	-	-	0.027 [a]	47 [h]	-	0.027 [a]	Eco
Benzoic Acid	65-85-0	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzyl Alcohol	100-51-6	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	7440-41-7	-	-	-	-	-	-	-	-	-	-	0.847	0.847	UPL
BHC (alpha)	319-84-6	-	-	-	-	-	-	-	-	0.0009 [e]	0.0023 [q]	-	0.0009 [e]	Eco
BHC (beta)	319-85-7	-	-	-	-	-	-	-	-	0.0009 [e]	0.0023 [q]	-	0.0009 [e]	Eco
BHC (delta)	319-86-8	-	-	-	-	-	-	-	-	0.0009 [e]	0.0023 [q]	-	0.0009 [e]	Eco
BHC (gamma) Lindane	58-89-9	0.0009	-	-	-	-	-	0.0009	-	0.0009	0.0023 [q]	-	0.0009	Eco
Bis(2-ethylhexyl) Phthalate	117-81-7	0.75	-	-	-	-	-	0.75	-	0.75	-	-	0.75	Eco
Bromobenzene	108-86-1	-	-	-	-	-	-	-	-	-	-	-	-	-
Butyl Benzyl Phthalate	85-68-7	-	-	-	-	-	-	-	-	0.11 [b]	-	-	0.11 [b]	Eco
Cadmium	7440-43-9	0.6	-	-	-	-	-	0.6	-	0.6	-	0.674	0.674	UPL
Calcium	7440-70-2	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbazole	86-74-8	0.14	-	-	-	-	-	0.14	-	0.14	-	-	0.14	Eco
Carbon Disulfide	75-15-0	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	56-23-5	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon, Total Organic	7440-44-0	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordane (alpha)	5103-71-9	-	-	-	-	-	-	-	-	0.00050 [d]	0.000046 [d]	-	0.000046 [d]	HH
Chlordane (gamma)	5103-74-2	-	-	-	-	-	-	-	-	0.00050 [d]	0.000046 [d]	-	0.000046 [d]	HH
Chlordane (technical)	12789-03-6	0.0045	0.010	0.028	0.00050	0.00037	0.000046	0.0005	0.000046	0.00050	0.000046	-	0.000046	HH
Chloroform	67-66-3	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	74-87-3	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	7440-47-3	37	-	-	-	-	-	37	-	37	-	28.0	37	Eco
Chrysene	218-01-9	0.057	-	-	-	-	-	0.057	-	0.057	47 [h]	-	0.057	Eco
cis-1,2-Dichloroethene	156-59-2	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	7440-48-4	-	-	-	-	-	-	-	-	-	-	15.2	15.2	UPL
Copper	7440-50-8	36	-	-	-	-	-	36	-	36	-	55.6	55.6	UPL
Dibenz(a,h)anthracene	53-70-3	0.033	-	-	-	-	-	0.033	-	0.033	47 [h]	-	0.033	Eco
Dibenzofuran	132-64-9	5.1	-	-	-	-	-	5.1	-	5.1	-	-	5.1	Eco
Dibutyltin	1002-53-5	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane	75-71-8	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane (Methylene Chloride)	75-09-2	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorprop	120-36-5	-	-	-	-	-	-	-	-	-	-	-	-	-
Dieldrin	60-57-1	0.003	0.00037	0.0012	0.0022	8.10E-06	0.000001	0.00037	0.000001	0.00037	0.000001	-	0.000001	HH
Diesel Range Organics	68334-30-5	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl Phthalate	84-66-2	-	-	-	-	-	-	-	-	0.11 [b]	-	-	0.11 [b]	Eco
Dimethyl Phthalate	131-11-3	-	-	-	-	-	-	-	-	0.11 [b]	-	-	0.11 [b]	Eco
Di-n-butyl Phthalate	84-74-2	0.11	-	-	-	-	-	0.11	-	0.11 [b]	-	-	0.11 [b]	Eco
Di-n-octyl Phthalate	117-84-0	-	-	-	-	-	-	-	-	0.11 [b]	-	-	0.11 [b]	Eco
Endosulfan I	959-98-8	-	-	-	-	-	-	-	-	-	0.000001 [r]	-	0.000001 [r]	HH
Endosulfan II	33213-65-9	-	-	-	-	-	-	-	-	-	0.000001 [r]	-	0.000001 [r]	HH
Endosulfan Sulfate	1031-07-8	-	-	-	-	-	-	-	-	-	0.000001 [r]	-	0.000001 [r]	HH

Table J-1e - Miniumum Potentially Applicable Sedimet SLVs for Identification of Preliminary COPCs
Bradford Island, Upland and River Operable Units
(3 of 3)

Analyte	CAS #	Candidate Sediment Screening levels (mg/kg)											Selected Selected Min. Potentially Applicable Sediment SLV [o]	SLV: HH, Eco, or UPL
		DEQ Level II SLV [j]	DEQ Bioaccumulation SLV [k]					Lowest Eco	Lowest HH	Screening Levels with Surrogates		Site-Specific Reference UPL [n]		
			Birds Individual	Mammals Individual	Fish Freshwater	Humans General	Humans Subsistence			Lowest Eco [l]	Lowest HH [m]			
Endrin	72-20-8	0.003	-	-	-	-	-	0.003	-	0.003	-	-	0.003	Eco
Endrin Aldehyde	7421-93-4	-	-	-	-	-	-	-	-	-	-	-	-	-
Endrin Ketone	53494-70-5	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	100-41-4	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	206-44-0	0.111	-	360	37	510	62	0.111	62	0.111	62	-	0.111	Eco
Fluorene	86-73-7	0.077	-	-	-	-	-	0.077	-	0.077	62 [g]	-	0.077	Eco
Gasoline Range Organics	8006-61-9	-	-	-	-	-	-	-	-	-	-	-	-	-
Heptachlor	76-44-8	0.01	-	-	-	-	-	0.01	-	0.01	0.000001 [r]	-	0.000001 [r]	HH
Heptachlor Epoxide	1024-57-3	0.0006	-	-	-	-	-	0.0006	-	0.0006	-	-	0.0006	Eco
Hexachlorobenzene	118-74-1	0.1	-	-	61	0.019	0.0023	0.1	0.0023	0.1	0.0023	-	0.0023	HH
Indeno(1,2,3-cd)pyrene	193-39-5	0.017	-	-	-	-	-	0.017	-	0.017	47 [h]	-	0.017	Eco
Iron	7439-89-6	-	-	-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene	98-82-8	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	7439-92-1	35	-	-	-	-	-	35	-	35	-	14.5	35	Eco
m,p-Xylenes	179601-23-1	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	7439-95-4	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	7439-96-5	1100	-	-	-	-	-	1100	-	1100	-	-	1100	Eco
MCPP	93-65-2	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	7439-97-6	0.2	-	-	-	-	-	0.2	-	0.2	-	0.214	0.214	UPL
Methoxychlor	72-43-5	-	-	-	-	-	-	-	-	-	-	-	-	-
Monobutyltin	78763-54-9	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	91-20-3	0.176	-	-	-	-	-	0.176	-	0.176	62 [g]	-	0.176	Eco
n-Butylbenzene	104-51-8	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	7440-02-0	18	-	-	-	-	-	18	-	18	-	21.2	21.2	UPL
N-Nitrosodiphenylamine	86-30-6	-	-	-	-	-	-	-	-	-	-	-	-	-
n-Propylbenzene	103-65-1	-	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	95-47-6	-	-	-	-	-	-	-	-	-	-	-	-	-
p-cresol (4-Methylphenol)	106-44-5	-	-	-	-	-	-	-	-	0.048 [p]	-	-	0.048 [p]	Eco
Pentachlorophenol	87-86-5	-	-	0.33	0.31	0.25	0.03	0.31	0.03	0.31	0.03	-	0.03	HH
Phenanthrene	85-01-8	0.042	-	-	-	-	-	0.042	-	0.042	62 [g]	-	0.042	Eco
Phenol	108-95-2	0.048	-	-	-	-	-	0.048	-	0.048	-	-	0.048	Eco
Total Polychlorinated biphenyl (PCB)	1336-36-3	0.034	0.0018	0.044	0.022	0.00039	0.000048	0.0018	0.000048	0.0018	0.000048	-	0.000048	HH
Total PAH		1.61	-	-	-	-	-	1.61	-	1.61	-	-	1.61	Eco
Total LPAH		0.076	-	-	-	-	-	0.076	-	0.076	-	-	0.076	Eco
Total HPAH		0.193	-	-	-	-	-	0.193	-	0.193	-	-	0.193	Eco
Potassium	7440-09-7	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	129-00-0	0.053	-	18000	1.9	380	47	0.053	47	0.053	47	-	0.053	Eco
Residual Range Organics	RRO	-	-	-	-	-	-	-	-	-	-	-	-	-
sec-Butylbenzene	135-98-8	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	7782-49-2	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	7440-22-4	4.5	-	-	-	-	-	4.5	-	4.5	-	-	4.5	Eco
Sodium	7440-23-5	-	-	-		-	-	-	-	-	-	-	-	-
Solids, Total	TS	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	100-42-5	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene (PCE)	127-18-4	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	7440-28-0	-	-	-	-	-	-	-	-	-	-	0.354	0.354	UPL
Toluene	108-88-3	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	156-60-5	-	-	-	-	-	-	-	-	-	-	-	-	-
Tributyltin	688-73-3	-	1.6	0.73	0.0023	0.085	0.01	0.0023	0.01	0.0023	0.01	-	0.0023	Eco
Trichloroethene (TCE)	79-01-6	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	75-69-4	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	7440-62-2	-	-	-	-	-	-	-	-	-	-	70.6	70.6	UPL
Zinc	7440-66-6	123	-	-	-	-	-	123	-	123	-	106	123	Eco

Note
- = No benchmark available
DEQ = Oregon Department of Environmental Quality
Eco = ecological
HH = human health
mg/kg = milligram per kilogram
SLV = screening level value
UPL = Upper Prediction Limit

[a] Eco SLV Sediment: Benzo(k)fluoranthene was used as a surrogate because there was no chemical specific SLV.
[b] Eco SLV Sediment: Di-n-butyl phthalate was used as a surrogate because there was no chemical specific SLV and di-n-butyl phthalate had the lowest SLV of the phthalates.
[c] Eco SLV Sediment: Total PCBs was used as a surrogate because the SLV is based on bioaccumulation and is more conservative than the DEQ Level II individual aroclor SLVs, which do not take into account bioaccumulation.
[d] Eco and HH SLV Sediment: Chlordane (technical) was used as a surrogate because there was no chemical specific SLV and chlordane (technical) was the lowest of the chlordanes.
[e] Eco SLV Sediment: BHC (gamma) Lindane was used as a surrogate because there was no chemical specific SLV and BHC (gamma) was the lowest of the BHCs.
[f] Eco and HH SLV Sediment: DDT (Total) was used as a surrogate because there was no chemical specific SLVs.
[g] HH SLV Sediment: Fluoranthene was used as a surrogate because there was no chemical specific SLV and fluoranthene had the lowest SLV of the low Molecular Weight PAHs.
[h] HH SLV Sediment: Pyrene was used as a surrogate because there was no chemical specific SLV and pyrene had the lowest SLV of the High Molecular Weight PAHs.
[i] HH SLV Sediment: Total Aroclors was used as a surrogate because there was no individual aroclor chemical specific SLV.
[j] DEQ. 1998. Updated 2001. Guidance for Ecological Risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.
[k] DEQ 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31
[l] The lowest of the Eco Screening levels (DEQ II SLV, Birds Individual, Mammals Individual, and Fish Freshwater) was selected.
[m] Human Subsistence was used
[n] Site-Specific Reference UPLs are based are not based on toxicity values.
[o] For organics, the lower of the Lowest Eco and Lowest HH SLV was selected as the RI SLV.
For inorganics, the Lowest Eco and HH SLV was selected, unless the Site-Specific Reference UPL was greater, then the Site-Specific Reference UPL was selected as the RI SLV.
[p] Eco Sediment: Phenol was used as a surrogate because there was no chemical specific SLV and phenol had the lowest SLV of the phenols.
[q] HH SLV Sediment: Hexachlorobenzene was used as a surrogate because there was no chemical specific SLV.
[r] HH SLV Sediment: Dieldrin was used as a surrogate because there was no chemical specific SLV.

Table J-1f - Miniumum Potentially Applicable Tissue SLVs for Identification of Preliminary COPCs
Bradford Island, River Operable Unit
(1 of 2)

Analyte	CAS #	Candidate Tissue Screening levels (mg/kg wet wt.)									Selected Min. Potentially Applicable Tissue SLV [h]	SLV: HH or Eco
		DEQ ATLs [d]				DEQ Fish CTLs Freshwater[d]	Lowest Eco SLV	Lowest HH SLV	SLVs with Surrogates			
		Birds	Mammals	Humans Subsistence/Tribal								
		Individual	Individual	Carcinogens	Non-carcinogens				Lowest Eco [e]	Lowest HH [f]		
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	0.00016	0.0058	0.000076	-	-	0.00016	0.000076	0.00016	0.000076	0.000076	HH
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	0.00008	0.002	0.000025	-	-	0.00008	0.000025	0.00008	0.000025	0.000025	HH
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	0.08	0.02	0.00025	-	-	0.02	0.00025	0.02	0.00025	0.00025	HH
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	0.8	0.02	0.00025	-	-	0.02	0.00025	0.02	0.00025	0.00025	HH
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	0.8	0.02	0.00025	-	-	0.02	0.00025	0.02	0.00025	0.00025	HH
2,3',4,4',5'-Pentachlorobiphenyl	65510-44-3	0.8	0.02	0.00025	-	-	0.02	0.00025	0.02	0.00025	0.00025	HH
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	0.00008	0.0000058	0.000000076	-	-	0.0000058	0.000000076	0.0000058	0.000000076	0.000000076	HH
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	0.08	0.02	0.00025	-	-	0.02	0.00025	0.02	0.00025	0.00025	HH
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	0.08	0.02	0.00025	-	-	0.02	0.00025	0.02	0.00025	0.00025	HH
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	0.8	0.02	0.00025	-	-	0.02	0.00025	0.02	0.00025	0.00025	HH
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	0.008	0.00002	0.00000025	-	-	0.00002	0.00000025	0.00002	0.00000025	0.00000025	HH
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	0.8	0.02	0.00025	-	-	0.02	0.00025	0.02	0.00025	0.00025	HH
Acenaphthene	83-32-9	-	-	-	-	-	-	-	19 [g]	15 [h]	15 [h]	HH
Acenaphthylene	208-96-8	-	-	-	-	-	-	-	19 [g]	15 [h]	15 [h]	HH
Aluminum	7429-90-5	-	-	-	-	-	-	-	-	-	-	-
Anthracene	120-12-7	-	-	-	-	-	-	-	19 [g]	15 [h]	15 [h]	HH
Antimony	7440-36-0	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1016	12674-11-2	-	-	-	-	-	-	-	0.035 [b]	0.00057 [b]	0.00057 [b]	HH
Aroclor 1221	11104-28-2	-	-	-	-	-	-	-	0.035 [b]	0.00057 [b]	0.00057 [b]	HH
Aroclor 1232	11141-16-5	-	-	-	-	-	-	-	0.035 [b]	0.00057 [b]	0.00057 [b]	HH
Aroclor 1242	53469-21-9	-	-	-	-	-	-	-	0.035 [b]	0.00057 [b]	0.00057 [b]	HH
Aroclor 1248	12672-29-6	-	-	-	-	-	-	-	0.035 [b]	0.00057 [b]	0.00057 [b]	HH
Aroclor 1254	11097-69-1	-	-	-	-	-	-	-	0.035 [b]	0.00057 [b]	0.00057 [b]	HH
Aroclor 1260	11096-82-5	-	-	-	-	-	-	-	0.035 [b]	0.00057 [b]	0.00057 [b]	HH
Aroclor 1262	37324-23-5	-	-	-	-	-	-	-	0.035 [b]	0.00057 [b]	0.00057 [b]	HH
Aroclor 1268	11100-14-4	-	-	-	-	-	-	-	0.035 [b]	0.00057 [b]	0.00057 [b]	HH
Arsenic	7440-38-2	13	7.6	0.00076	0.15	6.6	6.6	0.00076	6.6	0.00076	0.00076	HH
Barium	7440-39-3	-	-	-	-	-	-	-	-	-	-	-
Benz(a)anthracene	56-55-3	-	-	0.00157	-	-	-	0.00157	1 [h]	0.00157 [i]	0.00157 [i]	HH
Benzo(a)pyrene	50-32-8	-	-	0.000157	-	-	-	0.000157	1 [h]	0.000157 [i]	0.000157 [i]	HH
Benzo(b)fluoranthene	205-99-2	-	-	0.00157	-	-	-	0.00157	1 [h]	0.00157 [i]	0.00157 [i]	HH
Benzo(g,h,i)perylene	191-24-2	-	-	0.0157	-	-	-	0.0157	1 [h]	0.0157 [i]	0.0157 [i]	HH
Benzo(k)fluoranthene	207-08-9	-	-	0.0157	-	-	-	0.0157	1 [h]	0.0157 [i]	0.0157 [i]	HH
Beryllium	7440-41-7	-	-	-	-	-	-	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	117-81-7	6.26	55.5	0.0819	-	1.76	1.76	0.0819	1.76 [i]	0.0819 [i]	0.0819 [i]	HH
Butyl Benzyl Phthalate	85-68-7	6.26	55.5	0.604	-	0.310	0.310	0.604	0.310 [i]	0.604 [i]	0.310 [i]	Eco
Cadmium	7440-43-9	8.4	5.6	-	0.49	0.15	0.15	0.49	0.15	0.49	0.15	Eco
Carbazole	86-74-8	-	-	-	-	-	-	-	-	-	-	-
Chromium	7440-47-3	-	-	-	-	-	-	-	-	-	-	-
Chrysene	218-01-9	-	-	0.157	-	-	-	0.157	1 [h]	0.157 [i]	0.157 [i]	HH
Cobalt	7440-48-4	-	-	-	-	-	-	-	-	-	-	-
Copper	7440-50-8	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	53-70-3	-	-	0.000157	-	-	-	0.000157	1 [h]	0.000157 [i]	0.000157 [i]	HH
Di-n-butyl Phthalate	84-74-2	0.626	1672	-	49.2	3.12	0.626	49.2	0.626 [i]	49.2 [i]	0.626 [i]	Eco
Di-n-octyl Phthalate	117-84-0	0.626	1672	-	49.2	63.0	0.626	49.2	0.626 [i]	49.2 [i]	0.626 [i]	Eco

Table J-1f - Miniumum Potentially Applicable Tissue SLVs for Identification of Preliminary COPCs
Bradford Island, River Operable Unit
(2 of 2)

Analyte	CAS #	Candidate Tissue Screening levels (mg/kg wet wt.)									Selected Min. Potentially Applicable Tissue SLV [h]	SLV: HH or Eco
		DEQ ATLs [d]				DEQ Fish CTLs Freshwater[d]	Lowest Eco SLV	Lowest HH SLV	SLVs with Surrogates			
		Birds	Mammals	Humans Subsistence/Tribal								
		Individual	Individual	Carcinogens	Non-carcinogens				Lowest Eco [e]	Lowest HH [f]		
Fluoranthene	206-44-0	-	190	-	20	19	19	20	19	20	19	Eco
Fluorene	86-73-7	-	-	-	-	-	-	-	19 [g]	15 [h]	15 [h]	HH
Indeno(1,2,3-cd)pyrene	193-39-5	-	-	0.00157	-	-	-	0.00157	1 [h]	0.00157 [i]	0.00157 [i]	HH
Lead	7439-92-1	9.3	34	-	0.5	0.12	0.12	0.5	0.12	0.5	0.12	Eco
Mercury	7439-97-6	0.074	0.12	-	0.049	0.088	0.074	0.049	0.074	0.049	0.049	HH
Nickel	7440-02-0	-	-	-	-	-	-	-	-	-	-	-
p-cresol (4-Methylphenol)	106-44-5	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	85-01-8	-	-	-	-	-	-	-	19 [g]	15 [h]	15 [h]	HH
Pyrene	129-00-0	-	9500	-	15	1	1	15	1	15	1	Eco
Selenium	7782-49-2	0.23	0.036	-	2.5	0.024	0.024	2.5	0.024	2.5	0.024	Eco
Silver	7440-22-4	-	-	-	-	-	-	-	-	-	-	-
Thallium	7440-28-0	-	-	-	-	-	-	-	-	-	-	-
Total Polychlorinated biphenyl (PCB)	1336-36-3	0.035	0.88	0.00057	0.0098	0.43	0.035	0.00057	0.035	0.00057	0.00057	HH
Total PAH		-	-	-	-	-	-	-	-	-	-	-
Total LPAH		-	-	-	-	-	-	-	-	-	-	-
Total HPAH		-	-	-	-	-	-	-	-	-	-	-
Vanadium	7440-62-2	-	-	-	-	-	-	-	-	-	-	-
Zinc	7440-66-6	-	-	-	-	-	-	-	-	-	-	-

Note
- = No benchmark available
ATL = Acceptable tissue level
CTL = Critical tissue level (for fish)
DEQ = Oregon Department of Environmental Quality
Eco = ecological
HH = human health
mg/kg = milligram per kilogram
RI = Remedial Investigation
SLV = screening level value
UPL = Upper Prediction Limit

[b] Eco & HH SLV: Total Aroclors was used as a surrogate because there was no individual aroclor chemical specific SLV.
[d] DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31
[e] The lowest of the Eco SLVs (DEQ Bird ATL, DEQ Mammal ATL, and DEQ Fish Freshwater CTL) was selected.
[f] The lowest of the HH SLVs (DEQ Subsistence/Tribal Carcinogen ATL and DEQ Subsistence/Tribal Non-Carcinogen ATL) was selected.
[g] The SLV for fluoranthene was selected as a surrogate because there was no chemical-specific SLV.
[h] The SLV for pyrene was selected as a surrogate because there was no chemical-specific SLV.
[i] The ATLs and CTLs were developed based on the procedures outlined in DEQ 2007; see Appendices L-2 and L-3.

Table J-2a
Calculation of Acceptable Tissue Levels Protective of Human Health for Selected SVOCs - Subsistence Fisher
Bradford Island, River Operable Unit
(1 of 1)

Chemical Class	Chemical Name		ARLc	ARLn	BW (kg)	AT (yrs)	Sfo (mg/kg-day)-1	IRp (Kg/day)	ED (yrs)	RfD (mg/kg-day)	HH ATL (mg/kg ww)	
											carcinogens	noncarcin
SVOCs	Bis(2-ethylhexyl) Phthalate	c	1.00E-06	1	70	70	0.014	0.1424	30	0.02	0.0819	-
SVOCs	Butyl Benzyl Phthalate	c	1.00E-06	1	70	70	0.0019	0.1424	30	0.2	0.604	-
SVOCs	Di-n-butyl Phthalate	n	1.00E-06	1	70	30	-	0.1424	30	0.1	-	49.2
SVOCs	Di-n-octyl Phthalate	n	1.00E-06	1	70	30	-	0.1424	30	0.1	-	49.2
cPAHs	Benzo(a)anthracene	c	1.00E-06	1	70	70	0.73	0.1424	30	-	0.00157	-
cPAHs	Benzo(a)pyrene	c	1.00E-06	1	70	70	7.3	0.1424	30	-	1.57E-04	-
cPAHs	Benzo(b)fluoranthene	c	1.00E-06	1	70	70	0.73	0.1424	30	-	0.00157	-
cPAHs	Benzo(g,h,i)perylene	c	1.00E-06	1	70	70	0.073	0.1424	30	-	0.0157	-
cPAHs	Benzo(k)fluoranthene	c	1.00E-06	1	70	70	0.073	0.1424	30	-	0.0157	-
cPAHs	Chrysene	c	1.00E-06	1	70	70	0.0073	0.1424	30	-	0.157	-
cPAHs	Dibenz(a,h)anthracene	c	1.00E-06	1	70	70	7.3	0.1424	30	-	1.57E-04	-
cPAHs	Indeno(1,2,3-cd)pyrene	c	1.00E-06	1	70	70	0.73	0.1424	30	-	0.00157	-

- = no data
ARL_c = Acceptable Risk Level for Carcinogens
ARL_n = Acceptable Risk Level for Non - Carcinogens
AT = Averaging Time
ATL = Acceptable Tissue Level
BW = Body Weight
c = carcinogen
ED = Exposure Duration
IRp = Fish consumption rate for exposed population
kg = kilogram
kg/day = kilograms per day
mg/kg-day = milligrams per kilogram per day
mg/kg ww = milligrams per kilogram wet weight
n = noncarcinogen
RfD = Reference Dose
SFo = Cancer Slope Factor
yrs = years

Notes
$HH\ ATL_{carcinogen} = (ARLc*BW*AT)/(SFo*IRp*ED)$
$HH\ ATL_{noncarcin} = (ARLn*BW*RfD)/IRp$
Di-n-butylphthalate RfDo used as surrogate for di-n-octyl phthalate.
Hierarchy of SFo and RfD; 1. DEQ 2007 2. USEPA 2009
Exposure parameters come from DEQ 2007 table A-2.

Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment.
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Table. May.

Table J-2b
Calculation of Acceptable Tissue Levels Protective of Human Health for Selected SVOCs - Recreational Fisher
Bradford Island, River Operable Unit
(1 of 1)

Chemical Class	Chemical Name		ARLc	ARLn	BW (kg)	AT (yrs)	Sfo (mg/kg-day)-1	IRp (Kg/day)	ED (yrs)	RfD (mg/kg-day)	HH ATL (mg/kg ww)	
											carcinogens	noncarcin
SVOCs	Bis(2-ethylhexyl) Phthalate	c	1.00E-06	1	70	70	0.014	0.0175	30	0.02	0.667	-
SVOCs	Butyl Benzyl Phthalate	c	1.00E-06	1	70	70	0.0019	0.0175	30	0.2	4.91	-
SVOCs	Di-n-butyl Phthalate	n	1.00E-06	1	70	30	-	0.0175	30	0.1	-	400
SVOCs	Di-n-octyl Phthalate	n	1.00E-06	1	70	30	-	0.0175	30	0.1	-	400
cPAHs	Benzo(a)anthracene	c	1.00E-06	1	70	70	0.73	0.0175	30	-	0.0128	-
cPAHs	Benzo(a)pyrene	c	1.00E-06	1	70	70	7.3	0.0175	30	-	0.00128	-
cPAHs	Benzo(b)fluoranthene	c	1.00E-06	1	70	70	0.73	0.0175	30	-	0.0128	-
cPAHs	Benzo(g,h,i)perylene	c	1.00E-06	1	70	70	0.073	0.0175	30	-	0.128	-
cPAHs	Benzo(k)fluoranthene	c	1.00E-06	1	70	70	0.073	0.0175	30	-	0.128	-
cPAHs	Chrysene	c	1.00E-06	1	70	70	0.0073	0.0175	30	-	1.28	-
cPAHs	Dibenz(a,h)anthracene	c	1.00E-06	1	70	70	7.3	0.0175	30	-	0.00128	-
cPAHs	Indeno(1,2,3-cd)pyrene	c	1.00E-06	1	70	70	0.73	0.0175	30	-	0.0128	-

- = no data
ARL_c = Acceptable Risk Level for Carcinogens
ARL_n = Acceptable Risk Level for Non - Carcinogens
AT = Averaging Time
ATL = Acceptable Tissue Level
BW = Body Weight
c = carcinogen
ED = Exposure Duration
IRp = Fish consumption rate for exposed population
kg = kilogram
kg/day = kilograms per day
mg/kg-day = milligrams per kilogram per day
mg/kg ww = milligrams per kilogram wet weight
n = noncarcinogen
RfD = Reference Dose
SFo = Cancer Slope Factor
yrs = years

Notes
$HH\ ATL_{carcinogen} = (ARLc*BW*AT)/(SFo*IRp*ED)$
$HH\ ATL_{noncarcin} = (ARLn*BW*RfD)/IRp$
Di-n-butyl phthalate RfDo used as surrogate for di-n-octyl phthalate.
Hierarchy of SFo and RfD; 1. DEQ 2007 2. USEPA 2009
Exposure parameters come from DEQ 2007 table A-2.
Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment.
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Table. May.

Table J-3
Calculated Acceptable Tissue Levels and Critical Tissue Levels Protective of Wildlife and Fish for Selected SVOCs
Bradford Island, River Operable Unit
(1 of 1)

Chemical Class	Chemical Name	TRV NOAEL AVIAN	TRV LOAEL AVIAN	TRV NOAEL MAMMAL	TRV LOAEL MAMMAL	IRw Heron (kg/day)	IRw Mink (Kg/day)	BW Heron (Kg)	BW Mink (Kg)	BCF (L/kg)	WQC (mg/L)	Tissue Levels for Ecological Receptors (mg/kg wet wt)				
												$ATL_{birdindiv}$	$ATL_{birdpop}$	$ATL_{mamalindiv}$	$ATL_{mamalpop}$	CTL_{fish}
SVOCs	Bis(2-ethylhexyl) Phthalate	1.1	5.5	7.6	76	0.42	0.137	2.39	1	588	0.003	6.26	31.3	55.5	555	1.76
SVOCs	Butyl Benzyl Phthalate	1.1	5.5	7.6	76	0.42	0.137	2.39	1	16.3	0.019	6.26	31.3	55.5	555	0.310
SVOCs	Di-n-butyl Phthalate	0.11	1.1	229	763	0.42	0.137	2.39	1	89	0.035	0.626	6.26	1,672	5,569	3.12
SVOCs	Di-n-octyl Phthalate	0.11	1.1	229	763	0.42	0.137	2.39	1	89	0.708	0.626	6.26	1,672	5,569	63.0

Notes:

ATL = Acceptable Tissue Level (developed to protect birds and mammals at the individual level as well as the population level)
CTL = Critical Tissue Level
TRV = Toxicity Reference Value
NOAEL = No-Observable-Adverse-Effects-Level
LOAEL = Lowest-Observable-Adverse-Effects-Level
IRw = Food ingestion rate for wildlife
BW = Body Weight
BCF = Water to Fish Bioconcentration Factor
WQC = Water Quality Criteria
$ATL_{wildlife}$ = TRV/(IR/BW)
CTL_{fish} = BCF*WQC
Bis(2-ethylhexyl) phthalate TRVs were used as a surrogate for butyl benzyl phthalate. The chronic LOAEL for bis(2-ethylhexyl) phthalate was estimated by applying a factor of 5.
Di-n-butyl phthalate TRVs and BCF were used as a surrogate for di-n-octyl phthalate.
TRVs come from Sample et al 1996. Mink and great blue heron were used as endpoint species to be consistent with the ATLs used from DEQ's guidance (2007).

Water to fish BCFs for bis(2-ethylhexyl) phthalate and butyl benzyl phthalate from: Oak Ridge National Laboratory's Risk Assessment Information System (RAIS) database URL:http://rais.ornl.gov/ (last updated 2009). BCF for di-n-butyl phthalate and di-n-octyl phthalate from WDOE URL:http://fortess.wa.gov/ecy/clarc/Reporting/CLARCReporting.aspx
WQC presented in Table H-3 (Appendix H) - criterion continuous concentrations protective of aquatic biota.
Sample, B.E., D.M. Opresko, and G.W Suter II. 1996. Toxicological Benchmarks for Wildlife: 1996 Revision. Oak Ridge National Laboratory, Oak Ridge, Tennessee. 227 pages. ES/ER/ TM-86/R3.
Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment.

Table J-4a - Human Health Soil SLVs
Bradford Island, Upland Operable Unit
(1 of 5)

Analyte	CAS #	Candidate Human Health Soil Screening Level Values (mg/kg)					Selected Soil SLVs (mg/kg)			Site-Specific Reference UPL
		DEQ Soil Direct Contact Occupational RBC	DEQ Soil Direct Contact Construction RBC	DEQ Soil Direct Contact Excavation RBC	DEQ Soil Volatilize Outdoor Occupational RBC	USEPA Soil Indust RSL	Outdoor Worker	Construction Worker	Excavation Worker	
1,1,1,2-Tetrachloroethane	630-20-6	-	-	-	-	9.3	9.3	9.3	9.3	-
1,1,1-Trichloroethane (TCA)	71-55-6	-	-	-	-	38,000	38,000	38,000	38,000	-
1,1,2,2-Tetrachloroethane	79-34-5	-	-	-	-	2.8	2.8	2.8	2.8	-
1,1,2-Trichloroethane	79-00-5	25	290	8,100	24	5.3	24	290	8,100	-
1,1-Dichloroethane	75-34-3	250	2,900	81,000	240	17	240	2,900	81,000	-
1,1-Dichloroethene	75-35-4	27,000	12,000	-	-	1,100	27,000	12,000	1,100	-
1,1-Dichloropropene	563-58-6	-	-	-	-	-	8.1 [a]	8.1 [a]	8.1 [a]	-
1,2,3-Trichlorobenzene	87-61-6	-	-	-	-	490	490	490	490	-
1,2,3-Trichloropropane	96-18-4	-	-	-	-	0.095	0.095	0.095	0.095	-
1,2,4-Trichlorobenzene	120-82-1	-	-	-	-	99	99	99	99	-
1,2,4-Trimethylbenzene	95-63-6	2,000	2,000	54,000	980	260	980	2,000	54,000	-
1,2-Dibromo-3-chloropropane	96-12-8	-	-	-	-	0.069	0.069	0.069	0.069	-
1,2-Dibromoethane (EDB)	106-93-4	0.68	8.1	230	0.65	0.17	0.65	8.1	230	-
1,2-Dichlorobenzene	95-50-1	35,000	19,000	-	-	9,800	35,000	19,000	9,800	-
1,2-Dichloroethane (EDC)	107-06-2	15	180	5,000	15	2.2	15	180	5,000	-
1,2-Dichloropropane	78-87-5	-	-	-	-	4.5	4.5	4.5	4.5	-
1,3,5-Trimethylbenzene	108-67-8	1,600	1,500	42,000	-	10,000	1,600	1,500	42,000	-
1,3-Dichlorobenzene	541-73-1	-	-	-	-	-	36 [b]	1,200 [b]	34,000 [b]	-
1,3-Dichloropropane	142-28-9	-	-	-	-	20,000	20,000	20,000	20,000	-
1,4-Dichlorobenzene	106-46-7	63	1,200	34,000	36	12	36	1,200	34,000	-
2,2-Dichloropropane	594-20-7	-	-	-	-	-	4.5 [c]	4.5 [c]	4.5 [c]	-
2,4,5-T	93-76-5	-	-	-	-	6,200	6,200	6,200	6,200	-
2,4,5-TP (Silvex)	93-72-1	-	-	-	-	4,900	4,900	4,900	4,900	-
2,4,5-Trichlorophenol	95-95-4	-	-	-	-	62,000	62,000	62,000	62,000	-
2,4,6-Trichlorophenol	88-06-2	200	240	6,600	-	160	200	240	6,600	-
2,4-D	94-75-7	7,700	2,400	66,000	-	7,700	7,700	2,400	66,000	-
2,4-DB	94-82-6	-	-	-	-	4,900	4,900	4,900	4,900	-
2,4-Dichlorophenol	120-83-2	-	-	-	-	1,800	1,800	1,800	1,800	-
2,4-Dimethylphenol	105-67-9	-	-	-	-	12,000	12,000	12,000	12,000	-
2,4-Dinitrophenol	51-28-5	-	-	-	-	1,200	1,200	1,200	1,200	-
2,4-Dinitrotoluene	121-14-2	-	-	-	-	5.5	5.5	5.5	5.5	-
2,6-Dinitrotoluene	606-20-2	770	240	6,600	-	620	770	240	6,600	-
2-Butanone (MEK)	78-93-3	-	-	-	-	200,000	200,000	200,000	200,000	-
2-Chloronaphthalene	91-58-7	-	-	-	-	82,000	82,000	82,000	82,000	-
2-Chlorophenol	95-57-8	-	-	-	-	5,100	5,100	5,100	5,100	-
2-Chlorotoluene	95-49-8	-	-	-	-	20,000	20,000	20,000	20,000	-
2-Hexanone	591-78-6	-	-	-	-	1,400	1,400	1,400	1,400	-
2-Methylnaphthalene	91-57-6	-	-	-	-	4,100	4,100	4,100	4,100	-
2-Methylphenol	95-48-7	-	-	-	-	31,000	31,000	31,000	31,000	-
2-Nitroaniline	88-74-4	-	-	-	-	6,000	6,000	6,000	6,000	-
2-Nitrophenol	88-75-5	-	-	-	-	-	180,000 [d]	180,000 [d]	180,000 [d]	-
3,3'-Dichlorobenzidine	91-94-1	4.8	37	1,000	-	3.8	4.8	37	1,000	-
3-Nitroaniline	99-09-2	-	-	-	-	-	6,000 [e]	6,000 [e]	6,000 [e]	-
4,4'-DDD	72-54-8	11	83	2,300	-	7.2	11	83	2,300	-
4,4'-DDE	72-55-9	7.7	58	1,600	-	5.1	7.7	58	1,600	-
4,4'-DDT	50-29-3	7.7	58	1,600	-	7	7.7	58	1,600	-
4,6-Dinitro-2-methylphenol	534-52-1	-	-	-	-	49	49	49	49	-
4-Bromophenyl Phenyl Ether	101-55-3	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	59-50-7	-	-	-	-	62,000	62,000	62,000	62,000	-
4-Chloroaniline	106-47-8	-	-	-	-	8.6	8.6	8.6	8.6	-
4-Chlorophenyl Phenyl Ether	7005-72-3	-	-	-	-	-	-	-	-	-
4-Chlorotoluene	106-43-4	-	-	-	-	72,000	72,000	72,000	72,000	-
4-Isopropyltoluene	99-87-6	-	-	-	-	-	53,000 [y]	24,000 [y]	24,000 [y]	-

Table J-4a - Human Health Soil SLVs
Bradford Island, Upland Operable Unit
(2 of 5)

Analyte	CAS #	Candidate Human Health Soil Screening Level Values (mg/kg)					Selected Soil SLVs (mg/kg)			Site-Specific Reference UPL
		DEQ Soil Direct Contact Occupational RBC	DEQ Soil Direct Contact Construction RBC	DEQ Soil Direct Contact Excavation RBC	DEQ Soil Volatilize Outdoor Occupational RBC	USEPA Soil Indust RSL	Outdoor Worker	Construction Worker	Excavation Worker	
4-Methyl-2-pentanone (MIBK)	108-10-1	-	-	-	-	53,000	53,000	53,000	53,000	-
4-Nitroaniline	100-01-6	-	-	-	-	86	86	86	86	-
4-Nitrophenol	100-02-7	-	-	-	-	-	180,000 [d]	180,000 [d]	180,000 [d]	-
Acenaphthene	83-32-9	61,000	19,000	-	-	33,000	61,000	19,000	33,000	3.40
Acenaphthylene	208-96-8	-	-	-	-	-	23 [f]	580 [f]	16,000 [f]	1.60
Acetone	67-64-1	-	-	-	-	630,000	630,000	630,000	630,000	-
Aldrin	309-00-2	0.13	0.98	27	-	0.1	0.13	0.98	27	-
Aluminum	7429-90-5	-	-	-	-	990,000	990,000	990,000	990,000	31,400
Aniline	62-53-3	-	-	-	-	300	300	300	300	-
Anthracene	120-12-7	-	93,000	-	-	170,000	170,000	93,000	170,000	4.90
Antimony	7440-36-0	-	-	-	-	410	410	410	410	0.176
Aroclor 1016	12674-11-2	-	-	-	-	21	21	21	21	-
Aroclor 1221	11104-28-2	-	-	-	-	0.54	0.54	0.54	0.54	-
Aroclor 1232	11141-16-5	-	-	-	-	0.54	0.54	0.54	0.54	-
Aroclor 1242	53469-21-9	-	-	-	-	0.74	0.74	0.74	0.74	-
Aroclor 1248	12672-29-6	-	-	-	-	0.74	0.74	0.74	0.74	-
Aroclor 1254	11097-69-1	-	-	-	-	0.74	0.74	0.74	0.74	-
Aroclor 1260	11096-82-5	-	-	-	-	0.74	0.74	0.74	0.74	-
Aroclor 1262	37324-23-5	-	-	-	-	-	0.54 [g]	0.54 [g]	0.54 [g]	-
Aroclor 1268	11100-14-4	-	-	-	-	-	0.54 [g]	0.54 [g]	0.54 [g]	-
Arsenic	7440-38-2	1.7	13	370	-	1.6	5.40 [u]	13	370	5.40
Barium	7440-39-3	-	60,000	-	-	190,000	190,000	60,000	190,000	169
Benzo(a)anthracene	56-55-3	2.7	21	590	-	2.1	2.7	21	590	28.7
Benzene	71-43-2	34	340	9,500	50	5.4	34	340	9,500	-
Benzidine	92-87-5	55	510	14,000	-	0.0075	55	510	14,000	-
Benzo(a)pyrene	50-32-8	0.27	2.1	59	-	0.21	0.27	2.1	59	37.0
Benzo(b)fluoranthene	205-99-2	2.7	21	590	-	2.1	2.7	21	590	46.4
Benzo(g,h,i)perylene	191-24-2	-	-	-	-	-	27 [h]	210 [h]	5,900 [h]	26.5
Benzo(j,k)flouranthenes	205-82-3 & 207-08-9	-	-	-	-	-	27 [aa]	210 [aa]	5,900 [aa]	-
Benzo(k)fluoranthene	207-08-9	27	210	5,900	-	21	27	210	5,900	16.2
Benzofluoranthenes, Total	56832-73-6	-	-	-	-	-	2.7 [ab]	21 [ab]	590 [ab]	-
Benzoic Acid	65-85-0	-	-	-	-	2,500,000	2,500,000	2,500,000	2,500,000	-
Benzyl Alcohol	100-51-6	-	-	-	-	62,000	62,000	62,000	62,000	-
Beryllium	7440-41-7	2,000	610	17,000	-	2,000	2,000	610	17,000	0.659
BHC (alpha)	319-84-6	0.34	2.6	74	-	0.27	0.34	2.6	74	-
BHC (beta)	319-85-7	-	-	-	-	0.96	0.96	0.96	0.96	-
BHC (delta)	319-86-8	-	-	-	-	-	0.34 [i]	2.6 [i]	74 [i]	-
BHC (gamma) Lindane	58-89-9	2	15	420	-	2.1	2	15	420	-
Bis(2-chloroethoxy)methane	111-91-1	-	-	-	-	1,800	1,800	1,800	1,800	-
Bis(2-chloroethyl) Ether	111-44-4	-	-	-	-	1	1	1	1	-
Bis(2-chloroisopropyl) Ether	or 108-60-1	-	-	-	-	-	1 [j]	1 [j]	1 [j]	-
Bis(2-ethylhexyl) Phthalate	117-81-7	150	1,200	33,000	-	120	150	1,200	33,000	-
Bromobenzene	108-86-1	-	-	-	-	1,800	1,800	1,800	1,800	-
Bromochloromethane	74-97-5	-	-	-	-	-	11 [k]	210 [k]	5,800 [k]	-
Bromodichloromethane	75-27-4	15	210	5,800	11	1.4	11	210	5,800	-
Bromoform	75-25-2	360	2,700	76,000	-	220	360	2,700	76,000	-
Bromomethane	74-83-9	710	330	9,200	700	32	700	330	9,200	-
Butyl Benzyl Phthalate	85-68-7	-	-	-	-	910	910	910	910	-
Cadmium	7440-43-9	500	150	4,300	-	800 [l]	500	150	4,300	0.271
Calcium	7440-70-2	-	-	-	-	-	-	-	-	-
Carbazole	86-74-8	-	-	-	-	-	1,000 [w]	1,000 [w]	1,000 [w]	-
Carbon Disulfide	75-15-0	-	-	-	-	3,700	3,700	3,700	3,700	-
Carbon Tetrachloride	56-23-5	15	150	4,100	26.0	1.2	15	150	4,100	-

Table J-4a - Human Health Soil SLVs
Bradford Island, Upland Operable Unit
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Analyte	CAS #	Candidate Human Health Soil Screening Level Values (mg/kg)					Selected Soil SLVs (mg/kg)			Site-Specific Reference UPL
		DEQ Soil Direct Contact Occupational RBC	DEQ Soil Direct Contact Construction RBC	DEQ Soil Direct Contact Excavation RBC	DEQ Soil Volatilize Outdoor Occupational RBC	USEPA Soil Indust RSL	Outdoor Worker	Construction Worker	Excavation Worker	
Carbon, Total Organic	7440-44-0	-	-	-	-	-	-	-	-	-
Chlordane (alpha)	5103-71-9	-	-	-	-	-	7.2 [m]	55 [m]	1,500 [m]	-
Chlordane (gamma)	5103-74-2	-	-	-	-	-	7.2 [m]	55 [m]	1,500 [m]	-
Chlordane (technical)	12789-03-6	7.2	55	1,500	-	6.5	7.2	55	1,500	-
Chlorobenzene	108-90-7	8,300	4,300	-	-	1,400	8,300	4,300	1,400	-
Chloroethane	75-00-3	-	-	-	-	61,000	61,000	61,000	61,000	-
Chloroform	67-66-3	25	380	11,000	17	1.5	17	380	11,000	-
Chloromethane	74-87-3	25,000	25,000	-	-	500	25,000	25,000	500	-
Chromium	7440-47-3	190 [z]	920 [z]	26,000 [z]	-	5.6 [z]	190 [z]	920 [z]	26,000 [z]	28.1
Chrysene	218-01-9	270	2,100	59,000	-	210	270	2,100	59,000	37.4
cis-1,2-Dichloroethene	156-59-2	10,000	3,100	86,000	-	10,000	10,000	3,100	86,000	-
cis-1,3-Dichloropropene	10061-01-5	-	-	-	-	-	8.1 [a]	8.1 [a]	8.1 [a]	-
Cobalt	7440-48-4	-	-	-	-	300	300	300	300	19.9
Copper	7440-50-8	41,000	12,000	-	-	41,000	41,000	12,000	41,000	56.7
Dalapon	75-99-0	-	-	-	-	18,000	18,000	18,000	18,000	-
Dibenz(a,h)anthracene	53-70-3	0.27	2.1	59	-	0.21	0.27	2.1	59	6.90
Dibenzofuran	132-64-9	-	-	-	-	1,000	1,000	1,000	1,000	-
Dibromochloromethane	124-48-1	34	260	7,200	-	3.3	34	260	7,200	-
Dibromomethane	74-95-3	-	-	-	-	110	110	110	110	-
Dibutyltin	1002-53-5	-	-	-	-	180	180	180	180	-
Dicamba	1918-00-9	-	-	-	-	18,000	18,000	18,000	18,000	-
Dichlorodifluoromethane	75-71-8	-	-	-	-	780	780	780	780	-
Dichloromethane (Methylene Chloride)	75-09-2	310	2,700	75,000	830	53	310	2,700	75,000	-
Dichloroprop	120-36-5	-	-	-	-	-	4,900 [v]	4,900 [v]	4,900 [v]	-
Dieldrin	60-57-1	0.13	1	29	-	0.11	0.13	1	29	-
Diesel Range Organics	68334-30-5	70,000	23,000	-	-	-	70,000	23,000	70,000	-
Diethyl Phthalate	84-66-2	-	-	-	-	490,000	490,000	490,000	490,000	-
Dimethyl Phthalate	131-11-3	-	-	-	-	-	150 [n]	1,200 [n]	33,000 [n]	-
Di-n-butyl Phthalate	84-74-2	-	-	-	-	62,000	62,000	62,000	62,000	-
Di-n-octyl Phthalate	117-84-0	-	-	-	-	-	150 [n]	1,200 [n]	33,000 [n]	-
Dinoseb	88-85-7	-	-	-	-	620	620	620	620	-
Endosulfan I	959-98-8	4,600	1,400	40,000	-	3,700 [o]	4,600	1,400	40,000	-
Endosulfan II	33213-65-9	4,600	1,400	40,000	-	3,700 [o]	4,600	1,400	40,000	-
Endosulfan Sulfate	1031-07-8	-	-	-	-	-	4,600 [o]	1,400 [o]	40,000 [o]	-
Endrin	72-20-8	230	71	2,000	-	180	230	71	2,000	-
Endrin Aldehyde	7421-93-4	-	-	-	-	-	230 [p]	71 [p]	2,000 [p]	-
Endrin Ketone	53494-70-5	-	-	-	-	-	230 [p]	71 [p]	2,000 [p]	-
Ethylbenzene	100-41-4	140	1,600	44,000	160	27	140	1,600	44,000	-
Fluoranthene	206-44-0	29,000	8,900	-	-	22,000	29,000	8,900	22,000	55.1
Fluorene	86-73-7	41,000	12,000	-	-	22,000	41,000	12,000	22,000	3.20
Gasoline Range Organics	8006-61-9	22,000	13,000	-	100,000	-	22,000	13,000	22,000	-
Heptachlor	76-44-8	0.48	3.7	100	-	0.38	0.48	3.7	100	-
Heptachlor Epoxide	1024-57-3	0.24	1.8	51	-	0.19	0.24	1.8	51	-
Hexachlorobenzene	118-74-1	1.8	14	380	-	1.1	1.8	14	380	-
Hexachlorobutadiene	87-68-3	-	-	-	-	22	22	22	22	-
Hexachlorocyclopentadiene	77-47-4	-	-	-	-	3,700	3,700	3,700	3,700	-
Hexachloroethane	67-72-1	150	240	6,600	-	120	150	240	6,600	-
Indeno(1,2,3-cd)pyrene	193-39-5	2.7	21	590	-	2.1	2.7	21	590	29.4
Iron	7439-89-6	-	-	-	-	720,000	720,000	720,000	720,000	-
Isophorone	78-59-1	-	-	-	-	1,800	1,800	1,800	1,800	-
Isopropylbenzene	98-82-8	53,000	24,000	-	-	11,000	53,000	24,000	11,000	-
Lead	7439-92-1	800	800	800	-	800	800	800	800	25.5
m,p-Xylenes	179601-23-1	25,000	19,000	-	-	2,700 [q]	2,700	19,000	2,700	-

Table J-4a - Human Health Soil SLVs
Bradford Island, Upland Operable Unit
(4 of 5)

Analyte	CAS #	Candidate Human Health Soil Screening Level Values (mg/kg)					Selected Soil SLVs (mg/kg)			Site-Specific Reference UPL
		DEQ Soil Direct Contact Occupational RBC	DEQ Soil Direct Contact Construction RBC	DEQ Soil Direct Contact Excavation RBC	DEQ Soil Volatilize Outdoor Occupational RBC	USEPA Soil Indust RSL	Outdoor Worker	Construction Worker	Excavation Worker	
Magnesium	7439-95-4	-	-	-	-	-	-	-	-	-
Manganese	7439-96-5	23,000	7,200	-	-	23,000 [r]	23,000	7,200	23,000	885
MCPA	94-74-6	380	120	3,300	-	310	380	120	3,300	-
MCPP	93-65-2	-	-	-	-	620	620	620	620	-
Mercury	7439-97-6	310	93	2,600	-	34	310	93	2,600	0.066
Methoxychlor	72-43-5	-	-	-	-	3,100	3,100	3,100	3,100	-
Monobutyltin	78763-54-9	-	-	-	-	-	180 [s]	180 [s]	180 [s]	-
Naphthalene	91-20-3	23	580	16,000	27	18	23	580	16,000	2.20
n-Butylbenzene	104-51-8	-	-	-	-	-	-	-	-	-
Nickel	7440-02-0	20,000	6,100	-	-	20,000	20,000	6,100	20,000	26.5
Nitrobenzene	98-95-3	-	-	-	-	24	24	24	24	-
N-Nitrosodimethylamine	62-75-9	-	-	-	-	0.034	0.034	0.034	0.034	-
N-Nitrosodi-n-propylamine	621-64-7	-	-	-	-	0.25	0.25	0.25	0.25	-
N-Nitrosodiphenylamine	86-30-6	-	-	-	-	350	350	350	350	-
n-Propylbenzene	103-65-1	-	-	-	-	21,000	21,000	21,000	21,000	-
o-Xylene	95-47-6	-	-	-	-	19,000	19,000	19,000	19,000	-
p-cresol (4-Methylphenol)	106-44-5	-	-	-	-	3,100	3,100	3,100	3,100	-
Pentachlorophenol	87-86-5	13	100	2,900	-	9	13	100	2,900	-
Phenanthrene	85-01-8	-	-	-	-	-	170,000 [x]	93,000 [x]	170,000 [x]	27.0
Phenol	108-95-2	-	-	-	-	180,000	180,000	180,000	180,000	-
Potassium	7440-09-7	-	-	-	-	-	-	-	-	-
Pyrene	129-00-0	21,000	6,700	-	-	17,000	21,000	6,700	17,000	53.3
Residual Range Organics	RRO	-	40,000	-	-	-	40,000 [ac]	40,000	40,000 [ac]	-
sec-Butylbenzene	135-98-8	-	-	-	-	-	-	-	-	-
Selenium	7782-49-2	-	-	-	-	5,100	5,100	5,100	5,100	0.500
Silver	7440-22-4	5,100	1,500	43,000	-	5,100	5,100	1,500	43,000	0.187
Sodium	7440-23-5	-	-	-	-	-	-	-	-	-
Solids, Total	TS	-	-	-	-	-	-	-	-	-
Styrene	100-42-5	-	51,000	-	-	36,000	36,000	51,000	36,000	-
tert-Butylbenzene	98-06-6	-	-	-	-	-	-	-	-	-
Tetrabutyltin	1461-25-2	-	-	-	-	-	180 [s]	180 [s]	180 [s]	-
Tetrachloroethene (PCE)	127-18-4	5.1	40	1,100	66	2.6	5.1	40	1,100	-
Thallium	7440-28-0	-	-	-	-	-	0.203 [u]	0.203 [u]	0.203 [u]	0.203
Toluene	108-88-3	77,000	24,000	-	-	45,000	77,000	24,000	45,000	-
Total PCBs		0.98	4.4	120	-	0.74	0.74 [t]	0.74 [t]	0.74 [t]	-
Total PAH		-	-	-	-	-	-	-	-	-
Total LPAH		-	-	-	-	-	-	-	-	-
Total HPAH		-	-	-	-	-	-	-	-	-
Toxaphene	8001-35-2	2	15	420	-	1.6	2	15	420	-
trans-1,2-Dichloroethene	156-60-5	9,200	4,500	-	-	690	9,200	4,500	690	-
trans-1,3-Dichloropropene	10061-02-6	-	-	-	-	-	8.1 [a]	8.1 [a]	8.1 [a]	-
Tributyltin	688-73-3	-	-	-	-	180	180	180	180	-
Trichloroethene (TCE)	79-01-6	3.9	43	1,200	4.3	14	3.9	43	1,200	-
Trichlorofluoromethane	75-69-4	-	63,000	-	-	3,400	3,400	63,000	3,400	-
Vanadium	7440-62-2	-	-	-	-	72	104 [u]	104 [u]	104 [u]	104
Vinyl Acetate	108-05-4	-	-	-	-	4,100	4,100	4,100	4,100	-
Vinyl Chloride	75-01-4	3.9	30	830	89	1.7	3.9	30	830	-
Zinc	7440-66-6	-	-	-	-	310,000	310,000	310,000	310,000	71.7

- = No benchmark available
DEQ = Oregon Department of Environmental Quality
USEPA = United States Environmental Protection Agency
HMW = high molecular weight

Table J-4a - Human Health Soil SLVs
Bradford Island, Upland Operable Unit
(5 of 5)

Analyte	CAS #	Candidate Human Health Soil Screening Level Values (mg/kg)					Selected Soil SLVs (mg/kg)			Site-Specific Reference UPL
		DEQ Soil Direct Contact Occupational RBC	DEQ Soil Direct Contact Construction RBC	DEQ Soil Direct Contact Excavation RBC	DEQ Soil Volatilize Outdoor Occupational RBC	USEPA Soil Indust RSL	Outdoor Worker	Construction Worker	Excavation Worker	

LMW = low molecular weight
mg/kg = milligram per kilogram dry weight
PAH = polycyclic aromatic hydrocarbons
RBC = Risk Based Concentrations
RSL = Regional Screening Level
SLV = screening level value
UPL = upper prediction limit

Notes
Only analytes with one or more candidate SLVs is shown on this table. For the full list of analytes, see Appendix K-1.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, 3. Surrogate used as noted.
Construction Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Construction,. 2. USEPA Soil Industrial RSL, 3. Surrogate used as noted.
Excavation Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Excavation), 2. USEPA Soil Industrial RSL, 3. Outdoor Worker SLV, 4. Surrogate used as noted.
LMW PAHs include: 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, and Phenanthrene.
HWM PAHs include : Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(j,k)flouranthenes, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, and Pyrene.
Human Health Screening Levels correspond to a target risk of 1E-06 for carcinogens and target hazard quotient of 1.0 for non-carcinogens for the selected receptor and pathway.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Level. May.
For Arsenic and Vanadium, the Site-Specific Reference UPLs were greater than the SLVs based on health risk (DEQ and/or USEPA), therefore the Reference UPLs were used as the Selected SLVs.

Footnotes
[a] 1,3- Dichloropropene was used as a surrogate because there was no chemical specific SLV.
[b] 1,4- Dichlorobenzene was used as a surrogate because there was no chemical specific SLV.
[c] 1,2- Dichloropropane was used as a surrogate because there was no chemical specific SLV.
[d] Phenol was used as a surrogate because there was no chemical specific SLV.
[e] 2-Nitroaniline was used as a surrogate because there was no chemical specific SLV.
[f] Naphthalene was used as a surrogate because there was no chemical-specific SLV.
[g] Aroclor 1221 was used as a surrogate because there was no chemical specific SLV.
[h] Toxic Equivalency Factors for Benzo(g,h,i)perylene (0.01) was applied to the Benzo(a)pyrene SLV because there was no chemical specific SLV.
[i] BHC alpha was used as a surrogate, because there was no chemical-specific SLV, and BHC alpha was the lowest BHC.
[j] Bis(2-chloroethyl) ether was used as a surrogate because there was no chemical specific SLV.
[k] Bromodichloromethane was used as a surrogate because there was no chemical specific SLV.
[l] Cadmium (diet) was used as opposed to Cadmium (water).
[m] Chlordane (technical) was used as a surrogate because there was no chemical specific SLV.
[n] Bis(2-ethylhexyl) Phthalate was used as a surrogate, because there was no chemical-specific SLV, and Bis(2-ethylhexyl) Phthalate was the lowest phthalate.
[o] Endosulfan was used as a surrogate because there was no chemical specific SLV.
[p] Endrin was used as a surrogate because there was no chemical specific SLV.
[q] Xylene (mixed) was used as a surrogate because there was no chemical specific SLV.
[r] Manganese (water) was used as opposed to Manganese (diet).
[s] Tributyltin was used as a surrogate because there was no chemical specific SLV.
[t] The RSL for Total PCBs was selected as the SLV per DEQ.
[u] For metals only, the reference UPL was higher than the selected HH SLV.
[v] The SLV for 2,4,5-TP (Silvex) was selected as a surrogate because there was no chemical specific SLV.
[w] The SLV for dibenzofuran was selected as a surrogate because there was no chemical specific SLV.
[x] The SLV for anthracene was selected as a surrogate because there was no chemical specific SLV.
[y] The SLV for isopropylbenzene (cumene) was selected as a surrogate because there was no chemical specific SLV.
[z] Assumed worst case scenario, total Cr as 100% Chromium VI.
[aa] Benzo(k)fluoranthene was used as a surrogate because there was no chemical specific SLV.
[ab] Benzo(b)fluoranthene was used as a surrogate because there was no chemical-specific SLV and benzo(b)fluoranthene had the lowest SLV of the benzofluoranthenes.
[ac] Residual Range Organics for Construction Worker was used as a surrogate because receptor specific RBC is greater than the maximum (100,000 mg/kg).

Table J-4b - Human Health Potable Water SLVs
Bradford Island, Upland Operable Unit
(1 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Direct Contact (ug/L)							Selected Potable Water User SLVs (ug/L)	
		DEQ GW Ingest Residential RBC	DEQ GW Ingest Occupational RBC	DEQ GW Volatilize Outdoor Air Occupational RBC	DEQ GW Vapor Intrusion Occupational RBC	DEQ GW Excavation Construct/Exca RBC	USEPA Tapwater RSL	DEQ MCL	Groundwater/Seep water	Surface Water
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	-	-	-	-	-	0.0052	-	0.0052	0.0052
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	-	-	-	-	-	0.0052	-	0.0052	0.0052
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	-	-	-	-	-	0.0052	-	0.0052	0.0052
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	-	-	-	-	-	0.0001	-	0.0001	0.0001
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	-	-	-	-	-	0.0052	-	0.0052	0.0052
2,3',4,4',5'-Pentachlorobiphenyl	65510-44-3	-	-	-	-	-	0.0052	-	0.0052	0.0052
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	-	-	-	-	-	0.0000052	-	0.0000052	0.0000052
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	-	-	-	-	-	0.001	-	0.001	0.001
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	-	-	-	-	-	0.001	-	0.001	0.001
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	-	-	-	-	-	0.052	-	0.052	0.052
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	-	-	-	-	-	0.000052	-	0.000052	0.000052
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	-	-	-	-	-	0.0052	-	0.0052	0.0052
1,1,1,2-Tetrachloroethane	630-20-6	-	-	-	-	-	0.52	-	0.52	0.52
1,1,1-Trichloroethane (TCA)	71-55-6	9,100	38,000	-	-	1,100,000	9,100	200	9,100	9,100
1,1,2,2-Tetrachloroethane	79-34-5	-	-	-	-	-	0.067	-	0.067	0.067
1,1,2-Trichloroethane	79-00-5	0.23	1.3	19,000	8,800	990	0.24	5	0.23	0.23
1,1-Dichloroethane	75-34-3	2.3	13	73,000	16,000	10,000	2.4	-	2.3	2.3
1,1-Dichloroethene	75-35-4	340	1,400	-	340,000	43,000	340	7	340	340
1,1-Dichloropropene	563-58-6	-	-	-	-	-	0.43	-	0.43 [a]	0.43 [a]
1,2,3-Trichlorobenzene	87-61-6	-	-	-	-	-	29	-	29	29
1,2,3-Trichloropropane	96-18-4	-	-	-	-	-	0.00072	-	0.00072	0.00072
1,2,4-Trichlorobenzene	120-82-1	-	-	-	-	-	2.3	0.07	2.3	2.3
1,2,4-Trimethylbenzene	95-63-6	15	61	-	-	1,700	15	-	15	15
1,2-Dibromo-3-chloropropane	96-12-8	-	-	-	-	-	0.00032	-	0.00032	0.00032
1,2-Dibromoethane (EDB)	106-93-4	0.0063	0.034	960	690	28	0.0065	-	0.0063	0.0063
1,2-Dichlorobenzene	95-50-1	370	1,500	-	-	37,000	370	600	370	370
1,2-Dichloroethane (EDC)	107-06-2	0.14	0.78	9,500	3,800	630	0.15	5	0.14	0.14
1,2-Dichloropropane	78-87-5	-	-	-	-	-	0.39	5	0.39	0.39
1,3,5-Trimethylbenzene	108-67-8	12	52	-	41,000	1,400	370	-	12	12
1,3-Dichlorobenzene	541-73-1	-	-	-	-	-	-	-	0.42 [b]	0.42 [b]
1,3-Dichloropropane	142-28-9	-	-	-	-	-	730	-	730	730
1,4-Dichlorobenzene	106-46-7	0.42	2.2	20,000	5,700	1,500	0.43	75	0.42	0.42
2,2-Dichloropropane	594-20-7	-	-	-	-	-	-	-	0.39 [c]	0.39 [c]
2,3,7,8-TCDD (TEQ)	-	0.00000044	0.0000031	-	-	0.000016	0.00000052	0.00000003	0.00000044	0.00000044
2,4,5-T	93-76-5	-	-	-	-	-	370	-	370	370
2,4,5-TP (Silvex)	93-72-1	-	-	-	-	-	290	50	290	290
2,4,5-Trichlorophenol	95-95-4	-	-	-	-	-	3,700	-	3,700	3,700
2,4,6-Trichlorophenol	88-06-2	5.2	37	-	-	1,600	6.1	-	5.2	5.2
2,4-D	94-75-7	370	1,500	-	-	72,000	370	70	370	370
2,4-DB	94-82-6	-	-	-	-	-	290	-	290	290
2,4-Dichlorophenol	120-83-2	-	-	-	-	-	110	-	110	110
2,4-Dimethylphenol	105-67-9	-	-	-	-	-	730	-	730	730
2,4-Dinitrophenol	51-28-5	-	-	-	-	-	73	-	73	73
2,4-Dinitrotoluene	121-14-2	-	-	-	-	-	0.22	-	0.22	0.22
2,6-Dinitrotoluene	606-20-2	37	150	-	-	29,000	37	-	37	37
2-Butanone (MEK)	78-93-3	-	-	-	-	-	7,100	-	7,100	7,100
2-Chloroethylvinylether	110-75-8	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	91-58-7	-	-	-	-	-	2,900	-	2,900	2,900
2-Chlorophenol	95-57-8	-	-	-	-	-	180	-	180	180

Table J-4b - Human Health Potable Water SLVs
Bradford Island, Upland Operable Unit
(2 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Direct Contact (ug/L)							Selected Potable Water User SLVs (ug/L)	
		DEQ GW Ingest Residential RBC	DEQ GW Ingest Occupational RBC	DEQ GW Volatilize Outdoor Air Occupational RBC	DEQ GW Vapor Intrusion Occupational RBC	DEQ GW Excavation Construct/Exca RBC	USEPA Tapwater RSL	DEQ MCL	Groundwater/Seep water	Surface Water
2-Chlorotoluene	95-49-8	-	-	-	-	-	730	-	730	730
2-Hexanone	591-78-6	-	-	-	-	-	47	-	47	47
2-Methylnaphthalene	91-57-6	-	-	-	-	-	150	-	150	150
2-Methylphenol	95-48-7	-	-	-	-	-	1,800	-	1,800	1,800
2-Nitroaniline	88-74-4	-	-	-	-	-	370	-	370	370
2-Nitrophenol	88-75-5	-	-	-	-	-	-	-	11,000 [d]	11,000 [d]
3,3'-Dichlorobenzidine	91-94-1	0.13	0.91	-	-	460	0.15	-	0.13	0.13
3-Nitroaniline	99-09-2	-	-	-	-	-	-	-	3.4 [e]	3.4 [e]
4,4'-DDD	72-54-8	0.24	1.7	-	-	40	0.28	-	0.24	0.24
4,4'-DDE	72-55-9	0.17	1.2	-	-	32	0.2	-	0.17	0.17
4,4'-DDT	50-29-3	0.17	1.2	-	-	15	0.2	-	0.17	0.17
4,6-Dinitro-2-methylphenol	534-52-1	-	-	-	-	-	2.9	-	2.9	2.9
4-Chloro-3-methylphenol	59-50-7	-	-	-	-	-	3,700	-	3,700	3,700
4-Chloroaniline	106-47-8	-	-	-	-	-	0.34	-	0.34	0.34
4-Chlorotoluene	106-43-4	-	-	-	-	-	2,600	-	2,600	2,600
4-Methyl-2-pentanone (MIBK)	108-10-1	-	-	-	-	-	2,000	-	2,000	2,000
4-Nitroaniline	100-01-6	-	-	-	-	-	3.4	-	3.4	3.4
4-Nitrophenol	100-02-7	-	-	-	-	-	-	-	11,000 [d]	11,000 [d]
Acenaphthene	83-32-9	2,200	-	-	-	-	2,200	-	2,200	2,200
Acenaphthylene	208-96-8	-	-	-	-	-	-	-	0.14 [f]	0.14 [f]
Acetone	67-64-1	-	-	-	-	-	22,000	-	22,000	22,000
Aldrin	309-00-2	0.0033	0.024	-	-	-	0.004	-	0.0033	0.0033
Aniline	62-53-3	-	-	-	-	-	12	-	12	12
Anthracene	120-12-7	-	-	-	-	-	11,000	-	11,000	11,000
Aroclor 1016	12674-11-2	-	-	-	-	-	0.96	-	0.96	0.96
Aroclor 1221	11104-28-2	-	-	-	-	-	0.0068	-	0.0068	0.0068
Aroclor 1232	11141-16-5	-	-	-	-	-	0.0068	-	0.0068	0.0068
Aroclor 1242	53469-21-9	-	-	-	-	-	0.034	-	0.034	0.034
Aroclor 1248	12672-29-6	-	-	-	-	-	0.034	-	0.034	0.034
Aroclor 1254	11097-69-1	-	-	-	-	-	0.034	-	0.034	0.034
Aroclor 1260	11096-82-5	-	-	-	-	-	0.034	-	0.034	0.034
Benzene	71-43-2	0.39	2.2	14,000	2,800	1,700	0.41	5	0.39	0.39
Benzidine	92-87-5	0.72	14	-	-	130,000	0.000094	-	0.72	0.72
Benzo(a)anthracene	56-55-3	0.029	0.56	-	-	9.1	0.029	-	0.029	0.029
Benzo(a)pyrene	50-32-8	0.0029	0.056	-	-	0.53	0.0029	0.2	0.0029	0.0029
Benzo(b)fluoranthene	205-99-2	0.029	0.56	-	-	-	0.029	-	0.029	0.029
Benzo(g,h,i)perylene	191-24-2	-	-	-	-	-	-	-	0.29 [g]	0.29 [g]
Benzo(j,k)flouranthenes	205-82-3 & 207-08-9	-	-	-	-	-	-	-	0.29 [x]	0.29 [x]
Benzo(k)fluoranthene	207-08-9	0.29	-	-	-	-	0.29	-	0.29	0.29
Benzofluoranthenes, Total	56832-73-6	-	-	-	-	-	-	-	0.029 [y]	0.029 [y]
Benzoic Acid	65-85-0	-	-	-	-	-	150,000	-	150,000	150,000
Benzyl Alcohol	100-51-6	-	-	-	-	-	3,700	-	3,700	3,700
BHC (alpha)	319-84-6	0.009	0.065	-	-	28	0.011	-	0.009	0.009
BHC (beta)	319-85-7	-	-	-	-	-	0.037	-	0.037	0.037
BHC (delta)	319-86-8	-	-	-	-	-	-	-	0.009 [h]	0.009 [h]
BHC (gamma) Lindane	58-89-9	0.052	0.37	-	-	170	0.061	0.2	0.052	0.052
Bis(2-chloroethoxy)methane	111-91-1	-	-	-	-	-	110	-	110	110
Bis(2-chloroethyl) Ether	111-44-4	-	-	-	-	-	0.012	-	0.012	0.012

Table J-4b - Human Health Potable Water SLVs
Bradford Island, Upland Operable Unit
(3 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Direct Contact (ug/L)							Selected Potable Water User SLVs (ug/L)	
		DEQ GW Ingest Residential RBC	DEQ GW Ingest Occupational RBC	DEQ GW Volatilize Outdoor Air Occupational RBC	DEQ GW Vapor Intrusion Occupational RBC	DEQ GW Excavation Construct/Exca RBC	USEPA Tapwater RSL	DEQ MCL	Groundwater/Seep water	Surface Water
Bis(2-ethylhexyl) Phthalate	117-81-7	4.1	29	-	-	-	4.8	-	4.1	4.1
Bromobenzene	108-86-1	-	-	-	-	-	88	-	88	88
Bromochloromethane	74-97-5	-	-	-	-	-	-	-	0.12 [i]	0.12 [i]
Bromodichloromethane	75-27-4	0.12	0.6	9,300	5,600	450	0.12	-	0.12	0.12
Bromoform	75-25-2	7.2	52	-	-	150,000	8.5	-	7.2	7.2
Bromomethane	74-83-9	8.7	36	170,000	36,000	1,200	8.7	-	8.7	8.7
Butyl Benzyl Phthalate	85-68-7	-	-	-	-	-	35	-	35	35
Carbon Disulfide	75-15-0	-	-	-	-	-	1,000	-	1,000	1,000
Carbon Tetrachloride	56-23-5	0.19	1.1	2,200	320	770	0.2	5	0.19	0.19
Chlordane (alpha)	5103-71-9	-	-	-	-	-	-	-	0.16 [j]	0.16 [j]
Chlordane (gamma)	5103-74-2	-	-	-	-	-	-	-	0.16 [j]	0.16 [j]
Chlordane (technical)	12789-03-6	0.16	1.2	-	-	-	0.19	2	0.16	0.16
Chlorobenzene	108-90-7	91	380	-	-	10,000	91	100	91	91
Chloroethane	75-00-3	21,000	88,000	-	-	2,400,000	21,000	-	21,000	21,000
Chloroform	67-66-3	0.19	0.99	5,500	1,200	720	0.19	-	0.19	0.19
Chloromethane	74-87-3	190	790	2,100,000	320,000	22,000	190	-	190	190
Chrysene	218-01-9	-	-	-	-	-	2.9	-	2.9	2.9
cis-1,2-Dichloroethene	156-59-2	360	1,500	-	-	120,000	370	70	360	360
cis-1,3-Dichloropropene	10061-01-5	-	-	-	-	-	0.43	-	0.43 [a]	0.43 [a]
Dalapon	75-99-0	-	-	-	-	-	1,100	200	1,100	1,100
Dibenz(a,h)anthracene	53-70-3	0.0029	0.056	-	-	0.21	0.0029	-	0.0029	0.0029
Dibenzofuran	132-64-9	-	-	-	-	-	37	-	37	37
Dibromochloromethane	124-48-1	0.68	4.9	-	-	13,000	0.15	-	0.68	0.68
Dibromomethane	74-95-3	-	-	-	-	-	8.2	-	8.2	8.2
Dibutyltin	1002-53-5	-	-	-	-	-	11	-	11 [k]	11 [k]
Dicamba	1918-00-9	-	-	-	-	-	1,100	-	1,100	1,100
Dichlorodifluoromethane	75-71-8	-	-	-	-	-	390	-	390	390
Dichloromethane (Methylene Chloride)	75-09-2	4.4	27	330,000	99,000	32,000	4.8	5	4.4	4.4
Dichloroprop	120-36-5	-	-	-	-	-	290	-	290 [l]	290 [l]
Dieldrin	60-57-1	0.0035	0.026	-	-	6.1	0.0042	-	0.0035	0.0035
Diesel Range Organics	68334-30-5	90	360	-	-	-	-	-	90	90
Diethyl Phthalate	84-66-2	-	-	-	-	-	29,000	-	29,000	29,000
Dimethyl Phthalate	131-11-3	-	-	-	-	-	-	-	29,000 [m]	29,000 [m]
Di-n-butyl Phthalate	84-74-2	-	-	-	-	-	3,700	-	3,700	3,700
Di-n-octyl Phthalate	117-84-0	-	-	-	-	-	-	-	4.1 [n]	4.1 [n]
Dinoseb	88-85-7	-	-	-	-	-	37	7	37	37
Endosulfan I	959-98-8	-	-	-	-	-	220	-	220 [o]	220 [o]
Endosulfan II	33213-65-9	-	-	-	-	-	220	-	220 [o]	220 [o]
Endosulfan Sulfate	1031-07-8	-	-	-	-	-	220	-	220 [o]	220 [o]
Endrin	72-20-8	11	44	-	-	-	11	2	11	11
Endrin Aldehyde	7421-93-4	-	-	-	-	-	-	-	11 [p]	11 [p]
Endrin Ketone	53494-70-5	-	-	-	-	-	-	-	11 [p]	11 [p]
Ethylbenzene	100-41-4	1.4	7.8	41,000	7,400	4,400	1.5	700	1.4	1.4
Fluoranthene	206-44-0	-	-	-	-	-	1,500	-	1,500	1,500
Fluorene	86-73-7	1,500	-	-	-	-	1,500	-	1,500	1,500
Gasoline Range Organics	8006-61-9	100	420	-	-	13,000	-	-	100	100
Heptachlor	76-44-8	0.013	0.091	-	-	32	0.015	0.4	0.013	0.013
Heptachlor Epoxide	1024-57-3	0.0062	0.045	-	-	3.2	0.0074	0.2	0.0062	0.0062
Hexachlorobenzene	118-74-1	0.035	0.26	-	-	10	0.042	1	0.035	0.035

Table J-4b - Human Health Potable Water SLVs
Bradford Island, Upland Operable Unit
(4 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Direct Contact (ug/L)							Selected Potable Water User SLVs (ug/L)	
		DEQ GW Ingest Residential RBC	DEQ GW Ingest Occupational RBC	DEQ GW Volatilize Outdoor Air Occupational RBC	DEQ GW Vapor Intrusion Occupational RBC	DEQ GW Excavation Construct/Exca RBC	USEPA Tapwater RSL	DEQ MCL	Groundwater/Seep water	Surface Water
Hexachlorobutadiene	87-68-3	-	-	-	-	-	0.86	-	0.86	0.86
Hexachlorocyclopentadiene	77-47-4	-	-	-	-	-	220	50	220	220
Hexachloroethane	67-72-1	4.1	29	-	-	1,400	4.8	-	4.1	4.1
Indeno(1,2,3-cd)pyrene	193-39-5	-	-	-	-	-	0.029	-	0.029	0.029
Isophorone	78-59-1	-	-	-	-	-	71	-	71	71
Isopropylbenzene	98-82-8	-	-	-	-	-	680	-	680	680
m,p-Xylenes	179601-23-1	-	-	200	850	2,300	200	10,000	200 q	200 q
MCPA	94-74-6	18	73	-	-	6,600	18	-	18	18
MCPP	93-65-2	-	-	-	-	-	37	-	37	37
Methoxychlor	72-43-5	-	-	-	-	-	180	40	180	180
Monobutyltin	78763-54-9	-	-	-	-	-	-	-	11 s	11 s
Naphthalene	91-20-3	0.14	0.72	16,000	10,000	500	0.14	-	0.14	0.14
Nitrobenzene	98-95-3	-	-	-	-	-	0.12	-	0.12	0.12
N-Nitrosodimethylamine	62-75-9	-	-	-	-	-	0.00042	-	0.00042	0.00042
N-Nitrosodi-n-propylamine	621-64-7	-	-	-	-	-	0.0096	-	0.0096	0.0096
N-Nitrosodiphenylamine	86-30-6	-	-	-	-	-	14	-	14	14
n-Propylbenzene	103-65-1	-	-	-	-	-	1,300	-	1,300	1,300
o-Xylene	95-47-6	-	-	-	-	-	1,200	-	1,200	1,200
p-cresol (4-Methylphenol)	106-44-5	-	-	-	-	-	180	-	180	180
Pentachlorophenol	87-86-5	0.47	3.4	-	-	52	0.56	1	0.47	0.47
Phenanthrene	85-01-8	-	-	-	-	-	-	-	11,000 w	11,000 w
Phenol	108-95-2	-	-	-	-	-	11,000	-	11,000	11,000
Pyrene	129-00-0	-	-	-	-	-	1,100	-	1,100	1,100
Residual Range Organics	RRO	290	1,100	-	-	-	-	-	290	290
Styrene	100-42-5	1,600	6,700	-	-	160,000	1,600	100	1,600	1,600
Tetrabutyltin	1461-25-2	-	-	-	-	-	-	-	11 s	11 s
Tetrachloroethene (PCE)	127-18-4	0.093	0.64	9,200	1,400	240	0.11	5	0.093	0.093
Toluene	108-88-3	2,300	9,200	-	-	210,000	2,300	1,000	2,300	2,300
Total PCBs	1336-36-3	0.028	0.2	-	-	1.9	0.17	0.5	0.17 r	0.17 r
Toxaphene	8001-35-2	0.052	0.37	-	-	71	0.061	3	0.052	0.052
trans-1,2-Dichloroethene	156-60-5	110	450	1,800,000	350,000	14,000	110	100	110	110
trans-1,3-Dichloropropene	10061-02-6	-	-	-	-	-	0.43	-	0.43 a	0.43 a
Tributyltin	688-73-3	-	-	-	-	-	11	-	11 s	11 s
Trichloroethene (TCE)	79-01-6	0.039	0.22	870	150	160	2	5	0.039	0.039
Trichlorofluoromethane	75-69-4	1,300	5,400	-	340,000	160,000	1,300	-	1,300	1,300
Vinyl Acetate	108-05-4	-	-	-	-	-	410	-	410	410
Vinyl Chloride	75-01-4	0.025	0.52	6,800	910	1,200	0.016	2	0.025	0.025
Cyanide (Hydrogen Cyanide)	74-90-8	730	2,900	-	-	2,500,000	6.2	-	730	730
Fluoride	16984-48-8	-	-	-	-	-	1,500	4,000	1,500	1,500
Nitrate as Nitrogen	14797-55-8	-	-	-	-	-	58,000	10,000	58,000	58,000
Nitrate+Nitrite as Nitrogen	NOx-N	-	-	-	-	-	-	10,000	10,000	10,000
Aluminum	7429-90-5	-	-	-	-	-	37,000	-	37,000	37,000
Antimony	7440-36-0	-	-	-	-	-	15	6	15	15
Arsenic	7440-38-2	0.038	0.27	-	-	5,800	0.045	10	0.038	0.038
Barium	7440-39-3	7,300	29,000	-	-	25,000,000	7,300	2,000	7,300	7,300
Beryllium	7440-41-7	73	290	-	-	250,000	73	4	73	73
Cadmium	7440-43-9	18	73	-	-	57,000	18 t	5	18	18
Chromium	7440-47-3	55,000	220,000	-	-	-	-	100	55,000	55,000
Cobalt	7440-48-4	-	-	-	-	-	11	-	11	11

Table J-4b - Human Health Potable Water SLVs
Bradford Island, Upland Operable Unit
(5 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Direct Contact (ug/L)							Selected Potable Water User SLVs (ug/L)	
		DEQ GW Ingest Residential RBC	DEQ GW Ingest Occupational RBC	DEQ GW Volatilize Outdoor Air Occupational RBC	DEQ GW Vapor Intrusion Occupational RBC	DEQ GW Excavation Construct/Exca RBC	USEPA Tapwater RSL	DEQ MCL	Groundwater/Seep water	Surface Water
Copper	7440-50-8	1,500	5,800	-	-	5,000,000	1,500	1,300	1,500	1,500
Iron	7439-89-6	-	-	-	-	-	26,000	-	26,000	26,000
Lead	7439-92-1	15	15	-	-	-	-	15	15	15
Manganese	7439-96-5	880	3,500	-	-	3,000,000	880 [u]	-	880	880
Mercury	7439-97-6	11	44	-	-	-	0.57	2	11	11
Nickel	7440-02-0	730	2,900	-	-	12,000,000	730	-	730	730
Selenium	7782-49-2	-	-	-	-	-	180	50	180	180
Silver	7440-22-4	180	730	-	-	1,000,000	180	-	180	180
Thallium	7440-28-0	-	-	-	-	-	-	2	2	2
Vanadium	7440-62-2	-	-	-	-	-	2.6 [v]	-	2.6	2.6
Zinc	7440-66-6	-	-	-	-	-	11,000	-	11,000	11,000

- = No benchmark available or available benchmark not needed, based on hierarchy of sources
DEQ = Oregon Department of Environmental Quality
USEPA = US Environmental Protection Agency
GW = groundwater
MCL = Maximum Contaminant Level
ug/L = microgram per liter
PAH = Polycyclic aromatic hydrocarbon
RBC = Risk Based Concentrations
RSL = Regional Screening Level
SLV = Screening Level Value

Notes
Only analytes with one or more candidate SLVs is shown on this table. For the full list of analytes, see Appendix K-1.
Potable Water User hierarchical SLV selection for groundwater: 1. DEQ RBCs (the minimum of Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA RSL, and 3. DEQ MCL.
Potable Water User hierarchical SLV selection for surface water: 1. DEQ RBCs (the minimum of Ingest Residential and Ingest Occupational), 2. USEPA RSL, and 3. DEQ MCL.
Human Health Screening Levels correspond to a target risk of 1E-06 for carcinogens and target hazard quotient of 1.0 for non-carcinogens for the selected receptor and pathway. MCLs incorporate considerations of risk as well as feasibility in attaining target level.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2010. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Level. May.

Footnotes
[a] Dichloropropene, 1,3- was used as a surrogate.
[b] 1,4-Dichlorobenzene was used as a surogate because there was no chemical specific SLV.
[c] 1,2- Dichloropropane was used as a surrogate because there was no chemical specific SLV.
[d] Phenol was used as a surrogate because there was no chemical specific SLV.
[e] 2- Nitroaniline was used as a surrogate because there was no chemical specific SLV.
[f] Naphthalene was used as a surrogate because there was no chemical-specific SLV.
[g] Toxic Equivalency Factors for Benzo(g,h,i)perylene (0.01) was applied to the Benzo(a)pyrene SLV because there was no chemical specific SLV.
[h] BHC alpha was used as a surrogate, because there was no chemical-specific SLV, and BHC alpha was the lowest BHC.
[i] Bromodichloromethane was used as a surrogate because there was no chemical specific SLV.
[j] Chlordane was used as a surrogate.
[k] Dibutyltin compounds was used as a surrogate because there was no chemical specific SLV.
[l] 4-(2,4-Dichlorophenoxy)butyric Acid was used as a surrogate because there was no chemical specific SLV.
[m] Diethyl Phthalate was used as a surrogate because there was no chemical specific SLV.
[n] Bis(2-ethyl hexyl) phthalate was used as a surrogate because there was no chemical specific SLV, and Bis(2-ethyl hexyl) phthalate was the lowest of the pthalates.
[o] Endosulfan was used as a surrogate because there was no chemical specific SLV.
[p] Endrin was used as a surrogate because there was no chemical specific SLV.

Table J-4b - Human Health Potable Water SLVs
Bradford Island, Upland Operable Unit
(6 of 6)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Direct Contact (ug/L)							Selected Potable Water User SLVs (ug/L)	
		DEQ GW Ingest Residential RBC	DEQ GW Ingest Occupational RBC	DEQ GW Volatilize Outdoor Air Occupational RBC	DEQ GW Vapor Intrusion Occupational RBC	DEQ GW Excavation Construct/Exca RBC	USEPA Tapwater RSL	DEQ MCL	Groundwater/Seep water	Surface Water

[q] Xylene (mixed) was used as a surrogate because there was no chemical specific SLV.
[r] The RSL for Total PCBs was selected as the SLV per DEQ.
[s] Tributyltin compounds was used as a surrogate because there was no chemical specific SLV.
[t] Cadmium (water) was used.
[u] Manganese (water) was used as opposed to Manganese (diet).
[v] Vanadium, Metallic was used.
[w] Anthracene was used as a surogate because there was no chemical specific SLV.
[x] Benzo(k)fluoranthene was used as a surrogate because there was no chemical specific SLV.
[y] Benzo(b)fluoranthene was used as a surrogate because there was no chemical-specific SLV and benzo(b)fluoranthene had the lowest SLV of the benzofluoranthenes.

Table J-4c - Human Health Discharge to Surface Water Bioaccumulation Water SLVs
Bradford Island, Upland and River Operable Units
(1 of 5)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Discharge to Surface Water and Bioaccumulation (ug/L)						Selected Discharge/Bio SLVs (ug/L) (GW & SW)
		USEPA NRWQC (Water + Organism)	USEPA NRWQC (Organism Only)	DEQ Table 33A WQC (Water+ Organism)	DEQ Table 33A WQC (Organism Only)	DEQ Table 33B WQC (Water+Organism)	DEQ Table 33B WQC (Organism Only)	
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	-	-	-	-	-	-	-
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	-	-	-	-	-	-	-
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	-	-	-	-	-	-	-
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	-	-	-	-	-	-	-
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	-	-	-	-	-	-	-
2,3',4,4',5'-Pentachlorobiphenyl	65510-44-3	-	-	-	-	-	-	-
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	-	-	-	-	-	-	-
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	-	-	-	-	-	-	-
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	-	-	-	-	-	-	-
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	-	-	-	-	-	-	-
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	-	-	-	-	-	-	-
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	79-34-5	0.17	4	0.17	4	-	-	0.17
1,1,2-Trichloroethane	79-00-5	0.59	16	0.59	16	-	-	0.59
1,1-Dichloroethene	75-35-4	330	7,100	330	7,100	-	-	330
1,2,4-Trichlorobenzene	120-82-1	35	70	35	70	-	-	35
1,2-Dichlorobenzene	95-50-1	420	1,300	420	1,300	-	-	420
1,2-Dichloroethane (EDC)	107-06-2	0.38	37	0.38	37	-	-	0.38
1,2-Dichloropropane	78-87-5	0.5	15	0.5	15	-	-	0.5
1,3-Dichlorobenzene	541-73-1	320	960	320	960	-	-	320
1,4-Dichlorobenzene	106-46-7	63	190	63	190	-	-	63
2,2-Dichloropropane	594-20-7	-	-	-	-	-	-	0.5 [b]
2,3,7,8-TCDD (TEQ)	-	0.000000005	5.1E-09	0.000000005	5.1E-09	-	-	0.000000005
2,4,5-Trichlorophenol	95-95-4	-	-	1,800	3,600	-	-	1,800
2,4,6-Trichlorophenol	88-06-2	1.4	2.4	-	2.4	1.4	-	1.4
2,4-D	94-75-7	-	-	100	-	-	-	100
2,4-Dichlorophenol	120-83-2	77	290	77	290	-	-	77
2,4-Dimethylphenol	105-67-9	380	850	380	850	-	-	380
2,4-Dinitrophenol	51-28-5	69	5,300	69	5,300	-	-	69
2,4-Dinitrotoluene	121-14-2	0.11	3.4	0.11	3.4	-	-	0.11
2-Chloronaphthalene	91-58-7	1,000	1,600	1,000	1,600	-	-	1,000
2-Chlorophenol	95-57-8	81	150	81	150	-	-	81
2-Methylnaphthalene	91-57-6	-	-	-	-	-	-	670 [c]
2-Methylphenol	95-48-7	-	-	-	-	-	-	10,000 [d]
2-Nitrophenol	88-75-5	-	-	-	-	-	-	10,000 [d]
3,3'-Dichlorobenzidine	91-94-1	0.021	0.028	0.021	0.028	-	-	0.021
4,4'-DDD	72-54-8	0.00031	0.00031	0.00031	0.00031	-	-	0.00031
4,4'-DDE	72-55-9	0.00022	0.00022	0.00022	0.00022	-	-	0.00022
4,4'-DDT	50-29-3	0.00022	0.00022	-	-	0.00022	0.00022	0.00022
4,6-Dinitro-2-methylphenol	534-52-1	13	280	13	280	-	-	13
4-Nitrophenol	100-02-7	-	-	-	-	-	-	10,000 [d]
Acenaphthene	83-32-9	670	990	670	990	-	-	670
Acenaphthylene	208-96-8	-	-	-	-	-	-	670 [c]

Table J-4c - Human Health Discharge to Surface Water Bioaccumulation Water SLVs
Bradford Island, Upland and River Operable Units
(2 of 5)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Discharge to Surface Water and Bioaccumulation (ug/L)						Selected Discharge/Bio SLVs (ug/L) (GW & SW)
		USEPA NRWQC (Water + Organism)	USEPA NRWQC (Organism Only)	DEQ Table 33A WQC (Water+ Organism)	DEQ Table 33A WQC (Organism Only)	DEQ Table 33B WQC (Water+Organism)	DEQ Table 33B WQC (Organism Only)	
Aldrin	309-00-2	0.000049	0.00005	0.000049	0.00005	-	-	0.000049
Anthracene	120-12-7	8,300	40,000	8,300	40,000	-	-	8,300
Aroclor 1016	12674-11-2	-	-	-	-	-	-	0.000064 [e]
Aroclor 1221	11104-28-2	-	-	-	-	-	-	0.000064 [e]
Aroclor 1232	11141-16-5	-	-	-	-	-	-	0.000064 [e]
Aroclor 1242	53469-21-9	-	-	-	-	-	-	0.000064 [e]
Aroclor 1248	12672-29-6	-	-	-	-	-	-	0.000064 [e]
Aroclor 1254	11097-69-1	-	-	-	-	-	-	0.000064 [e]
Aroclor 1260	11096-82-5	-	-	-	-	-	-	0.000064 [e]
Benzene	71-43-2	2.2	51	-	-	2.2	51	2.2
Benzidine	92-87-5	0.000086	0.0002	0.000086	0.0002	-	-	0.000086
Benzo(a)anthracene	56-55-3	0.0038	0.018	0.0038	0.018	-	-	0.0038
Benzo(a)pyrene	50-32-8	0.0038	0.018	0.0038	0.018	-	-	0.0038
Benzo(b)fluoranthene	205-99-2	0.0038	0.018	0.0038	0.018	-	-	0.0038
Benzo(g,h,i)perylene	191-24-2	-	-	-	-	-	-	0.38 [f]
Benzo(j,k)flouranthenes	205-82-3 & 207-08-9	-	-	-	-	-	-	0.0038 [n]
Benzo(k)fluoranthene	207-08-9	0.0038	0.018	0.0038	0.018	-	-	0.0038
Benzofluoranthenes, Total	56832-73-6	-	-	-	-	-	-	0.0038 [o]
BHC (alpha)	319-84-6	0.0026	0.0049	0.0026	0.0049	-	-	0.0026
BHC (beta)	319-85-7	0.0091	0.017	0.0091	0.017	-	-	0.0091
BHC (delta)	319-86-8	-	-	-	-	-	-	0.0026 [g]
BHC (gamma) Lindane	58-89-9	0.98	1.8	-	-	0.98	1.8	0.98
Bis(2-chloroethyl) Ether	111-44-4	0.03	0.53	0.03	0.53	-	-	0.03
Bis(2-chloroisopropyl) Ether	39638-32-9 or 108-60-1	1,400	65,000	-	-	1,400	65,000	1,400
Bis(2-ethylhexyl) Phthalate	117-81-7	1.2	2.2	1.2	2.2	-	-	1.2
Bromochloromethane	74-97-5	-	-	-	-	-	-	0.55 [h]
Bromodichloromethane	75-27-4	0.55	17	0.55	17	-	-	0.55
Bromoform	75-25-2	4.3	140	4.3	140	-	-	4.3
Bromomethane	74-83-9	47	1,500	47	1,500	-	-	47
Butyl Benzyl Phthalate	85-68-7	1,500	1,900	1,500	1,900	-	-	1,500
Carbon Tetrachloride	56-23-5	0.23	1.6	0.23	1.6	-	-	0.23
Chlordane (alpha)	5103-71-9	-	-	-	-	-	-	0.0008 [i]
Chlordane (gamma)	5103-74-2	-	-	-	-	-	-	0.0008 [i]
Chlordane (technical)	12789-03-6	0.0008	0.00081	-	-	0.0008	0.00081	0.0008
Chlorobenzene	108-90-7	130	1,600	130	1,600	-	-	130
Chloroform	67-66-3	5.7	470	-	-	5.7	470	5.7
Chrysene	218-01-9	0.0038	0.018	0.0038	0.018	-	-	0.0038
Dibenz(a,h)anthracene	53-70-3	0.038	0.018	0.0038	0.018	-	-	0.018
Dibenzofuran	132-64-9	-	-	-	-	-	-	37
Dibromochloromethane	124-48-1	0.4	13	0.4	13	-	-	0.4
Dichloromethane (Methylene Chloride)	75-09-2	4.6	590	4.6	590	-	-	4.6
Dieldrin	60-57-1	0.000052	0.000054	0.000052	0.000054	-	-	0.000052

Table J-4c - Human Health Discharge to Surface Water Bioaccumulation Water SLVs
Bradford Island, Upland and River Operable Units
(3 of 5)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Discharge to Surface Water and Bioaccumulation (ug/L)						Selected Discharge/Bio SLVs (ug/L) (GW & SW)
		USEPA NRWQC (Water + Organism)	USEPA NRWQC (Organism Only)	DEQ Table 33A WQC (Water+ Organism)	DEQ Table 33A WQC (Organism Only)	DEQ Table 33B WQC (Water+Organism)	DEQ Table 33B WQC (Organism Only)	
Diethyl Phthalate	84-66-2	17,000	44,000	17,000	44,000	-	-	17,000
Dimethyl Phthalate	131-11-3	270,000	1,100,000	270,000	1,100,000	-	-	270,000
Di-n-butyl Phthalate	84-74-2	2,000	4,500	2,000	4,500	-	-	2,000
Di-n-octyl Phthalate	117-84-0	-	-	-	-	-	-	1.2 [j]
Endosulfan I	959-98-8	62	89	62	89	-	-	62 [k]
Endosulfan II	33213-65-9	62	89	62	89	-	-	62 [k]
Endosulfan Sulfate	1031-07-8	62	89	62	89	-	-	62 [k]
Endrin	72-20-8	0.059	0.06	0.059	0.06	-	-	0.059
Endrin Aldehyde	7421-93-4	0.29	0.3	0.29	0.3	-	-	0.29
Endrin Ketone	53494-70-5	-	-	-	-	-	-	0.059 [l]
Ethylbenzene	100-41-4	530	2,100	530	2,100	-	-	530
Fluoranthene	206-44-0	130	140	-	-	130	140	130
Fluorene	86-73-7	1,100	5,300	1,100	5,300	-	-	1,100
Heptachlor	76-44-8	0.000079	0.000079	0.000079	0.000079	-	-	0.000079
Heptachlor Epoxide	1024-57-3	0.000039	0.000039	0.000039	0.000039	-	-	0.000039
Hexachlorobenzene	118-74-1	0.00028	0.00029	0.00028	0.00029	-	-	0.00028
Hexachlorobutadiene	87-68-3	0.44	18	0.44	18	-	-	0.44
Hexachlorocyclopentadiene	77-47-4	40	1,100	40	1,100	-	-	40
Hexachloroethane	67-72-1	1.4	3.3	1.4	3.3	-	-	1.4
Indeno(1,2,3-cd)pyrene	193-39-5	0.0038	0.018	0.0038	0.018	-	-	0.0038
Isophorone	78-59-1	35	960	35	960	-	-	35
Methoxychlor	72-43-5	100	-	100	-	-	-	100
Naphthalene	91-20-3	-	-	-	-	-	-	670 [c]
Nitrobenzene	98-95-3	17	690	17	690	-	-	17
N-Nitrosodimethylamine	62-75-9	0.00069	3	0.00069	3	-	-	0.00069
N-Nitrosodi-n-propylamine	621-64-7	0.005	0.51	0.005	0.51	-	-	0.005
N-Nitrosodiphenylamine	86-30-6	3.3	6	3.3	6	-	-	3.3
Pentachlorophenol	87-86-5	0.27	3	0.27	3	-	-	0.27
Phenanthrene	85-01-8	-	-	-	-	-	-	8,300 [m]
Phenol	108-95-2	10,000	860,000	-	1,700,000	21,000	-	10,000
Pyrene	129-00-0	830	4,000	830	4,000	-	-	830
Tetrachloroethene (PCE)	127-18-4	0.69	3.3	0.69	3.3	-	-	0.69
Toluene	108-88-3	1,300	15,000	1,300	15,000	-	-	1,300
Total PCBs	1336-36-3	0.000064	0.000064	0.000064	0.000064	-	-	0.000064
Toxaphene	8001-35-2	0.00028	0.00028	-	-	-	-	0.00028
trans-1,2-Dichloroethene	156-60-5	140	10,000	140	10,000	-	-	140
Trichloroethene (TCE)	79-01-6	2.5	30	2.5	30	-	-	2.5
Vinyl Chloride	75-01-4	0.025	2.4	0.025	2.4	-	-	0.025
Cyanide (Hydrogen Cyanide)	74-90-8	140	140	140	140	-	-	140
Nitrate as Nitrogen	14797-55-8	-	-	10,000	-	-	-	10,000
Antimony	7440-36-0	5.6	640	5.6	640	-	-	5.6
Arsenic	7440-38-2	0.018	0.14	-	-	0.018	0.14	0.018
Barium	7440-39-3	-	-	1,000	-	-	-	1,000

Table J-4c - Human Health Discharge to Surface Water Bioaccumulation Water SLVs
Bradford Island, Upland and River Operable Units
(4 of 5)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Discharge to Surface Water and Bioaccumulation (ug/L)						Selected Discharge/Bio SLVs (ug/L) (GW & SW)
		USEPA NRWQC (Water + Organism)	USEPA NRWQC (Organism Only)	DEQ Table 33A WQC (Water+ Organism)	DEQ Table 33A WQC (Organism Only)	DEQ Table 33B WQC (Water+Organism)	DEQ Table 33B WQC (Organism Only)	
Copper	7440-50-8	1,300	-	1,300	-	-	-	1,300
Iron	7439-89-6	-	-	-	-	300	-	300
Manganese	7439-96-5	-	-	-	-	50	100	50
Nickel	7440-02-0	610	4,600	-	-	610	4,600	610
Selenium	7782-49-2	170	4,200	-	4,200	170	-	170
Thallium	7440-28-0	0.24	0.47	0.24	0.47	-	-	0.24
Zinc	7440-66-6	7,400	26,000	7,400	26,000	-	-	7,400

- = No benchmark available or available benchmark not needed, based on hierarchy of sources
Bio = bioaccumulation
DEQ = Oregon Department of Environmental Quality
USEPA = US Environmental Protection Agency
GW = groundwater
MCL = Maximum Contaminant Level
ug/L = microgram per liter
NRWQC = National Recommended Water Quality Criteria
PAH = polycyclic aromatic hydrocarbon
SLV = screening level value
SW = surface water
WQC = Water Quality Criteria

Notes

Only analytes with one or more candidate SLVs is shown on this table. For the full list of analytes, see Appendix K-1.
Groundwater Discharge to Surface Water and Bioaccumulation hierarchical SLV selection for groundwater and surface Wwater: 1. Min EPA AWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, and 3. Min DEQ WQC Table 33B.
Human Health Screening Levels correspond to a target risk of 1E-06 for carcinogens and target hazard quotient of 1.0 for non-carcinogens for the selected receptor and pathway. MCLs incorporate considerations of risk as well as feasibility in attaining target level.
Oregon Department of Environmental Quality (DEQ) 2009 . Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Tables 33A and 33B).
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.

Footnotes

[a] 1,2,4- Trichlorobenzene was used as a surrogate because there was no chemical specific SLV.
[b] 1,2- Dichloropropane was used as a surrogate because there was no chemical specific SLV.
[c] Acenaphthene was used as a surrogate because there was no chemical-specific SLV.
[d] Phenol was used as a surrogate because there was no chemical specific SLV.
[e] Total PCBs was used as a surrogate because there was no aroclor-specific SLV.
[f] Toxic Equivalency Factors for Benzo(g,h,i)perylene (0.01) was applied to the Benzo(a)pyrene SLV because there was no chemical specific SLV.
[g] BHC alpha was used as a surrogate, because there was no chemical-specific SLV, and BHC alpha was the lowest BHC.
[h] Bromodichloromethane was used as a surrogate because there was no chemical specific SLV.
[i] Chlordane was used as a surrogate.
[j] Bis(2-ethyl hexyl) phthalate was used as a surrogate because there was no chemical specific SLV, and Bis(2-ethyl hexyl) phthalate was the lowest of the pthalates.
[k] Endosulfan was used as a surrogate.
[l] Endrin was used as a surrogate because there was no chemical specific SLV.
[m] Anthracene was used as a surogate because there was no chemical specific SLV.

Table J-4c - Human Health Discharge to Surface Water Bioaccumulation Water SLVs
Bradford Island, Upland and River Operable Units
(5 of 5)

Analyte	CAS #	Candidate Human Health Water Screening Level Values for Discharge to Surface Water and Bioaccumulation (ug/L)						Selected Discharge/Bio SLVs (ug/L) (GW & SW)
		USEPA NRWQC (Water + Organism)	USEPA NRWQC (Organism Only)	DEQ Table 33A WQC (Water+ Organism)	DEQ Table 33A WQC (Organism Only)	DEQ Table 33B WQC (Water+Organism)	DEQ Table 33B WQC (Organism Only)	

[n] Benzo(k)fluoranthene was used as a surrogate because there was no chemical specific SLV.

[o] Benzo(b)fluoranthene was used as a surrogate because there was no chemical-specific SLV and benzo(b)fluoranthene had the lowest SLV of the benzofluoranthenes.

Table J-4d - Human Health Soil Gas SLVs for Indoor Worker
Bradford Island, Upland Operable Unit
(1 of 2)

Analyte	CAS #	Candidate Soil Gas Screening Level Values (ug/m3)		Selected Soil Gas SLVs (ug/m3)
		DEQ Vapor Intru Occup RBC	Adjusted USEPA Industrial Air RSL[a]	
1,1,1-Trichloroethane (TCA)	71-55-6	22,000,000	22,000,000	22,000,000
1,1,2,2-Tetrachloroethane	79-34-5	-	210	210
1,1,2-Trichloroethane	79-00-5	770	770	770
1,1-Dichloroethane	75-34-3	7,700	7,700	7,700
1,1-Dichloroethene	75-35-4	880,000	880,000	880,000
1,2,4-Trichlorobenzene	120-82-1	-	8,800	8,800
1,2,4-Trimethylbenzene	95-63-6	31,000	31,000	31,000
1,2-Dibromoethane (EDB)	106-93-4	20	20	20
1,2-Dichlorobenzene	95-50-1	880,000	880,000	880,000
1,2-Dichloroethane (EDC)	107-06-2	470	470	470
1,2-Dichloropropane	78-87-5	-	1,200	1,200
1,3,5-Trimethylbenzene	108-67-8	26,000	-	26,000
1,3-Butadiene	106-99-0	-	410	410
1,3-Dichlorobenzene	541-73-1	-	-	1,100 [b]
1,4-Dichlorobenzene	106-46-7	1,100	1,100	1,100
1,4-Dioxane	123-91-1	-	1,600	1,600
2,2,4-Trimethylpentane	540-84-1	-	-	31,000 [g]
2-Butanone (MEK)	78-93-3	-	22,000,000	22,000,000
2-Hexanone	591-78-6	-	130,000	130,000
2-Propanol	67-63-0	-	31,000,000	31,000,000
3-Chloropropene	107-05-1	-	2,000	2,000
4-Ethyltoluene	622-96-8	-	-	22,000,000 [h]
4-Methyl-2-pentanone (MIBK)	108-10-1	-	13,000,000	13,000,000
Acetone	67-64-1	-	140,000,000	140,000,000
alpha-Chlorotoluene	100-44-7	-	250	250
Benzene	71-43-2	1,600	1,600	1,600
Bromodichloromethane	75-27-4	330	330	330
Bromoform	75-25-2	-	11,000	11,000
Bromomethane	74-83-9	22,000	22,000	22,000
Carbon Disulfide	75-15-0	-	3,100,000	3,100,000
Carbon Tetrachloride	56-23-5	820	820	820
Chlorobenzene	108-90-7	220,000	220,000	220,000
Chloroethane	75-00-3	44,000,000	44,000,000	44,000,000
Chloroform	67-66-3	530	530	530
Chloromethane	74-87-3	390,000	390,000	390,000
cis-1,2-Dichloroethene	156-59-2	-	-	260,000 [c]
cis-1,3-Dichloropropene	10061-01-5	-	3,100	3,100 [d]
Cyclohexane	110-82-7	-	26,000,000	26,000,000
Dibromochloromethane	124-48-1	-	450	450.0
Dichlorodifluoromethane	75-71-8	-	880,000	880,000
Dichloromethane (Methylene Chloride)	75-09-2	26,000	26,000	26,000
Ethylbenzene	100-41-4	4,900	4,900	4,900
Freon 113	76-13-1	-	130,000,000	130,000,000
Freon 114	76-14-2	-	-	130,000,000 [e]
Heptane	142-82-5	-	-	3,100,000 [i]
Hexachlorobutadiene	87-68-3	-	560	560
Hexane	110-54-3	-	3,100,000	3,100,000
Isopropylbenzene	98-82-8	1,800,000	1,800,000	1,800,000
m,p-Xylenes	179601-23-1	440,000	440,000	440,000 [f]
Methyl tert-butyl ether	1634-04-4	47,000	47,000	47,000
n-Propylbenzene	103-65-1	-	4,400,000	4,400,000
o-Xylene	95-47-6	-	3,100,000	3,100,000
Styrene	100-42-5	4,400,000	4,400,000	4,400,000
Tetrachloroethene (PCE)	127-18-4	2,100	2,100	2,100
Toluene	108-88-3	22,000,000	22,000,000	22,000,000
trans-1,2-Dichloroethene	156-60-5	260,000	260,000	260,000
trans-1,3-Dichloropropene	10061-02-6	-	3,100	3,100 [d]
Trichloroethene (TCE)	79-01-6	140	6,100	140
Trichlorofluoromethane	75-69-4	3,100,000	3,100,000	3,100,000
Vinyl Chloride	75-01-4	2,800	2,800	2,800

- = No benchmark available
DEQ = Oregon Department of Environmental Quality
USEPA = US Environmental Protection Agency
RBC = Risk Based Concentrations
RSL = regional screening level
ug/m3 = microgram per cubic meter

Notes
Only analytes with one or more candidate SLVs is shown on this table. For the full list of analytes, see Appendix K-1.
Indoor Worker hierarchical SLV selection for Soil Gas: 1. DEQ Vapor Intrusion Occupational RBC, 2. Adjusted USEPA Industrial Air RSL

Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Level. May.

Table J-4d - Human Health Soil Gas SLVs for Indoor Worker
Bradford Island, Upland Operable Unit
(2 of 2)

Analyte	CAS #	Candidate Soil Gas Screening Level Values (ug/m3)		Selected Soil Gas SLVs (ug/m3)
		DEQ Vapor Intru Occup RBC	Adjusted USEPA Industrial Air RSL[a]	

Footnotes

[a] Industrial Air RSL was multipled by a factor of 1000.

[b] 1,4-Dichlorobenzene was used as a surrogate.

[c] trans-1,2-Dichloroethene was used as a surrogate.

[d] Dichloropropene, 1,3- was used as a surrogate.

[e] Freon 113 was used as a surrogate.

[f] Xylene (mixed) was used as a surrogate.

[g] 1,2,4-trimethylbenzene was used as a surrogate.

[h] Hexane was used as a surrogate.

[i] Toluene was used as a surrogate.

Table J-4e - Human Health Sediment SLVs
Bradford Island, Upland and River Operable Unit
(1 of 2)

Analyte	CAS #	Candidate Sediment Screening levels (mg/kg)		Selected Mass Wasting SLVs (mg/kg)	Selected Subsistence Fisher SLVs (mg/kg)	Selected Recreational Fisher SLVs (mg/kg)	Site-Specific Reference UPL[a]
		DEQ SLVs Humans					
		General	Subsistence				
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	0.000052	0.0000064	0.0000064	0.0000064	0.000052	0.002
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	0.000017	0.0000021	0.0000021	0.0000021	0.000017	1.43E-04
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	0.00017	0.000021	0.000021	0.000021	0.00017	0.018
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	0.00017	0.000021	0.000021	0.000021	0.00017	0.002
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	0.00012	0.000026	0.000026	0.000026	0.00012	0.055
2,3',4,4',5'-Pentachlorobiphenyl	65510-44-3	0.00021	0.000026	0.000026	0.000026	0.00021	0.001
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	0.00000005	6.2E-09	6.2E-09	6.2E-09	0.00000005	3.37E-04
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	0.00021	0.000026	0.000026	0.000026	0.00021	0.006
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	0.00021	0.000026	0.000026	0.000026	0.00021	-
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	0.00021	0.000026	0.000026	0.000026	0.00021	0.004
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	0.00021	0.000000021	0.000000021	0.000000021	0.00021	2.00E-04
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	0.0012	0.00014	0.00014	0.00014	0.0012	0.001
2,3,7,8-TCDD (TEQ)	-	9.1E-09	1.1E-09	1.1E-09	1.1E-09	9.1E-09	
4,4'-DDD	72-54-8	0.00033	4.00E-05	0.00004 [b]	0.00004 [b]	0.00033 [b]	-
4,4'-DDE	72-55-9	0.00033	4.00E-05	0.00004 [b]	0.00004 [b]	0.00033 [b]	-
4,4'-DDT	50-29-3	0.00033	4.00E-05	0.00004 [b]	0.00004 [b]	0.00033 [b]	-
Acenaphthene	83-32-9	-	-	62 [c]	62 [c]	510 [c]	-
Acenaphthylene	208-96-8	-	-	62 [c]	62 [c]	510 [c]	-
Aluminum	7429-90-5	-	-	-	-	-	38,000
Anthracene	120-12-7	-	-	62 [c]	62 [c]	510 [c]	2.30
Antimony	7440-36-0	-	-	-	-	-	0.427
Aroclor 1016	12674-11-2	-	-	0.000048 [d]	0.000048 [d]	0.00039 [d]	13.0
Aroclor 1221	11104-28-2	-	-	0.000048 [d]	0.000048 [d]	0.00039 [d]	11.0
Aroclor 1232	11141-16-5	-	-	0.000048 [d]	0.000048 [d]	0.00039 [d]	12.0
Aroclor 1242	53469-21-9	-	-	0.000048 [d]	0.000048 [d]	0.00039 [d]	16.0
Aroclor 1248	12672-29-6	-	-	0.000048 [d]	0.000048 [d]	0.00039 [d]	1.80
Aroclor 1254	11097-69-1	-	-	0.000048 [d]	0.000048 [d]	0.00039 [d]	1.80
Aroclor 1260	11096-82-5	-	-	0.000048 [d]	0.000048 [d]	0.00039 [d]	1.80
Aroclor 1262	37324-23-5	-	-	0.000048 [d]	0.000048 [d]	0.00039 [d]	1.80
Aroclor 1268	11100-14-4	-	-	0.000048 [d]	0.000048 [d]	0.00039 [d]	1.80
Arsenic	7440-38-2	-	-	-	-	-	5.86
Barium	7440-39-3	-	-	-	-	-	315
Benzo(a)anthracene	56-55-3	-	-	47 [e]	47 [e]	380 [e]	10.0
Benzo(a)pyrene	50-32-8	-	-	47 [e]	47 [e]	380 [e]	11.0
Benzo(b)fluoranthene	205-99-2	-	-	47 [e]	47 [e]	380 [e]	17.0
Benzo(g,h,i)perylene	191-24-2	-	-	47 [e]	47 [e]	380 [e]	7.90
Benzo(k)fluoranthene	207-08-9	-	-	47 [e]	47 [e]	380 [e]	5.00
Benzofluoranthenes, Total	56832-73-6	-	-	47 [e]	47 [e]	380 [e]	-
Beryllium	7440-41-7	-	-	-	-	-	0.847
BHC (alpha)	319-84-6	-	-	0.0023 [g]	0.0023 [g]	0.019 [g]	-
BHC (beta)	319-85-7	-	-	0.0023 [g]	0.0023 [g]	0.019 [g]	-
BHC (delta)	319-86-8	-	-	0.0023 [g]	0.0023 [g]	0.019 [g]	-
BHC (gamma) Lindane	58-89-9	-	-	0.0023 [g]	0.0023 [g]	0.019 [g]	-
Bis(2-ethylhexyl) Phthalate	117-81-7	-	-	-	-	-	110
Butyl Benzyl Phthalate	85-68-7	-	-	-	-	-	3.80
Cadmium	7440-43-9	-	-	-	-	-	0.674
Carbazole	86-74-8	-	-	-	-	-	1.40
Chlordane (alpha)	5103-71-9	-	-	0.000046 [f]	0.000046 [f]	0.00037 [f]	-
Chlordane (gamma)	5103-74-2	-	-	0.000046 [f]	0.000046 [f]	0.00037 [f]	-
Chlordane (technical)	12789-03-6	0.00037	0.000046	0.000046	0.000046	0.00037	-
Chromium	7440-47-3	-	-	-	-	-	28.0
Chrysene	218-01-9	-	-	47 [e]	47 [e]	380 [e]	9.80
Cobalt	7440-48-4	-	-	-	-	-	15.2
Copper	7440-50-8	-	-	-	-	-	55.6
Dibenz(a,h)anthracene	53-70-3	-	-	47 [e]	47 [e]	380 [e]	2.30
Dieldrin	60-57-1	8.10E-06	0.000001	0.000001	0.000001	0.0000081	-
Diesel Range Organics	68334-30-5	-	-	-	-	-	31.7
Di-n-butyl Phthalate	84-74-2	-	-	-	-	-	11.0
Di-n-octyl Phthalate	117-84-0	-	-	-	-	-	1.30
Endosulfan I	959-98-8	-	-	0.000001 [h]	0.000001 [h]	0.0000081 [h]	-
Endosulfan II	33213-65-9	-	-	0.000001 [h]	0.000001 [h]	0.0000081 [h]	-
Endosulfan Sulfate	1031-07-8	-	-	0.000001 [h]	0.000001 [h]	0.0000081 [h]	-
Fluoranthene	206-44-0	510	62	62	62	510	31.0
Fluorene	86-73-7	-	-	62 [c]	62 [c]	510 [c]	1.80
Heptachlor	76-44-8	-	-	0.000001 [h]	0.000001 [h]	0.0000081 [h]	-
Hexachlorobenzene	118-74-1	0.019	0.0023	0.0023	0.0023	0.019	-
Indeno(1,2,3-cd)pyrene	193-39-5	-	-	47 [e]	47 [e]	380 [e]	8.80
Lead	7439-92-1	-	-	-	-	-	14.5
Mercury	7439-97-6	-	-	-	-	-	0.214
Naphthalene	91-20-3	-	-	62 [c]	62 [c]	510 [c]	-
Nickel	7440-02-0	-	-	-	-	-	21.2
Pentachlorophenol	87-86-5	0.25	0.03	0.03	0.03	0.25	-
Phenanthrene	85-01-8	-	-	62 [c]	62 [c]	510 [c]	5.90
Total Polychlorinated biphenyl (PCB)	1336-36-3	0.00039	0.000048	0.000048	0.000048	0.00039	-
Pyrene	129-00-0	380	47	47	47	380	12.7
Thallium	7440-28-0	-	-	-	-	-	0.354
Tributyltin	688-73-3	0.085	0.01	0.01	0.01	0.085	-
Vanadium	7440-62-2	-	-	-	-	-	70.6
Zinc	7440-66-6	-	-	-	-	-	106

- = No benchmark available
DEQ = Oregon Department of Environmental Quality
mg/kg = milligram per kilogram
SLV = screening level value
UPL = Upper Prediction Limit

Table J-4e - Human Health Sediment SLVs
Bradford Island, Upland and River Operable Unit
(2 of 2)

Analyte	CAS #	Candidate Sediment Screening levels (mg/kg)		Selected Mass Wasting SLVs (mg/kg)	Selected Subsistence Fisher SLVs (mg/kg)	Selected Recreational Fisher SLVs (mg/kg)	Site-Specific Reference UPL[a]
		DEQ SLVs Humans					
		General	Subsistence				

Notes

Only analytes with one or more candidate SLVs is shown on this table. For the full list of analytes, see Appendix K-1.

Mass Wasting hierarchical SLVs for sediment: 1. Minimum of DEQ HH Bioaccumulative SLVs.

Subsistence Fisher hierarchical SLVs for sediment: 1. Subsistence DEQ Bioaccumulative SLVs.

Recreational Fisher hierarchical SLVs for sediment: 1. General DEQ Bioaccumulative SLVs.

Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31

Footnotes

[a] Site-Specific Reference UPLs are based are not based on toxicity values.

[b] DDT (Total) was used as a surrogate because there was no chemical specific SLVs.

[c] Fluoranthene was used as a surrogate because there was no chemical specific SLV and fluoranthene had the lowest SLV of the low Molecular Weight PAHs.

[d] Total Aroclors was used as a surrogate because there was no individual aroclor chemical specific SLV.

[e] Pyrene was used as a surrogate because there was no chemical specific SLV and pyrene had the lowest SLV of the High Molecular Weight PAHs.

[f] Chlordane (technical) was used as a surrogate because there was no chemical specific SLV and chlordane (technical) was the lowest of the chlordanes.

[g] Hexachlorobenzene was used as a surrogate because there was no chemical specific SLV.

[h] Dieldrin was used as a surrogate because there was no chemical specific SLV.

Table J-4f - Human Health Tissue SLVs
Bradford Island, River Operable Unit
(1 of 1)

Analyte	CAS #	Candidate Sediment Screening levels (mg/kg wet wt.)				Selected Tissue SLV (mg/kg wet wt)	
		Humans Subsistence/Tribal		Humans General/Recreational		Subsistence Fisher	Recreational Fisher
		Carcinogens	Non-carcinogens	Carcinogens	Non-carcinogens		
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	0.000076	-	0.00062	-	0.000076	0.00062
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	0.000025	-	0.00021	-	0.000025	0.00021
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	0.00025	-	0.0021	-	0.00025	0.0021
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	0.00025	-	0.0021	-	0.00025	0.0021
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	0.00025	-	0.0021	-	0.00025	0.0021
2,3',4,4',5'-Pentachlorobiphenyl	65510-44-3	0.00025	-	0.0021	-	0.00025	0.0021
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	0.000000076	-	0.00000062	-	0.000000076	0.00000062
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	0.00025	-	0.0021	-	0.00025	0.0021
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	0.00025	-	0.0021	-	0.00025	0.0021
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	0.00025	-	0.0021	-	0.00025	0.0021
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	0.00000025	-	0.0000021	-	0.00000025	0.0000021
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	0.00025	-	0.0021	-	0.00025	0.0021
2,3,7,8-TCDD (TEQ)	-	7.60E-09	-	6.20E-08	-	7.60E-09	6.20E-08
Acenaphthene	83-32-9	-	-	-	-	15 [b]	120 [b]
Acenaphthylene	208-96-8	-	-	-	-	15 [b]	120 [b]
Anthracene	120-12-7	-	-	-	-	15 [b]	120 [b]
Aroclor 1016	12674-11-2	-	-	-	-	0.00057 [a]	0.0047 [a]
Aroclor 1221	11104-28-2	-	-	-	-	0.00057 [a]	0.0047 [a]
Aroclor 1232	11141-16-5	-	-	-	-	0.00057 [a]	0.0047 [a]
Aroclor 1242	53469-21-9	-	-	-	-	0.00057 [a]	0.0047 [a]
Aroclor 1248	12672-29-6	-	-	-	-	0.00057 [a]	0.0047 [a]
Aroclor 1254	11097-69-1	-	-	-	-	0.00057 [a]	0.0047 [a]
Aroclor 1260	11096-82-5	-	-	-	-	0.00057 [a]	0.0047 [a]
Aroclor 1262	37324-23-5	-	-	-	-	0.00057 [a]	0.0047 [a]
Aroclor 1268	11100-14-4	-	-	-	-	0.00057 [a]	0.0047 [a]
Arsenic	7440-38-2	0.00076	0.15	0.0062	1.2	0.00076	0.0062
Benzo(a)anthracene	56-55-3	-	-	-	-	0.00157 [c]	0.0128 [c]
Benzo(a)pyrene	50-32-8	-	-	-	-	0.000157 [c]	0.00128 [c]
Benzo(b)fluoranthene	205-99-2	-	-	-	-	0.00157 [c]	0.0128 [c]
Benzo(g,h,i)perylene	191-24-2	-	-	-	-	0.0157 [c]	0.128 [c]
Benzo(k)fluoranthene	207-08-9	-	-	-	-	0.0157 [c]	0.128 [c]
Bis(2-ethylhexyl) Phthalate	117-81-7	-	-	-	-	0.0819 [c]	0.667 [c]
Butyl Benzyl Phthalate	85-68-7	-	-	-	-	0.604 [c]	4.91 [c]
Cadmium	7440-43-9	-	0.49	-	4	0.49	4
Chrysene	218-01-9	-	-	-	-	0.157 [c]	1.28 [c]
Dibenz(a,h)anthracene	53-70-3	-	-	-	-	0.000157 [c]	0.00128 [c]
Di-n-butyl Phthalate	84-74-2	-	-	-	-	49.2 [c]	400 [c]
Di-n-octyl Phthalate	117-84-0	-	-	-	-	49.2 [c]	400 [c]
Fluoranthene	206-44-0	-	20	-	160	20	160
Fluorene	86-73-7	-	-	-	-	15 [b]	120 [b]
Indeno(1,2,3-cd)pyrene	193-39-5	-	-	-	-	0.00157 [c]	0.0128 [c]
Lead	7439-92-1	-	0.5	-	0.5	0.5	0.5
Mercury	7439-97-6	-	0.049	-	0.4	0.049	0.4
Phenanthrene	85-01-8	-	-	-	-	15 [b]	120 [b]
Pyrene	129-00-0	-	15	-	120	15	120
Selenium	7782-49-2	-	2.5	-	20	2.5	20
Total Polychlorinated biphenyl (PCB)	1336-36-3	0.00057	0.0098	0.0047	0.08	0.00057	0.0047

- = No benchmark available
ATL = Acceptable tissue level
DEQ = Oregon Department of Environmental Quality
mg/kg = milligram per kilogram
SLV = screening level value

Notes
Only analytes with one or more candidate SLVs is shown on this table. For the full list of analytes, see Appendix K-1.
Subsistence Fisher heirarchical SLV selection for tissue: 1. Min DEQ Subsistence/Tribal Carcinogen ATL and DEQ Subsistence/Tribal Non-Carcinogen ATL.
Recreational Fisher heirarchical SLV selection for tissue: 1. Min DEQ General/Recreational Carcinogen ATL and DEQ General/Recreational Non-Carcinogen ATL.
Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31

Footnotes
[a] Total Aroclors was used as a surrogate because there was no individual aroclor chemical specific SLV.
[b] The SLV for pyrene was selected as a surrogate because there was no chemical-specific SLV.
[c] The ATLs were developed based on the procedures outlined in DEQ 2007; see Appendix L-2.

Table J-5a - Ecological Soil SLVs by Receptor
Bradford Island, Upland Operable Unit
(1 of 4)

Analyte	CAS #	Candidate Ecological Soil Screening Level Values (mg/kg)																											
		Plants							Invertebrates							Birds						Mammals						
		USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Plant ORNL[an]	USEPA TRVs[aq]	Heirarchical SLV[ar] with Surrogates		Site-Specific Reference UPL	Selected Plant SLV	USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Inverte-brate ORNL[ao]	USEPA TRVs[aq]	Heirarchical SLV[ar] with Surrogates		Site-Specific Reference UPL	Selected Invert SLV	USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Avian ORNL PRG[ap]	Heirarchical SLV[ar] with Surrogates		Site-Specific Reference UPL	Selected Avian SLV	USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Mammal ORNL PRG[ap]	Heirarchical SLV[ar] with Surrogates		Site-Specific Reference UPL	Selected Mammalian SLV
1,1,1-Trichloroethane (TCA)	71-55-6	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	55550	-	55550		-	55550
1,1-Dichloroethane	75-34-3	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	70	n	-	70	-	-	-	-	2780	n	-	2780
1,1-Dichloroethene	75-35-4	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-		-	-	-	-	3750	-	3750		-	3750
1,2,3-Trichlorobenzene	87-61-6	-	-	-	-	-		-	-	-	20	20	-	20		-	20	-	-	-	-	-	-	-	-	-	-		-	-
1,2,4-Trichlorobenzene	120-82-1	-	-	-	-	-		-	-	-	20	20	-	20		-	20	-	-	-	-	-	-	-	-	-	-		-	-
1,2,4-Trimethylbenzene	95-63-6	-	-	-	-	200	c	-	200	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	1440	c	-	1440
1,2-Dichlorobenzene	95-50-1	-	-	-	-	-		-	-	-	-	-	-	2.26	m	-	2.26	-	-	-	-	-	-	-	-	-	-		-	-
1,2-Dichloroethane (EDC)	107-06-2	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	70	-	70	-	-	70	-	2780	-	2780		-	2780
1,2-Dichloropropane	78-87-5	-	-	-	-	-		-	-	-	700	700	-	700		-	700	-	-	-	-	-	-	-	-	-	-		-	-
1,3,5-Trimethylbenzene	108-67-8	-	-	-	-	200	c	-	200	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	1440	c	-	1440
1,3-Dichlorobenzene	541-73-1	-	-	-	-	-		-	-	-	-	-	2.26	2.26		-	2.26	-	-	-	-	-	-	-	-	-	-		-	-
1,4-Dichlorobenzene	106-46-7	-	-	-	-	-		-	-	-	20	20	-	20		-	20	-	-	-	-	-	-	-	-	-	-		-	-
2,4,5-T	93-76-5	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	0.093	o	-	0.093	-	-	0.021	o	-	0.021
2,4,5-TP (Silvex)	93-72-1	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	0.093	o	-	0.093	-	-	0.021	o	-	0.021
2,4,5-Trichlorophenol	95-95-4	-	4	4	-	4		-	4	-	9	9	-	9		-	9	-	-	-	-	-	-	-	-	-	-		-	-
2,4,6-Trichlorophenol	88-06-2	-	10	-	-	10		-	10	-	10	10	-	10		-	10	-	-	-	-	-	-	-	-	-	-		-	-
2,4-D	94-75-7	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	0.093	o	-	0.093	-	-	0.021	o	-	0.021
2,4-DB	94-82-6	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	0.093	o	-	0.093	-	-	0.021	o	-	0.021
2,4-Dichlorophenol	120-83-2	-	20	-	-	20		-	20	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-		-	-
2,4-Dimethylphenol	105-67-9	-	20	-	-	20		-	20	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-		-	-
2,4-Dinitrophenol	51-28-5	-	20	20	-	20		-	20	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-		-	-
2-Butanone (MEK)	78-93-3	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	200000	-	200000		-	200000
2-Chlorophenol	95-57-8	-	60	-	-	60		-	60	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-		-	-
2-Hexanone	591-78-6	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	1250	e	-	1250
2-Methylnaphthalene	91-57-6	-	-	-	-	-		-	-	***	-	-	-	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
2-Methylphenol	95-48-7	-	50	-	-	50		-	50	-	-	-	-	-		-	-	-	-	-	-		-	-	-	16000	-	16000		-	16000
3-Nitroaniline	99-09-2	-	70	-	-	70		-	70	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-
4,4'-DDD	72-54-8	-	-	-	-	-		-	-	-	-	-	-	-		-	-	0.093	0.01	-	0.093		-	0.093	0.021	100	-	0.021		-	0.021
4,4'-DDE	72-55-9	-	-	-	-	-		-	-	-	-	-	-	-		-	-	0.093	0.01	-	0.093		-	0.093	0.021	100	-	0.021		-	0.021
4,4'-DDT	50-29-3	-	-	-	-	-		-	-	-	-	-	-	-		-	-	0.093	0.01	-	0.093		-	0.093	0.021	100	-	0.021		-	0.021
4-Chloroaniline	106-47-8	-	40	-	-	40		-	40	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-
4-Isopropyltoluene	99-87-6	-	-	-	-	200	c	-	200	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-
4-Methyl-2-pentanone (MIBK)	108-10-1	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	1250	e	-	1250
4-Nitroaniline	100-01-6	-	40	-	-	40		-	40	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-
4-Nitrophenol	100-02-7	-	10	-	-	10		-	10	-	7	7	-	7		-	7	-	-	-	-		-	-	-	-	-	-		-	-
Acenaphthene	83-32-9	-	20	20	-	20		-	20	***	-	-	-	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Acenaphthylene	208-96-8	-	-	-	-	-		-	-	***	-	-	-	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Acetone	67-64-1	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	1250	-	1250		-	1250
Aldrin	309-00-2	-	-	-	-	-		-	-	-	-	-	-	-		-	-	0.022	-	-	0.022		-	0.022	0.0049	25	-	0.0049		-	0.0049
Aluminum	7429-90-5	*	50	50	5	50		31400	31400	-	600	-	-	600		31400	31400	-	450	-	450		31400	31400	-	107	-	107		31400	31400
Aniline	62-53-3	-	200	-	-	200		-	200	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-
Anthracene	120-12-7	-	-	-	-	-		-	-	***	-	-	-	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Antimony	7440-36-0	-	5	5	0.5	5		0.176	5	78	-	-	-	78		0.176	78	-	-	-	-		0.176	0.176	0.27	15	-	0.27		0.176	0.27
Aroclor 1016	12674-11-2	-	-	-	-	40	f	-	40	-	-	-	2.51	2.51		-	2.51	-	-	-	0.655	h	-	0.655	-	100	-	0.371	h	-	0.371
Aroclor 1221	11104-28-2	-	-	-	-	40	f	-	40	-	-	-	-	2.51	g	-	2.51	-	-	-	0.655	h	-	0.655	-	-	-	0.371	h	-	0.371
Aroclor 1232	11141-16-5	-	-	-	-	40	f	-	40	-	-	-	-	2.51	g	-	2.51	-	-	-	0.655	h	-	0.655	-	-	-	0.371	h	-	0.371
Aroclor 1242	53469-21-9	-	-	-	-	40	f	-	40	-	-	-	-	2.51	g	-	2.51	-	1.5	-	0.655	h	-	0.655	-	5	-	0.371	h	-	0.371
Aroclor 1248	12672-29-6	-	-	-	-	40	f	-	40	-	-	-	-	2.51	g	-	2.51	-	-	-	0.655	h	-	0.655	-	-	-	0.371	h	-	0.371
Aroclor 1254	11097-69-1	-	-	40	10	40		-	40	-	-	-	2.51	2.51		-	2.51	-	0.7	-	0.655	h	-	0.655	-	4	-	0.371	h	-	0.371
Aroclor 1260	11096-82-5	-	-	-	-	40	f	-	40	-	-	-	-	2.51	g	-	2.51	-	-	-	0.655	h	-	0.655	-	-	-	0.371	h	-	0.371
Aroclor 1262	37324-23-5	-	-	-	-	40	f	-	40	-	-	-	-	2.51	g	-	2.51	-	-	-	0.655	h	-	0.655	-	-	-	0.371	h	-	0.371
Aroclor 1268	11100-14-4	-	-	-	-	40	f	-	40	-	-	-	-	2.51	g	-	2.51	-	-	-	0.655	h	-	0.655	-	-	-	0.371	h	-	0.371
Arsenic	7440-38-2	18	10	10	1	18		5.4	18	-	60	60	0.25	60		5.4	60	43	10	102	43		5.4	43	46	29	9.9	46		5.4	46
Barium	7440-39-3	-	500	500	5	500		169	500	330	3000	-	-	330		169	330	-	85	283	85		169	169	2000	638	329	2000		169	2000
Benzo(a)anthracene	56-55-3	-	-	-	1.2	1.2		-	1.2	***	-	-	25	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Benzene	71-43-2	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	3300	-	3300		-	3300
Benzo(a)pyrene	50-32-8	-	-	-	1.2	1.2		-	1.2	***	-	-	25	***		-	***	-	-	-	-		-	-	***	125	-	***		-	***
Benzo(b)fluoranthene	205-99-2	-	-	-	1.2	1.2		-	1.2	***	-	-	25	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Benzo(g,h,i)perylene	191-24-2	-	-	-	-	-		-	-	***	-	-	-	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Benzo(j,k)flouranthenes	205-82-3 & 207-08-9	-	-	-	-	-		-	-	***	-	-	-	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Benzo(k)fluoranthene	207-08-9	-	-	-	1.2	1.2		-	1.2	***	-	-	25	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Benzofluoranthenes, Total	56832-73-6	-	-	-	-	-		-	-	***	-	-	-	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Benzoic Acid	65-85-0	-	-	-	-	200	c	-	200	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	1440	c	-	1440
Benzyl Alcohol	100-51-6	-	-	-	-	-		-	-	-	-	-	-	2.26	m	-	2.26	-	-	-	-		-	-	-	-	-	-		-	-
Beryllium	7440-41-7	-	10	10	0.1	10		0.659	10	***	-	-	-	***		0.659	0.659	-	-	-	-		0.659	0.659	21	83	-	21		0.659	21
BHC (alpha)	319-84-6	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	8	i	-	8	-	-	-	1000	i	-	1000
BHC (beta)	319-85-7	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	8	i	-	8	-	-	-	1000	i	-	1000
BHC (delta)	319-86-8	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	8	i	-	8	-	-	-	1000	i	-	1000
BHC (gamma) Lindane	58-89-9	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	8	-	8		-	8	-	1000	-	1000		-	1000

Table J-5a - Ecological Soil SLVs by Receptor
Bradford Island, Upland Operable Unit
(2 of 4)

Analyte	CAS #	Candidate Ecological Soil Screening Level Values (mg/kg)																											
		Plants							Invertebrates							Birds						Mammals						
		USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Plant ORNL[an]	USEPA TRVs[aq]	Heirarchical SLV[ar] with Surrogates		Site-Specific Reference UPL	Selected Plant SLV	USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Inverte-brate ORNL[ao]	USEPA TRVs[aq]	Heirarchical SLV[ar] with Surrogates		Site-Specific Reference UPL	Selected Invert SLV	USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Avian ORNL PRG[ap]	Heirarchical SLV[ar] with Surrogates		Site-Specific Reference UPL	Selected Avian SLV	USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Mammal ORNL PRG[ap]	Heirarchical SLV[ar] with Surrogates		Site-Specific Reference UPL	Selected Mammalian SLV
Bis(2-chloroethoxy)methane	111-91-1	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-		-	-	-	-	-	-	730	p	-	730
Bis(2-ethylhexyl) Phthalate	117-81-7	-	-	-	-	-		-	-	-	-	-	-	-		-	-	4.5	-	4.5		-	4.5	-	1020	-	1020		-	1020
Bromochloromethane	74-97-5	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-	-	730	p	-	730
Bromodichloromethane	75-27-4	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-	-	730	p	-	730
Bromomethane	74-83-9	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-	-	730	p	-	730
Butyl Benzyl Phthalate	85-68-7	-	-	-	-	200	j	-	200	-	-	-	-	-		-	-	-	-	0.45	j	-	0.45	-	-	-	30000	j	-	30000
Cadmium	7440-43-9	32	4	4	0.2	32		0.271	32	140	20	20	10	140		0.271	140	0.77	6	4.2	0.77		0.271	0.77	0.36	125	6	0.36		0.271	0.36
Calcium	7440-70-2	-	-	-	-	-		10400	10400	-	-	-	-	-		10400	10400	-	-	-	-		10400	10400	-	-	-	-		10400	10400
Carbazole	86-74-8	-	-	-	-	-		-	-	-	-	-	-	2.26	m	-	2.26	-	-	-	-		-	-	-	-	-	-		-	-
Carbon Disulfide	75-15-0	-	-	-	-	-		-	-	-	-	-	-	1000	q	-	1000	-	-	-	-		-	-	-	-	-	2000	q	-	2000
Carbon Tetrachloride	56-23-5	-	-	-	-	-		-	-	-	1000	-	-	1000		-	1000	-	-	-	-		-	-	-	2000	-	2000		-	2000
Chlordane (alpha)	5103-71-9	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	9	-	9	k	-	9	-	250	-	250	k	-	250
Chlordane (gamma)	5103-74-2	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	9	-	9	k	-	9	-	250	-	250	k	-	250
Chlordane (technical)	12789-03-6	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	9	-	9	k	-	9	-	250	-	250	k	-	250
Chlorobenzene	108-90-7	-	-	-	-	-		-	-	-	40	40	-	40		-	40	-	-	-	-		-	-	-	-	-	-		-	-
Chloroform	67-66-3	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	1875	-	1875		-	1875
Chloromethane	74-87-3	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	730	p	-	730
Chromium	7440-47-3	-	-	1	0.018	1		28.1	28.1	-	-	0.4	-	0.4		28.1	28.1	26	-	16.1	26		28.1	28.1	34	410	110	34		28.1	34
Chrysene	218-01-9	-	-	-	1.2	1.2		-	1.2	***	-	-	25	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
cis-1,2-Dichloroethene	156-59-2	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	2500	-	2500		-	2500
Cobalt	7440-48-4	13	20	20	-	13		19.9	19.9	-	1000	-	-	1000		19.9	1000	120	-	-	120		19.9	120	230	150	-	230		19.9	230
Copper	7440-50-8	70	100	100	1	70		56.7	70	80	50	50	32	80		56.7	80	28	190	515	28		56.7	56.7	49	390	370	49		56.7	56.7
Dibenz(a,h)anthracene	53-70-3	-	-	-	1.2	1.2		-	1.2	***	-	-	25	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Dibenzofuran	132-64-9	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	0.002	-	0.002		-	0.002
Dibromochloromethane	124-48-1	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	730		-	730
Dibromomethane	74-95-3	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	730		-	730
Dibutyltin	1002-53-5	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	28	-	28	i	-	28	-	1300	-	1300	i	-	1300
Dichlorodifluoromethane	75-71-8	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	730		-	730
Dichloromethane (Methylene Chloride)	75-09-2	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	730	-	730		-	730
Dichlorprop	120-36-5	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	0.093	o	-	0.093	-	-	-	0.021	o	-	0.021
Dieldrin	60-57-1	-	-	-	-	-		-	-	-	-	-	-	-		-	-	0.022	0.3	-	0.022		-	0.022	0.0049	3	-	0.0049		-	0.0049
Diethyl Phthalate	84-66-2	-	100	100	-	100		-	100	-	-	-	-	-		-	-	-	-	-	-		-	-	-	250000	-	250000		-	250000
Dimethyl Phthalate	131-11-3	-	-	-	-	-		-	-	-	200	200	-	200		-	200	-	-	-	-		-	-	-	-	-	-		-	-
Di-n-butyl Phthalate	84-74-2	-	200	200	-	200		-	200	-	-	-	-	-		-	-	-	0.45	-	0.45		-	0.45	-	30000	-	30000		-	30000
Di-n-octyl Phthalate	117-84-0	-	-	-	-	200	j	-	200	-	-	-	-	-		-	-	-	-	-	0.45	j	-	0.45	-	-	-	30000	j	-	30000
Endosulfan I	959-98-8	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	42	-	42	a	-	42	-	20	-	20	a	-	20
Endosulfan II	33213-65-9	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	42	-	42	a	-	42	-	20	-	20	a	-	20
Endosulfan Sulfate	1031-07-8	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	42	-	42	a	-	42	-	20	-	20	a	-	20
Endrin	72-20-8	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	0.04	-	0.022	r	-	0.022	-	5	-	0.0049	r	-	0.0049
Endrin Aldehyde	7421-93-4	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	0.022	r	-	0.022	-	-	-	0.0049	r	-	0.0049
Endrin Ketone	53494-70-5	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	0.022	r	-	0.022	-	-	-	0.0049	r	-	0.0049
Ethylbenzene	100-41-4	-	-	-	-	-		-	-	-	-	-	-	2.26	m	-	2.26	-	-	-	-		-	-	-	-	-	-		-	-
Fluoranthene	206-44-0	-	-	-	-	-		-	-	***	-	-	-	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Fluorene	86-73-7	-	-	-	-	-		-	-	***	30	30	-	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Heptachlor	76-44-8	-	-	-	1	1		-	1	-	-	-	-	-		-	-	-	-	-	-		-	-	-	15	-	15		-	15
Heptachlor Epoxide	1024-57-3	-	-	-	-	1	d	-	1	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	15	d	-	15
Hexachlorobenzene	118-74-1	-	-	-	-	-		-	-	-	1000	-	-	1000		-	1000	-	-	-	-		-	-	-	-	-	-		-	-
Hexachlorocyclopentadiene	77-47-4	-	10	10	0.1	10		-	10	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-
Indeno(1,2,3-cd)pyrene	193-39-5	-	-	-	1.2	1.2		-	1.2	***	-	-	25	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***
Iron	7439-89-6	**	10	-	-	10		36900	36900	**	200	-	-	200		36900	36900	**	-	-	-		36900	36900	**	-	-	-		36900	36900
Isopropylbenzene	98-82-8	-	-	-	-	-		-	-	-	-	-	-	2.26	m	-	2.26	-	-	-	-		-	-	-	-	-	-		-	-
Lead	7439-92-1	120	50	50	4.6	120		25.5	120	1700	500	500	100	1700		25.5	1700	11	16	40.5	11		25.5	25.5	56	4000	740	56		25.5	56
m,p-Xylenes	179601-23-1	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	120	-	120	as	-	120	-	-	-	-		-	-
Magnesium	7439-95-4	-	-	-	-	-		12400	12400	-	-	-	-	-		12400	12400	-	-	-	-		12400	12400	-	-	-	-		12400	12400
Manganese	7439-96-5	220	500	500	-	220		885	885	450	100	-	-	450		885	885	4300	4125	-	4300		885	4300	4000	11000	-	4000		885	4000
MCPA	94-74-6	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	0.093	o	-	0.093	-	-	-	0.021	o	-	0.021
MCPP	93-65-2	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	0.093	o	-	0.093	-	-	-	0.021	o	-	0.021
Mercury	7439-97-6	-	0.3	0.3	-	0.3		0.066	0.3	-	0.1	0.1	2.5	0.1		0.066	0.1	-	1.5	0.00051	0.00051	s	0.066	0.066	-	73	0.146	0.146	s	0.066	0.146
Methoxychlor	72-43-5	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	500	-	500		-	500
Monobutyltin	78763-54-9	-	-	-	-	-		-	-	-	-	-	-	-		-	-	-	28	-	28	i	-	28	-	1300	-	1300	i	-	1300
Naphthalene	91-20-3	-	10	-	-	10		-	10	***	-	-	-	***		-	***	-	-	-	-		-	-	***	3900	-	***		-	***
Nickel	7440-02-0	38	30	30	25	38		26.5	38	280	200	200	100	280		26.5	280	210	320	121	210		26.5	210	130	625	246	130		26.5	130
Nitrobenzene	98-95-3	-	8	-	-	8		-	8	-	40	40	2.26	40		-	40	-	-	-	-		-	-	-	-	-	-		-	-
N-Nitrosodiphenylamine	86-30-6	-	-	-	-	-		-	-	-	20	20	-	20		-	20	-	-	-	-		-	-	-	-	-	-		-	-
n-Propylbenzene	103-65-1	-	-	-	-	-		-	-	-	-	-	-	2.26	m	-	2.26	-	-	-	-		-	-	-	-	-	-		-	-
o-Xylene	95-47-6	-	1	-	-	1		-	1	-	-	-	-	-		-	-	-	-	-	-		-	-	-	120	-	120	as	-	120
p-cresol (4-Methylphenol)	106-44-5	-	-	-	-	50	b	-	50	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	16000	b	-	16000
Pentachlorophenol	87-86-5	5	3	3	1.73	5		-	5	31	4	6	10	31		-	31	2.1	-	-	2.1		-	2.1	2.8	30	-	2.8		-	2.8
Phenanthrene	85-01-8	-	-	-	-	-		-	-	***	-	-	-	***		-	***	-	-	-	-		-	-	***	-	-	***		-	***

Table J-5a - Ecological Soil SLVs by Receptor
Bradford Island, Upland Operable Unit
(3 of 4)

Analyte	CAS #	Candidate Ecological Soil Screening Level Values (mg/kg)																										
		Plants							Invertebrates							Birds						Mammals						
		USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Plant ORNL[an]	USEPA TRVs[aq]	Heirarchical SLV[ar] with Surrogates	Site-Specific Reference UPL	Selected Plant SLV	USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Inverte-brate ORNL[ao]	USEPA TRVs[aq]	Heirarchical SLV[ar] with Surrogates	Site-Specific Reference UPL	Selected Invert SLV	USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Avian ORNL PRG[ap]	Heirarchical SLV[ar] with Surrogates	Site-Specific Reference UPL	Selected Avian SLV	USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Mammal ORNL PRG[ap]	Heirarchical SLV[ar] with Surrogates	Site-Specific Reference UPL	Selected Mammalian SLV
Phenol	108-95-2	-	70	70	-	70	-	70	-	30	30	-	30	-	30	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	7440-09-7	-	-	-	-	-	2050	2050	-	-	-	-	-	2050	2050	-	-	-	-	2050	2050	-	-	-	-	2050	2050
Pyrene	129-00-0	-	-	-	-	-	-	-	18	-	-	-	18	-	***	-	-	-	-	-	-	***	-	-	***	-	***
sec-Butylbenzene	135-98-8	-	-	-	-	-	-	-	-	-	-	-	2.26 [m]	-	2.26	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	7782-49-2	0.52	1	1	0.05	0.52	0.5	0.52	4.1	70	70	7.7	4.1	0.5	4.1	1.2	2	1E-06	1.2	0.5	1.2	0.63	25	0.000001	0.63	0.5	0.63
Silver	7440-22-4	560	2	2	0.02	560	0.187	560	-	50	-	-	50	0.187	50	4.2	-	-	4.2	0.187	4.2	14	-	-	14	0.187	14
Sodium	7440-23-5	-	-	-	-	-	341	341	-	-	-	-	-	341	341	-	-	-	-	341	341	-	-	-	-	341	341
Styrene	100-42-5	-	300	300	-	300	-	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tert-Butylbenzene	98-06-6	-	-	-	-	-	-	-	-	-	-	-	2.26 [m]	-	2.26	-	-	-	-	-	-	-	-	-	-	-	-
Tetrabutyltin	1461-25-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	28 [i]	-	28	-	1300	-	1300 [i]	-	1300
Tetrachloroethene (PCE)	127-18-4	-	10	-	-	10	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	80	-	80
Thallium	7440-28-0	-	1	1	0.01	1	0.203	1	-	-	-	-	-	0.203	0.203	-	-	-	-	0.203	0.203	-	1	2.1	1	0.203	1
Toluene	108-88-3	-	200	200	-	200	-	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1440	-	1440	-	1440
Total DDTs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.093	0.01	-	0.093	-	0.093	0.021	100	-	0.021	-	0.021
Total PCBs	1336-36-3	-	40	40	-	40	-	40	-	-	-	-	2.51 [g]	-	2.51	-	-	0.655	0.655	-	0.655	-	4	0.371	0.371 [h]	-	0.371
Total PAH		-	-	-	-	-	-	-	***	-	-	-	***	-	***	-	-	-	-	-	-	***	-	-	***	-	***
Total LPAH		-	-	-	-	-	-	-	29	-	-	-	29	-	29	-	-	-	-	-	-	100	-	-	100	-	100
Total HPAH		-	-	-	1.2	1.2	-	1.2	18	-	-	25	18	-	18	-	-	-	-	-	-	1.1	-	-	1.1	-	1.1
Toxaphene	8001-35-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1000	-	1000	-	1000
trans-1,2-Dichloroethene	156-60-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2500	-	2500	-	2500
Tributyltin	688-73-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	28 [i]	-	28	-	1300	-	1300 [i]	-	1300
Trichloroethene (TCE)	79-01-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	40	-	40
Trichlorofluoromethane	75-69-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	730 [p]	-	730
Vanadium	7440-62-2	-	2	2	-	2	104	104	-	-	-	-	-	104	104	7.8	47	-	7.8	104	104	280	25	55	280	104	280
Vinyl Chloride	75-01-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	20	-	20
Zinc	7440-66-6	160	50	50	0.9	160	71.7	160	120	200	200	199	120	71.7	120	46	60	8.5	46	71.7	71.7	79	20000	1600	79	71.7	79

Note
Only analytes with one or more candidate SLVs is shown on this table. For the full list of analytes, see Appendix J-1.
- = No benchmark available
DEQ = Oregon Department of Environmental Quality
Eco SSL = Ecological Soil Screening Level
USEPA = US Environmental Protection Agency
HPAH = High Molecular Weight PAH
HPAHs include : Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(j,k)flouranthenes, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, and Pyrene.
LPAH = Low Molecular Weight PAH
LPAHs include: 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, and Phenanthrene.
mg/kg = milligram per kilogram dry weight
ORNL = Oak Ridge National Laboratory
PAH = Polycyclic Aromatic Hydrocarbons
PRG = Preliminary Remediation Goal
SLV = Screening Level Value
TRV = Toxicity Reference Value
UPL = Upper Prediction Limit

* = Eco SSL is dependent on pH.
** = Eco SSL is a determination of the geochemical conditions (i.e., pH and Eh at a minimum) of the environmental setting, as well as the presence of iron floc and the toxic metals, is critical to the determination of the relative importance of iron at a site.
*** = PAH Eco SSLs are based on Total LMW PAHs (Invert. Eco SSL = 29 mg/kg and Mammal Eco SSL = 100 mg/kg) and Total HMW PAHs (Invert. Eco SSL = 18 mg/kg and Mammal Eco SSL = 1.1 mg/kg).

[a] Endosulfan was used as a surrogate because there was no chemical specific SLV.
[b] 2-Methylphenol was used as a surrogate because there was no chemical specific SLV.
[c] Toluene was used as a surrogate because there was no chemical specific SLV.
[d] Heptachlor was used as a surrogate because there was no chemical specific SLV.
[e] Acetone was used as a surrogate because there was no chemical specific SLV.
[f] Total PCBs was used as a surrogate because there was no chemical specific SLV.
[g] PCB 1254 was used as a surrogate because there was no chemical specific SLV.
[h] The lowest PRGs (mammal and birds) for Total PCBs was used as a surrogate because the SLV is based on bioaccumulation and is more conservative than the DEQ Level II individual aroclor SLVs and Total PCB SLV, which do not take into account bioaccumulation.
[i] BHC gamma was used as a surrogate, because there was no chemical-specific SLV, and BHC gamma was the lowest BHC.
[j] di-n-butyl Phthalate was used as a surrogate because there was no chemical specific SLV.
[k] Chlordane (CAS # 57-74-9) was used as a surrogate.
[l] Tributyltin oxide was used as a surrogate, because there was no chemical-specific SLV.
[m] 1,3- Dichlorobenzene was used as a surrogate because there was no chemical specific SLV, and it had the SLV lowest of the non-methylbenzenes.
[n] 1,2- Dichloroethane was used as a surrogate because there was no chemical specific SLV.
[o] DDT (and metabolites) was used as a surrogate because there was no chemical specific SLV, and DDT was the lowest of the herbicides/pesticides.
[p] Dichloromethane was used as a surrogate because there was no chemical specific SLV.
[q] Carbon tetrachloride was used as a surrogate because there was no chemical specific SLV.
[r] The lowest Eco SSLs (avian and mammalian) for Dieldrin were used as surrogates because the SLVs are based on bioaccumulation and are more conservative than the DEQ Level II Endrin SLV, which does not take into account bioaccumulation.
[s] The lowest PRGs (avian and mammalian) for Mercury were used as surrogates because the SLVs are based on bioaccumulation and are more conservative than the DEQ Level II Mercury SLV, which does not take into account bioaccumulation.

Table J-5a - Ecological Soil SLVs by Receptor
Bradford Island, Upland Operable Unit
(4 of 4)

Analyte	CAS #	Candidate Ecological Soil Screening Level Values (mg/kg)																									
		Plants							Invertebrates							Birds						Mammals					
		USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Plant ORNL[an]	USEPA TRVs[aq]	Heirarchical SLV[ar] with Surrogates	Site-Specific Reference UPL	Selected Plant SLV	USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Inverte-brate ORNL[ao]	USEPA TRVs[aq]	Heirarchical SLV[ar] with Surrogates	Site-Specific Reference UPL	Selected Invert SLV	USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Avian ORNL PRG[ap]	Heirarchical SLV[ar] with Surrogates	Site-Specific Reference UPL	Selected Avian SLV	USEPA Eco SSL[t-al]	DEQ Level II SLV[m]	Mammal ORNL PRG[ap]	Heirarchical SLV[ar] with Surrogates	Site-Specific Reference UPL	Selected Mammalian SLV

[t] USEPA 2005. Ecological Soil Screening Levels for Antimony. Interim Final. February. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-61.
[u] USEPA 2005. Ecological Soil Screening Levels for Arsenic. Interim Final. March. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-62.
[v] USEPA 2005. Ecological Soil Screening Levels for Barium. Interim Final. February. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7- 63.
[w] USEPA 2005. Ecological Soil Screening Levels for Beryllium. Interim Final. February. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7- 64.
[x] USEPA 2005. Ecological Soil Screening Levels for Cadmium. Interim Final. March. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-65.
[y] USEPA 2005. Ecological Soil Screening Levels for Chromium. Interim Final. March. Revised April 2008. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7- 66.
[z] USEPA 2005. Ecological Soil Screening Levels for Cobalt. Interim Final. March. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-67.
[aa] USEPA 2006. Ecological Soil Screening Levels for Copper. Interim Final. July. Revised February 2007. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-68.
[ab] USEPA 2005. Ecological Soil Screening Levels for Dieldrin. Interim Final. March. Revised April 2007. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-56.
[ac] USEPA 2007. Ecological Soil Screening Levels for DDT and Metabolites. April. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-57.
[ad] USEPA 2005. Ecological Soil Screening Levels for Lead. Interim Final. March. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-70.
[ae] USEPA 2007. Ecological Soil Screening Levels for Manganese Interim Final. April. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-71.
[af] USEPA 2007. Ecological Soil Screening Levels for Nickel. Interim Final. March. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-76.
[ag] USEPA 2007. Ecological Soil Screening Levels for Polycyclic Aromatic Hydrocarbons (PAHs). June. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-78.
[ah] USEPA 2005. Ecological Soil Screening Levels for Pentachlorophenol. Interim Final. March. Revised April 2007. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-58.
[ai] USEPA 2007. Ecological Soil Screening Levels for Selenium. Interim Final. July. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72.
[aj] USEPA 2006. Ecological Soil Screening Levels for Silver. Interim Final. September U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-77.
[ak] USEPA 2005. Ecological Soil Screening Levels for Vanadium. Interim Final. April. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-75.
[al] USEPA 2007. Ecological Soil Screening Levels for Zinc. Interim Final. June. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-73.
[am] DEQ 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001
[an] Efroymson RA, ME Wil, GW Suter II, and AC Wooten. 1997. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. November. ORNL. ES/ER/TM-85/R3.
[ao] Efroymson RA, ME Will, and GW Suter II. 1997. Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process:1997 Revision. November. ORNL. ES/ER/TM-126/R2.
[ap] Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.
[aq] USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.
[ar] **Ecological Hierarchical SLV Selection (unless otherwise noted): 1. USEPA Eco SSL, 2. DEQ Level II SLV, 3. ORNL, 4. USEPA TRV (Plants and Soil Invertebrates Only).**
[as] Xylene (mixed) was used as a surogate, because there was no chemical-specific SLV.

Table J-5b - Ecological Water SLVs
Bradford Island, Upland and River Operable Units
(1 of 5)

Analyte	CAS #	Canidate Ecological Water Screening Level Values (ug/L)							
		USEPA Freshwater NRWQC [k]	DEQ Freshwater Table 33A WQC[l]	Lowest DEQ Level II SLV[m]	ORNL Tier II Chronic Value[n]	USEPA PAH FCV[o]	Canadian WQG[p]	NOAA SQuiRTs Freshwater Chronic [q]	Selected Ecological Water SLV with Surrogates[r]
1,1,1,2-Tetrachloroethane	630-20-6	-	-	186	-	-	-	-	186
1,1,1-Trichloroethane (TCA)	71-55-6	-	-	11	11	-	-	11	11
1,1,2,2-Tetrachloroethane	79-34-5	-	-	2400	610	-	-	111	2400
1,1,2-Trichloroethane	79-00-5	-	-	9400	1200	-	-	500	9400
1,1-Dichloroethane	75-34-3	-	-	47	47	-	-	47	47
1,1-Dichloroethene	75-35-4	-	-	25	25	-	-	25	25
1,2,3-Trichlorobenzene	87-61-6	-	-	-	-	-	8.0	8	8
1,2,4-Trichlorobenzene	120-82-1	-	-	110	110	-	24	24	110
1,2,4-Trimethylbenzene	95-63-6	-	-	-	-	-	-	-	7.3 [e]
1,2-Dichlorobenzene	95-50-1	-	-	14	14	-	0.7	0.7	14
1,2-Dichloroethane (EDC)	107-06-2	-	-	20000	910	-	100	100	20000
1,2-Dichloropropane	78-87-5	-	-	5700	-	-	-	5700	5700
1,3,5-Trimethylbenzene	108-67-8	-	-	-	-	-	-	-	7.3 [e]
1,3-Dichlorobenzene	541-73-1	-	-	71	71	-	150	38	71
1,3-Dichloropropane	142-28-9	-	-	-	-	-	-	-	5700
1,4-Dichlorobenzene	106-46-7	-	-	15	15	-	26	9.4	15
2,2-Dichloropropane	594-20-7	-	-	-	-	-	-	-	5700 [c]
2,3,7,8-TCDD (TEQ)	-	-	-	0.0076	-	-	-	0.00001	0.0076
2,4,5-T	93-76-5	-	-	-	-	-	-	36	36
2,4,5-Trichlorophenol	95-95-4	-	-	-	-	-	18	63	18
2,4,6-Trichlorophenol	88-06-2	-	-	970	-	-	18	4.9	970
2,4-D	94-75-7	-	-	-	-	-	-	4	4
2,4-Dichlorophenol	120-83-2	-	-	3650	-	-	0.2	11	3650
2,4-Dimethylphenol	105-67-9	-	-	42	-	-	-	100	42
2,4-Dinitrophenol	51-28-5	-	-	-	-	-	-	19	19
2,4-Dinitrotoluene	121-14-2	-	-	230	-	-	-	44	230
2,6-Dinitrotoluene	606-20-2	-	-	230	-	-	-	-	230
2-Butanone (MEK)	78-93-3	-	-	14000	14000	-	-	14000	14000
2-Chloroethylvinylether	110-75-8	-	-	4760	-	-	-	-	4760
2-Chloronaphthalene	91-58-7	-	-	32	-	-	-	0.396	32
2-Chlorophenol	95-57-8	-	-	2000	-	-	7	24	2000
2-Hexanone	591-78-6	-	-	99	99	-	-	99	99
2-Methylnaphthalene	91-57-6	-	-	-	-	72.16	-	330	72.16
2-Methylphenol	95-48-7	-	-	13	13	-	-	13	13
3,3'-Dichlorobenzidine	91-94-1	-	-	-	-	-	-	4.5	4.5
4,4'-DDD	72-54-8	-	-	0.001	0.011	-	-	0.011	0.001
4,4'-DDE	72-55-9	-	-	20	-	-	-	105	0.001
4,4'-DDT	50-29-3	0.001	0.001	0.001	0.013	-	-	0.0005	0.001
4-Bromophenyl Phenyl Ether	101-55-3	-	-	1.5	1.5	-	-	-	1.5
4-Chloroaniline	106-47-8	-	-	-	-	-	-	50	50
4-Methyl-2-pentanone (MIBK)	108-10-1	-	-	170	170	-	-	170	170
4-Nitrophenol	100-02-7	-	-	150	300	-	-	60	150
Acenaphthene	83-32-9	-	-	520	-	55.85	5.8	5.8	55.85 [t]
Acenapthylene	208-96-8	-	-	-	-	306.9	-	4840	306.9
Acetone	67-64-1	-	-	1500	1500	-	-	1500	1500
Aldrin	309-00-2	-	-	0.06	-	-	-	0.017	0.06
Aniline	62-53-3	-	-	-	-	-	-	2.2	2.2

Table J-5b - Ecological Water SLVs
Bradford Island, Upland and River Operable Units
(2 of 5)

Analyte	CAS #	Canidate Ecological Water Screening Level Values (ug/L)							
		USEPA Freshwater NRWQC [k]	DEQ Freshwater Table 33A WQC[l]	Lowest DEQ Level II SLV[m]	ORNL Tier II Chronic Value[n]	USEPA PAH FCV[o]	Canadian WQG[p]	NOAA SQuiRTs Freshwater Chronic [q]	Selected Ecological Water SLV with Surrogates[r]
Anthracene	120-12-7	-	-	13	0.73	20.73	0.012	0.012	13
Aroclor 1016	12674-11-2	-	-	13000	-	-	-	-	0.014 [j]
Aroclor 1221	11104-28-2	-	-	0.28	0.28	-	-	-	0.014 [j]
Aroclor 1232	11141-16-5	-	-	0.58	0.58	-	-	-	0.014 [j]
Aroclor 1242	53469-21-9	-	-	0.053	0.053	-	-	-	0.014 [j]
Aroclor 1248	12672-29-6	-	-	0.081	0.081	-	-	-	0.014 [j]
Aroclor 1254	11097-69-1	-	-	0.033	0.033	-	-	-	0.014 [j]
Aroclor 1260	11096-82-5	-	-	94	94	-	-	-	0.014 [j]
Benzene	71-43-2	-	-	130	130	-	370	46	130
Benzidine	92-87-5	-	-	3.9	3.9	-	-	3.9	3.9
Benzo(a)anthracene	56-55-3	-	-	0.027	0.027	2.227	0.018	0.027	0.027
Benzo(a)pyrene	50-32-8	-	-	0.014	0.014	0.9573	0.015	0.014	0.014
Benzo(b)fluoranthene	205-99-2	-	-	-	-	0.6774	-	9.07	0.6774
Benzo(g,h,i)perylene	191-24-2	-	-	-	-	0.4391	-	7.64	0.4391
Benzo(j,k)flouranthenes	205-82-3 & 207-08-9	-	-	-	-	-	-	-	0.014 [a]
Benzo(k)fluoranthene	207-08-9	-	-	-	-	0.6415	-	-	0.6415
Benzofluoranthenes, Total	56832-73-6	-	-	-	-	-	-	-	0.014 [a]
Benzoic Acid	65-85-0	-	-	42	42	-	-	42	42
Benzyl Alcohol	100-51-6	-	-	8.6	8.6	-	-	8.6	8.6
BHC (alpha)	319-84-6	-	-	2.2	2.2	-	-	2.2	2.2
BHC (beta)	319-85-7	-	-	2.2	2.2	-	-	0.495	2.2
BHC (delta)	319-86-8	-	-	-	2.2	-	-	2.2	2.2
BHC (gamma) Lindane	58-89-9	-	0.08	0.08	-	-	0.01	0.08	0.08
Bis(2-chloroethyl) Ether	111-44-4	-	-	-	-	-	-	1900	1900
Bis(2-ethylhexyl) Phthalate	117-81-7	-	-	3	3.0	-	-	0.3	3
Bromoform	75-25-2	-	-	-	-	-	-	320	320
Bromomethane	74-83-9	-	-	-	-	-	-	16	16
Butyl Benzyl Phthalate	85-68-7	-	-	19	19	-	-	19	19
Carbon Disulfide	75-15-0	-	-	0.92	0.92	-	-	0.92	0.92
Carbon Tetrachloride	56-23-5	-	-	74	9.8	-	13.3	9.8	74
Chlordane (alpha)	5103-71-9	-	-	0.0043	-	-	-	-	0.0043 [g]
Chlordane (gamma)	5103-74-2	-	-	0.0043	-	-	-	-	0.0043 [g]
Chlordane (technical)	12789-03-6	-	-	0.0043	-	-	-	-	0.0043 [g]
Chlorobenzene	108-90-7	-	-	50	64	-	-	1.3	50
Chloroform	67-66-3	-	-	1240	28	-	1.8	1.8	1240
Chrysene	218-01-9	-	-	-	-	2.042	-	-	2.042
cis-1,2-Dichloroethene	156-59-2	-	-	590	-	-	-	590	590
cis-1,3-Dichloropropene	10061-01-5	-	-	-	-	-	-	<0.055	0.055
Dibenz(a,h)anthracene	53-70-3	-	-	-	-	0.2825	-	-	0.2825
Dibenzofuran	132-64-9	-	-	3.7	3.7	-	-	3.7	3.7
Dibutyltin	1002-53-5	-	-	-	-	-	-	-	0.063 [f]
Dicamba	1918-00-9	-	-	-	-	-	10	10	10
Dichloromethane (Methylene Chloride)	75-09-2	-	-	2200	2200	-	98.1	98.1	2200
Dichlorprop	120-36-5	-	-	-	-	-	-	-	4 [i]
Dieldrin	60-57-1	0.056	-	0.056	-	-	-	0.056	0.056
Diethyl Phthalate	84-66-2	-	-	210	210	-	-	110	210
Dimethyl Phthalate	131-11-3	-	-	3	-	-	-	3	3

Table J-5b - Ecological Water SLVs
Bradford Island, Upland and River Operable Units
(3 of 5)

Analyte	CAS #	Canidate Ecological Water Screening Level Values (ug/L)							
		USEPA Freshwater NRWQC [k]	DEQ Freshwater Table 33A WQC[l]	Lowest DEQ Level II SLV[m]	ORNL Tier II Chronic Value[n]	USEPA PAH FCV[o]	Canadian WQG[p]	NOAA SQuiRTs Freshwater Chronic [q]	Selected Ecological Water SLV with Surrogates[r]
Di-n-butyl Phthalate	84-74-2	-	-	35	35	-	19	9.7	35
Di-n-octyl Phthalate	117-84-0	-	-	708	-	-	-	3	708
Dinoseb	88-85-7	-	-	-	-	-	0.05	0.05	0.05
Endosulfan I	959-98-8	0.056	0.056	-	0.051	-	0.02	0.028	0.056
Endosulfan II	33213-65-9	0.056	0.056	-	0.051	-	0.02	0.028	0.056
Endosulfan Sulfate	1031-07-8	-	-	-	0.051	-	0.02	2.22	0.051
Endrin	72-20-8	0.036	-	0.036	-	-	-	0.036	0.036
Endrin Aldehyde	7421-93-4	-	-	-	-	-	-	0.15	0.15
Ethylbenzene	100-41-4	-	-	7.3	7.3	-	90	7.3	7.3
Fluoranthene	206-44-0	-	-	6.16	-	7.109	0.04	0.04	6.16
Fluorene	86-73-7	-	-	3.9	3.9	39.3	3	3.9	3.9
Heptachlor	76-44-8	0.0038	0.0038	0.0038	0.0069	-	-	0.0019	0.0038
Heptachlor Epoxide	1024-57-3	0.0038	0.0038	0.0038	-	-	-	0.0019	0.0038
Hexachlorobenzene	118-74-1	-	-	-	-	-	-	0.0003	0.0003
Hexachlorobutadiene	87-68-3	-	-	9.3	-	-	1.3	0.053	9.3
Hexachlorocyclopentadiene	77-47-4	-	-	5.2	-	-	-	5.2	5.2
Hexachloroethane	67-72-1	-	-	540	12	-	-	8	540
Indeno(1,2,3-cd)pyrene	193-39-5	-	-	-	-	0.275	-	4.31	0.275
Isophorone	78-59-1	-	-	2340	-	-	-	920	2340
Isopropylbenzene	98-82-8	-	-	-	-	-	-	-	7.3 [e]
m,p-Xylenes	179601-23-1	-	-	13	13	-	-	-	13 [b]
MCPA	94-74-6	-	-	-	-	-	2.6	2.6	2.6
Methoxychlor	72-43-5	-	0.03	0.03	0.019	-	-	0.03	0.03
Monobutyltin	78763-54-9	-	-	-	-	-	-	-	0.063 [f]
Naphthalene	91-20-3	-	-	620	12	193.5	1.1	1.1	193.5 [t]
Nitrobenzene	98-95-3	-	-	540	-	-	-	220	540
N-Nitrosodimethylamine	62-75-9	-	-	117	-	-	-	-	117
N-Nitrosodi-n-propylamine	621-64-7	-	-	117	-	-	-	-	117
N-Nitrosodiphenylamine	86-30-6	-	-	210	210	-	-	210	210
n-Propylbenzene	103-65-1	-	-	-	-	-	-	-	7.3 [e]
o-Xylene	95-47-6	-	-	-	-	-	-	350	350
p-cresol (4-Methylphenol)	106-44-5	-	-	-	-	-	-	-	13 [d]
Pentachlorophenol	87-86-5	15	-	15	-	-	0.5	15	15
Phenanthrene	85-01-8	-	-	6.3	-	19.13	0.4	3.6	6.3
Phenol	108-95-2	-	-	110	-	-	4	180	110
Pyrene	129-00-0	-	-	-	-	10.11	0.025	0.025	10.11
Styrene	100-42-5	-	-	-	-	-	72	32	72
Tetrabutyltin	1461-25-2	-	-	-	-	-	-	-	0.063 [f]
Tetrachloroethene (PCE)	127-18-4	-	-	840	98	-	111	45	840
Toluene	108-88-3	-	-	9.8	9.8	-	2	2	9.8
Total PCBs	1336-36-3	0.014	0.014	0.014	0.14	-	-	0.014	0.014
Toxaphene	8001-35-2	0.002	0.0002	0.0002	-	-	-	0.0002	0.002
trans-1,2-Dichloroethene	156-60-5	-	-	590	-	-	-	1160	590
trans-1,3-Dichloropropene	10061-02-6	-	-	-	-	-	-	<0.055	0.055
Tributyltin	688-73-3	-	-	0.063	-	-	0.008	-	0.063
Trichloroethylene (TCE)	79-01-6	-	-	3000	47	-	21	<21	3000
Vinyl Acetate	108-05-4	-	-	16	16	-	-	16	16

Table J-5b - Ecological Water SLVs
Bradford Island, Upland and River Operable Units
(4 of 5)

Analyte	CAS #	Canidate Ecological Water Screening Level Values (ug/L)							
		USEPA Freshwater NRWQC [k]	DEQ Freshwater Table 33A WQC[l]	Lowest DEQ Level II SLV[m]	ORNL Tier II Chronic Value[n]	USEPA PAH FCV[o]	Canadian WQG[p]	NOAA SQuiRTs Freshwater Chronic [q]	Selected Ecological Water SLV with Surrogates[r]
Vinyl Chloride	75-01-4	-	-	1300	-	-	-	930	1300
Chloride	16887-00-6	-	230000	-	-	-	-	-	230000
Cyanide (Hydrogen Cyanide)	74-90-8	5.2	5.2	5.2	-	-	5	5.2	5.2
Nitrate as Nitrogen	14797-55-8	-	-	-	-	-	13000	-	13000
Aluminum (Soluble)	7429-90-5	-	-	87	-	-	5-100	87	87
Antimony	7440-36-0	-	-	1000	30	-	-	30	1000
Arsenic	7440-38-2	150	-	150	-	-	5	150	150
Barium	7440-39-3	-	-	4	4	-	-	3.9	4
Beryllium	7440-41-7	-	-	5.3	0.66	-	-	0.66	5.3
Cadmium	7440-43-9	0.25	-	2.2	-	-	0.017	0.25	0.17 [s]
Calcium	7440-70-2	-	-	116000	-	-	-	-	116000
Chromium	7440-47-3	-	-	74	-	-	8.9	74	49 [h,s]
Cobalt	7440-48-4	-	-	23	23	-	-	3	23
Copper	7440-50-8	9	-	9	-	-	2-4	9	5.8 [s]
Iron	7439-89-6	-	1000	1000	-	-	300	1000	1000
Lead	7439-92-1	2.5	-	2.5	-	-	1-7	2.5	1.44 [s]
Magnesium	7439-95-4	-	-	82000	-	-	-	-	82000
Manganese	7439-96-5	-	-	120	120	-	-	80	120
Mercury	7439-97-6	0.77	0.012	0.77	1.3	-	0.026, 0.004	0.77	0.77
Nickel	7440-02-0	52	-	52	-	-	25-150	52	34 [s]
Potassium	7440-09-7	-	-	53000	-	-	-	-	53000
Selenium	7782-49-2	5	-	5	-	-	1	5	5
Silver	7440-22-4	-	-	0.12	0.36	-	0.1	0.36	0.12
Sodium	7440-23-5	-	-	680000	-	-	-	-	680000
Thallium	7440-28-0	-	-	40	12	-	0.8	0.03	40
Vanadium	7440-62-2	-	-	20	20	-	-	19	20
Zinc	7440-66-6	120	-	120	-	-	30	120	77 [s]

Only analytes with one or more candidate SLVs is shown on this table. For the full list of analytes, see Appendix J-1.
- = No benchmark available or available benchmark not needed, based on hierarchy of sources
DEQ = Oregon Department of Environmental Quality
USEPA = US Environmental Protection Agency
ug/L = microgram per liter
HPAH = High Molecular Weight PAH
HPAHs include : Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(j,k)flouranthenes, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, and Pyrene.
LPAH = Low Molecular Weight PAH
LPAHs include: 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, and Phenanthrene.
NOAA = National Oceanic and Atmospheric Administration
NRWQC = National Recommended Water Quality Criteria
ORNL = Oak Ridge National Laboratory
PAH = Polycyclic aromatic hydrocarbon
SLV = Screening Level Value
SQuiRTs = Screening Quick Reference Tables
WQG = Water Quality Guidelines

[a] Benzo(a)pyrene was used as a surrogate because there was no chemical-specific SLV, and benzo(a)pyrene had the lowest SLV of the high-molecular-weight PAHs.

Table J-5b - Ecological Water SLVs
Bradford Island, Upland and River Operable Units
(5 of 5)

Analyte	CAS #	Canidate Ecological Water Screening Level Values (ug/L)							
		USEPA Freshwater NRWQC [k]	DEQ Freshwater Table 33A WQC[l]	Lowest DEQ Level II SLV[m]	ORNL Tier II Chronic Value[n]	USEPA PAH FCV[o]	Canadian WQG[p]	NOAA SQuiRTs Freshwater Chronic [q]	Selected Ecological Water SLV with Surrogates[r]

[b] Xylene (mixed) was used as a surrogate because there was no chemical specific SLV.
[c] 1,2- Dichloropropane was used as a surrogate because there was no chemical specific SLV.
[d] 2- Methylphenol was used as a surrogate because there was no chemical specific SLV.
[e] Ethylbenzene was used as a surrogate because there was no chemical specific SLV.
[f] Tributyltin was used as a surrogate because there was no chemical specific SLV.
[g] Chlordane (CAS # 57749) was used as a surrogate because there was no chemical specific SLV.
[h] Chromium (III) was used as a surrogate because there was no chemical specific SLV.
[i] 2,4-D was used as a surrogate because there was no chemical specific SLV.
[j] Total PCBs was used as a surrogate because the SLV is more conservative than the individual aroclor SLVs.
[k] USEPA 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.
[l] DEQ. Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Table 33A).
[m] Oregon Department of Environmental Quality (ODEQ) 1998. Updated 2001. Guidance for Ecological risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.
[n] Suter GW II, and CL Tsao. 1996. Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on Oak Ridge Reservation: 1996 Revision. ORNL, Oak Ridge, TN. 104pp. ES/ER/TM-96/R2.
[o] USEPA 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. November. EPA-600-R-02-013
[p] Canadian Council of Resource and Environment Ministers. 2007. Canadian Water Quality Guidelines for the Protection of Aquatic Life. December Accessed on 1/20/10 at http://ceqg-rcqe.ccme.ca/.
[q] Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34 pages.
[r] Ecological Hierarchical SLV Selection: 1. USEPA Freshwater NAWQC, 2. ODEQ Freshwater Table 33A WQC, 3. DEQ Level II SLVs (lowest), 4. ORNL Tier II Value, 5. USEPA PAH FCV, 6. Canadian Freshwater WQG, 7. NOAA SQuiRTs Freshwater Chronic.
[s] As per EPA guidance, certain NRWQC were adjusted for hardness based on a site-specific hardness value of 60 mg/L (minimum value of 54 mg/L and maximum value of 64 mg/L). The equation and input parameters for calculating hardness-dependent freshwater dissolved metals criteria (i.e., Criteria Continuous Concentrations) presented in Appendix B of the NRWQC document were applied (EPA 2009) .

[t] For these two PAHs, the ecological SLV hierarchy presented in footnote "r" was not followed. As per the response to DEQ's Specific Comment #26 (see Appendix P), EPA's FCVs were used instead (EPA 2003).

Table J-5c - Ecological Sediment SLVs by Receptor
Bradford Island, Upland and River Operable Units
(1 of 3)

Analyte	CAS #	Sediment Screening Levels (mg/kg)											
		Site-Specific Reference UPL[i]	Benthic Community		Freshwater Fish		Birds				Mammals			
			DEQ Level II SLV [j]	Selected SLV with Surrogates[l]	DEQ Bioaccumulation SLV [k]	Selected SLV with Surrogates[l]	DEQ Bioaccumulation SLV [k]		Selected SLV with Surrogates[l]		DEQ Bioaccumulation SLV [k]		Selected SLV with Surrogates[l]	
							Individual	Population	Individual	Population	Individual	Population	Individual	Population
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	-	-	-	0.0032	0.0032	0.000008	0.00004	0.000008	0.00004	0.0003	0.0081	0.0003	0.0081
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	-	-	-	0.00065	0.00065	0.000004	0.00002	0.000004	0.00002	0.000098	0.0027	0.000098	0.0027
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	-	-	-	0.062	0.062	0.0039	0.019	0.0039	0.019	0.00094	0.026	0.00094	0.026
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	-	-	-	0.065	0.065	0.04	0.2	0.04	0.2	0.00098	0.027	0.00098	0.027
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	-	-	-	0.079	0.079	0.049	0.24	0.049	0.24	0.0012	0.033	0.0012	0.033
2,3',4,4',5'-Pentachlorobiphenyl	65510-44-3	-	-	-	0.079	0.079	0.049	0.24	0.049	0.24	0.0012	0.033	0.0012	0.033
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	-	-	-	0.000062	0.000062	0.0000039	0.000019	0.0000039	0.000019	0.00000028	0.0000078	0.00000028	0.0000078
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	-	-	-	0.079	0.079	0.0049	0.024	0.0049	0.024	0.0012	0.033	0.0012	0.033
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	-	-	-	0.079	0.079	0.0049	0.024	0.0049	0.024	0.0012	0.033	0.0012	0.033
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	-	-	-	0.079	0.079	0.049	0.24	0.049	0.24	0.0012	0.033	0.0012	0.033
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	-	-	-	0.079	0.079	0.00049	0.0024	0.00049	0.0024	0.0000012	0.000033	0.0000012	0.000033
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	-	-	-	0.43	0.43	0.27	1.4	0.27	1.4	0.0066	0.18	0.0066	0.18
2,3,7,8-TCDD (TEQ)	-	-	0.009	0.009	0.00000056	0.00000056	0.0000017	0.0000035	0.0000017	0.0000035	0.000000052	0.0000014	0.000000052	0.0000014
4,4'-DDD	72-54-8	-	0.004	0.004	0.00039	0.00039 [f]	9.50E-05	3.40E-04	0.000095 [f]	0.00034 [f]	0.0049	0.024	0.0049 [f]	0.024 [f]
4,4'-DDE	72-55-9	-	0.0015	0.0015	0.00039	0.00039 [f]	9.50E-05	3.40E-04	0.000095 [f]	0.00034 [f]	0.0049	0.024	0.0049 [f]	0.024 [f]
4,4'-DDT	50-29-3	-	0.004	0.004	0.00039	0.00039 [f]	9.50E-05	3.40E-04	0.000095 [f]	0.00034 [f]	0.0049	0.024	0.0049 [f]	0.024 [f]
Acenaphthene	83-32-9	-	0.29	0.29	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	208-96-8	-	0.16	0.16	-	-	-	-	-	-	-	-	-	-
Aldrin	309-00-2	-	0.04	0.04	-	-	-	-	-	-	-	-	-	-
Aluminum	7429-90-5	38000	-	38000	-	38000	-	-	38000	38000	-	-	38000	38000
Anthracene	120-12-7	-	0.057	0.057	-	-	-	-	-	-	-	-	-	-
Antimony	7440-36-0	0.427	3	3	-	0.427	-	-	0.427	0.427	-	-	0.427	0.427
Aroclor 1016	12674-11-2	-	-	0.007 [h]	-	0.022 [c]	-	-	0.0018 [c]	0.091 [c]	-	-	0.044 [c]	0.084 [c]
Aroclor 1221	11104-28-2	-	-	0.007 [h]	-	0.022 [c]	-	-	0.0018 [c]	0.091 [c]	-	-	0.044 [c]	0.084 [c]
Aroclor 1232	11141-16-5	-	-	0.007 [h]	-	0.022 [c]	-	-	0.0018 [c]	0.091 [c]	-	-	0.044 [c]	0.084 [c]
Aroclor 1242	53469-21-9	-	-	0.007 [h]	-	0.022 [c]	-	-	0.0018 [c]	0.091 [c]	-	-	0.044 [c]	0.084 [c]
Aroclor 1248	12672-29-6	-	0.021	0.021	-	0.022 [c]	-	-	0.0018 [c]	0.091 [c]	-	-	0.044 [c]	0.084 [c]
Aroclor 1254	11097-69-1	-	0.007	0.007	-	0.022 [c]	-	-	0.0018 [c]	0.091 [c]	-	-	0.044 [c]	0.084 [c]
Aroclor 1260	11096-82-5	-	-	0.007 [h]	-	0.022 [c]	-	-	0.0018 [c]	0.091 [c]	-	-	0.044 [c]	0.084 [c]
Aroclor 1262	37324-23-5	-	-	0.007 [h]	-	0.022 [c]	-	-	0.0018 [c]	0.091 [c]	-	-	0.044 [c]	0.084 [c]
Aroclor 1268	11100-14-4	-	-	0.007 [h]	-	0.022 [c]	-	-	0.0018 [c]	0.091 [c]	-	-	0.044 [c]	0.084 [c]
Arsenic	7440-38-2	5.86	6	6	-	5.86	-	-	5.86	5.86	-	-	5.86	5.86
Barium	7440-39-3	315	-	315	-	315	-	-	315	315	-	-	315	315
Benzo(a)anthracene	56-55-3	-	0.032	0.032	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	50-32-8	-	0.032	0.032	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	205-99-2	-	-	0.027 [a]	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	191-24-2	-	0.3	0.3	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	207-08-9	-	0.027	0.027	-	-	-	-	-	-	-	-	-	-
Benzofluoranthenes, Total	56832-73-6	-	-	0.027 [a]	-	-	-	-	-	-	-	-	-	-
Beryllium	7440-41-7	0.847	-	0.847	-	0.847	-	-	0.847	0.847	-	-	0.847	0.847
BHC (alpha)	319-84-6	-	-	0.0009 [e]	-	-	-	-	-	-	-	-	-	-
BHC (beta)	319-85-7	-	-	0.0009 [e]	-	-	-	-	-	-	-	-	-	-
BHC (delta)	319-86-8	-	-	0.0009 [e]	-	-	-	-	-	-	-	-	-	-
BHC (gamma) Lindane	58-89-9	-	0.0009	0.0009	-	-	-	-	-	-	-	-	-	-
Bis(2-ethylhexyl) Phthalate	117-81-7	-	0.75	0.75	-	-	-	-	-	-	-	-	-	-
Butyl Benzyl Phthalate	85-68-7	-	-	0.11 [b]	-	-	-	-	-	-	-	-	-	-
Cadmium	7440-43-9	0.674	0.6	0.674	-	0.674	-	-	0.674	0.674	-	-	0.674	0.674

Table J-5c - Ecological Sediment SLVs by Receptor
Bradford Island, Upland and River Operable Units
(2 of 3)

Analyte	CAS #	Sediment Screening Levels (mg/kg)											
		Site-Specific Reference UPL[i]	Benthic Community		Freshwater Fish		Birds				Mammals			
			DEQ Level II SLV [j]	Selected SLV with Surrogates[l]	DEQ Bioaccumulation SLV [k]	Selected SLV with Surrogates[l]	DEQ Bioaccumulation SLV [k]		Selected SLV with Surrogates[l]		DEQ Bioaccumulation SLV [k]		Selected SLV with Surrogates[l]	
							Individual	Population	Individual	Population	Individual	Population	Individual	Population
Carbazole	86-74-8	-	0.14	0.14	-	-	-	-	-	-	-	-	-	-
Chlordane (alpha)	5103-71-9	-	-	0.0045 [d]	-	0.0005 [d]	-	-	0.01 [d]	0.051 [d]	-	-	0.028 [d]	0.056 [d]
Chlordane (gamma)	5103-74-2	-	-	0.0045 [d]	-	0.0005 [d]	-	-	0.01 [d]	0.051 [d]	-	-	0.028 [d]	0.056 [d]
Chlordane (technical)	12789-03-6	-	0.0045	0.0045	0.00050	0.0005	0.010	0.051	0.01	0.051	0.028	0.056	0.028	0.056
Chromium	7440-47-3	28.0	37	37	-	28	-	-	28	28	-	-	28	28
Chrysene	218-01-9	-	0.057	0.057	-	-	-	-	-	-	-	-	-	-
Cobalt	7440-48-4	15.2	-	15.2	-	15.2	-	-	15.2	15.2	-	-	15.2	15.2
Copper	7440-50-8	55.6	36	55.6	-	55.6	-	-	55.6	55.6	-	-	55.6	55.6
Dibenz(a,h)anthracene	53-70-3	-	0.033	0.033	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	132-64-9	-	5.1	5.1	-	-	-	-	-	-	-	-	-	-
Dieldrin	60-57-1	-	0.003	0.003	0.0022	0.0022	0.00037	0.0018	0.00037	0.0018	0.0012	0.0061	0.0012	0.0061
Diethyl Phthalate	84-66-2	-	-	0.11 [b]	-	-	-	-	-	-	-	-	-	-
Dimethyl Phthalate	131-11-3	-	-	0.11 [b]	-	-	-	-	-	-	-	-	-	-
Di-n-butyl Phthalate	84-74-2	-	0.11	0.11	-	-	-	-	-	-	-	-	-	-
Di-n-octyl Phthalate	117-84-0	-	-	0.11 [b]	-	-	-	-	-	-	-	-	-	-
Endrin	72-20-8	-	0.003	0.003	-	-	-	-	-	-	-	-	-	-
Fluoranthene	206-44-0	-	0.111	0.111	37	37	-	-	-	-	360	1,800	360	1800
Fluorene	86-73-7	-	0.077	0.077	-	-	-	-	-	-	-	-	-	-
Heptachlor	76-44-8	-	0.01	0.01	-	-	-	-	-	-	-	-	-	-
Heptachlor Epoxide	1024-57-3	-	0.0006	0.0006	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	118-74-1	-	0.1	0.1	61	61	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	193-39-5	-	0.017	0.017	-	-	-	-	-	-	-	-	-	-
Lead	7439-92-1	14.5	35	35	-	14.5	-	-	14.5	14.5	-	-	14.5	14.5
Manganese	7439-96-5	-	1100	1100	-	-	-	-	-	-	-	-	-	-
Mercury	7439-97-6	0.214	0.2	0.214	-	0.214	-	-	0.214	0.214	-	-	0.214	0.214
Naphthalene	91-20-3	-	0.176	0.176	-	-	-	-	-	-	-	-	-	-
Nickel	7440-02-0	21.2	18	21.2	-	21.2	-	-	21.2	21.2	-	-	21.2	21.2
p-cresol (4-Methylphenol)	106-44-5	-	-	0.048 [g]	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	87-86-5	-	-	-	0.31	0.31	-	-	-	-	0.33	3.3	0.33	3.3
Phenanthrene	85-01-8	-	0.042	0.042	-	-	-	-	-	-	-	-	-	-
Phenol	108-95-2	-	0.048	0.048	-	-	-	-	-	-	-	-	-	-
Total DDTs		-	0.007	0.007	0.00039	0.00039	0.000095	0.00034	0.000095	0.00034	0.0049	0.024	0.0049	0.024
Total Polychlorinated biphenyl (PCB)	1336-36-3	-	0.034	0.034	0.022	0.022	0.0018	0.091	0.0018	0.091	0.044	0.084	0.044	0.084
Total PAH		-	1.61	1.61	-	-	-	-	-	-	-	-	-	-
Total LPAH		-	0.076	0.076	-	-	-	-	-	-	-	-	-	-
Total HPAH		-	0.193	0.193	-	-	-	-	-	-	-	-	-	-
Pyrene	129-00-0	-	0.053	0.053	1.9	1.9	-	-	-	-	18000	90,000	18000	90000
Silver	7440-22-4	-	4.5	4.5	-	-	-	-	-	-	-	-	-	-
Thallium	7440-28-0	0.354	-	0.354	-	0.354	-	-	0.354	0.354	-	-	0.354	0.354
Tributyltin	688-73-3	-	-	-	0.0023	0.0023	1.6	4.1	1.6	4.1	0.73	1.1	0.73	1.1
Vanadium	7440-62-2	70.6	-	70.6	-	70.6	-	-	70.6	70.6	-	-	70.6	70.6
Zinc	7440-66-6	106	123	123	-	106	-	-	106	106	-	-	106	106

Note
Only analytes with one or more candidate SLVs is shown on this table. For the full list of analytes, see Appendix J-1.
- = No benchmark available
DEQ = Oregon Department of Environmental Quality
Eco = ecological

Table J-5c - Ecological Sediment SLVs by Receptor
Bradford Island, Upland and River Operable Units
(3 of 3)

Analyte	CAS #	Sediment Screening Levels (mg/kg)											
		Site-Specific Reference UPL[i]	Benthic Community		Freshwater Fish		Birds				Mammals			
			DEQ Level II SLV [j]	Selected SLV with Surrogates[l]	DEQ Bioaccumulation SLV [k]	Selected SLV with Surrogates[l]	DEQ Bioaccumulation SLV [k]		Selected SLV with Surrogates[l]		DEQ Bioaccumulation SLV [k]		Selected SLV with Surrogates[l]	
							Individual	Population	Individual	Population	Individual	Population	Individual	Population

HH = human health
HPAH = High Molecular Weight PAH
HPAHs include : Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(j,k)flouranthenes, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, and Pyrene.
LPAH = Low Molecular Weight PAH
LPAHs include: 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, and Phenanthrene.
mg/kg = milligram per kilogram
SLV = screening level value
UPL = Upper Prediction Limit

[a] Benzo(k)fluoranthene was used as a surrogate because there was no chemical specific SLV.
[b] Di-n-butyl phthalate was used as a surrogate because there was no chemical specific SLV and di-n-butyl phthalate had the lowest SLV of the phthalates.
[c] Total PCBs was used as a surrogate because there were no individual aroclor SLVs.
[d] Chlordane (technical) was used as a surrogate because there was no chemical specific SLV and chlordane (technical) was the lowest of the chlordanes.
[e] BHC (gamma) Lindane was used as a surrogate because there was no chemical specific SLV and BHC (gamma) was the lowest of the BHCs.
[f] DDT (Total) was used as a surrogate because there was no chemical specific SLVs.
[g] Phenol was used as a surrogate because there was no chemical specific SLV and phenol had the lowest SLV of the phenols.
[h] PCB1254 was used as a surrogate because the SLV was the lowest of the individual aroclor SLVs and was lower than the Total PCBs SLV.
[i] **Site-Specific Reference UPLs are based are not based on toxicity values.**
[j] DEQ. 1998. Updated 2001. Guidance for Ecological Risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.
[k] DEQ 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. April 3.
[l] **For inorganics, the higher of the SLV and the Site-Specific Reference UPL was selected as the SLV.**

Table J-5d - Ecological Tissue SLVs by Receptor
Bradford Island, River Operable Unit
(1 of 2)

Analyte	CAS #	Tissue Screening Levels (mg/kg wet wt.)									
		Birds				Mammals				Fish, Shellfish, and Other Aquatic Organisms	
		DEQ ATLs [a]		Selected SLV with Surrogates		DEQ ATLs [a]		Selected SLV with Surrogates		DEQ CTLs Freshwater [a]	Selected SLV with Surrogates
		Individual	Population	Individual	Population	Individual	Population	Individual	Population		
3,3',4,4'-Tetrachlorobiphenyl	32598-13-3	0.00016	0.0008	0.00016	0.0008	0.0058	0.16	0.0058	0.16	-	0.43 [b]
3,4,4',5-Tetrachlorobiphenyl	70362-50-4	0.00008	0.0004	0.00008	0.0004	0.002	0.054	0.002	0.054	-	0.43 [b]
2,3,3',4,4'-Pentachlorobiphenyl	32598-14-4	0.08	0.4	0.08	0.4	0.02	0.54	0.02	0.54	-	0.43 [b]
2,3,4,4',5-Pentachlorobiphenyl	74472-37-0	0.8	4.0	0.8	4.0	0.02	0.54	0.02	0.5	-	0.43 [b]
2,3',4,4',5-Pentachlorobiphenyl	31508-00-6	0.8	4.0	0.8	4.0	0.02	0.54	0.02	0.5	-	0.43 [b]
2,3',4,4',5'-Pentachlorobiphenyl	65510-44-3	0.8	4.0	0.8	4.0	0.02	0.54	0.02	0.5	-	0.43 [b]
3,3',4,4',5-Pentachlorobiphenyl	57465-28-8	0.00008	0.0004	0.00008	0.0004	0.0000058	0.00016	0.0000058	0.00016	-	0.43 [b]
2,3,3',4,4',5-Hexachlorobiphenyl	38380-08-4	0.08	0.4	0.08	0.4	0.02	0.54	0.02	0.54	-	0.43 [b]
2,3,3',4,4',5'-Hexachlorobiphenyl	69782-90-7	0.08	0.4	0.08	0.4	0.02	0.54	0.02	0.54	-	0.43 [b]
2,3',4,4',5,5'-Hexachlorobiphenyl	52663-72-6	0.8	4.0	0.8	4.0	0.02	0.54	0.02	0.5	-	0.43 [b]
3,3',4,4',5,5'-Hexachlorobiphenyl	32774-16-6	0.008	0.04	0.008	0.04	0.00002	0.00054	0.00002	0.00054	-	0.43 [b]
2,3,3',4,4',5,5'-Heptachlorobiphenyl	39635-31-9	0.8	4.0	0.8	4.0	0.02	0.54	0.02	0.5	-	0.43 [b]
2,3,7,8-TCDD (TEQ)	-	0.000019	0.00004	0.000019	0.00004	0.00000058	0.000016	0.00000058	0.000016	0.0000064	0.0000064
Acenaphthene	83-32-9	-	-	-	-	-	-	190 [c]	950 [c]	-	19 [c]
Acenaphthylene	208-96-8	-	-	-	-	-	-	190 [c]	950 [c]	-	19 [c]
Anthracene	120-12-7	-	-	-	-	-	-	190 [c]	950 [c]	-	19 [c]
Aroclor 1016	12674-11-2	-	-	0.035 [b]	1.8 [b]	-	-	0.88 [b]	1.7 [b]	-	0.43 [b]
Aroclor 1221	11104-28-2	-	-	0.035 [b]	1.8 [b]	-	-	0.88 [b]	1.7 [b]	-	0.43 [b]
Aroclor 1232	11141-16-5	-	-	0.035 [b]	1.8 [b]	-	-	0.88 [b]	1.7 [b]	-	0.43 [b]
Aroclor 1242	53469-21-9	-	-	0.035 [b]	1.8 [b]	-	-	0.88 [b]	1.7 [b]	-	0.43 [b]
Aroclor 1248	12672-29-6	-	-	0.035 [b]	1.8 [b]	-	-	0.88 [b]	1.7 [b]	-	0.43 [b]
Aroclor 1254	11097-69-1	-	-	0.035 [b]	1.8 [b]	-	-	0.88 [b]	1.7 [b]	-	0.43 [b]
Aroclor 1260	11096-82-5	-	-	0.035 [b]	1.8 [b]	-	-	0.88 [b]	1.7 [b]	-	0.43 [b]
Aroclor 1262	37324-23-5	-	-	0.035 [b]	1.8 [b]	-	-	0.88 [b]	1.7 [b]	-	0.43 [b]
Aroclor 1268	11100-14-4	-	-	0.035 [b]	1.8 [b]	-	-	0.88 [b]	1.7 [b]	-	0.43 [b]
Arsenic	7440-38-2	13	64	13	64	7.6	38	7.6	38	6.6	6.6
Benz(a)anthracene	56-55-3	-	-	-	-	-	-	9500 [d]	47000 [d]	-	1 [d]
Benzo(a)pyrene	50-32-8	-	-	-	-	-	-	9500 [d]	47000 [d]	-	1 [d]
Benzo(b)fluoranthene	205-99-2	-	-	-	-	-	-	9500 [d]	47000 [d]	-	1 [d]
Benzo(g,h,i)perylene	191-24-2	-	-	-	-	-	-	9500 [d]	47000 [d]	-	1 [d]
Benzo(k)fluoranthene	207-08-9	-	-	-	-	-	-	9500 [d]	47000 [d]	-	1 [d]
Bis(2-ethylhexyl) Phthalate	117-81-7	6.26	31.3	6.26	31.3	55.5	555	55.5 [e]	555 [e]	1.76	1.76
Butyl Benzyl Phthalate	85-68-7	6.26	31.3	6.26	31.3	55.5	555	55.5 [e]	555 [e]	0.310	0.310
Cadmium	7440-43-9	8.4	42	8.4	42	5.6	28	5.6	28	0.15	0.15
Chrysene	218-01-9	-	-	-	-	-	-	9500 [d]	47000 [d]	-	1 [d]
Dibenz(a,h)anthracene	53-70-3	-	-	-	-	-	-	9500 [d]	47000 [d]	-	1 [d]
Di-n-butyl Phthalate	84-74-2	0.626	6.26	0.63	6.26	1672	5569	1672 [e]	5569 [e]	3.12	3.12
Di-n-octyl Phthalate	117-84-0	0.626	6.26	0.63	6.26	1672	5569	1672 [e]	5569 [e]	63.0	63.0
Fluoranthene	206-44-0	-	-	-	-	190	950	190	950	19	19
Fluorene	86-73-7	-	-	-	-	-	-	190 [c]	950 [c]	-	19 [c]
Indeno(1,2,3-cd)pyrene	193-39-5	-	-	-	-	-	-	9500 [d]	47000 [d]	-	1 [d]

Table J-5d - Ecological Tissue SLVs by Receptor
Bradford Island, River Operable Unit
(2 of 2)

Analyte	CAS #	Tissue Screening Levels (mg/kg wet wt.)									
		Birds				Mammals				Fish, Shellfish, and Other Aquatic Organisms	
		DEQ ATLs [a]		Selected SLV with Surrogates		DEQ ATLs [a]		Selected SLV with Surrogates		DEQ CTLs Freshwater [a]	Selected SLV with Surrogates
		Individual	Population	Individual	Population	Individual	Population	Individual	Population		
Lead	7439-92-1	9.3	46	9.3	46	34	170	34	170	0.12	0.12
Mercury	7439-97-6	0.074	0.15	0.074	0.15	0.12	0.2	0.12	0.2	0.088	0.088
Phenanthrene	85-01-8	-	-	-	-	-	-	190 [c]	950 [c]	-	19 [c]
Pyrene	129-00-0	-	-	-	-	9500	47,000	9500	47000	1	1
Selenium	7782-49-2	0.23	0.46	0.23	0.46	0.036	0.88	0.036	0.88	0.024	0.024
Total Polychlorinated biphenyl (PCB)	1336-36-3	0.035	1.8	0.035	1.8	0.88	1.7	0.88	1.7	0.43	0.43

Note
Only analytes with one or more candidate SLVs is shown on this table. For the full list of analytes, see Appendix J-1.
- = No benchmark available
ATL = Acceptable tissue level
CTL = Critical tissue level (for fish)
DEQ = Oregon Department of Environmental Quality
Eco = ecological
HH = human health
HPAH = High Molecular Weight PAH

HPAHs include : Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(j,k)flouranthenes, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, and Pyrene.
LPAH = Low Molecular Weight PAH

LPAHs include: 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, and Phenanthrene.
mg/kg = milligram per kilogram
RI = Remedial Investigation
SLV = screening level value
UPL = Upper Prediction Limit

[a] DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. April 3.
[b] Total Aroclors was used as a surrogate because there was no chemical specific SLV.
[c] The SLV for fluoranthene was selected as a surrogate because there was no chemical-specific SLV.
[d] The SLV for pyrene was selected as a surrogate because there was no chemical-specific SLV.
[e] The ATLs and CTLs were developed based on the procedures outlined in DEQ 2007 (see DEQ Appendix L-3).

Table J-6
Identification of Bioaccumulative COIs in the Upland OU
(1 of 6)

Chemicals of Interest	GW/Soil		GW		Soil			HH Bioaccumulation in GW		Eco Bioaccumulation in Soil	
	$logK_{OW}$		BCF		Earthworm BAF[1] (90th %tile)	Plant BAF[2] (90th %tile)	Small Mammal BAF[3] (90th %tile)	COI Identified as Bioaccumulative? (BCF > 300 or $LogK_{ow}$ > 3.5)	HH Bioaccumulation GW SLV?	COI Identified as Bioaccumulative? (BAF > 0.1 or $LogK_{ow}$ > 3.5)	Eco Bioaccumulation Soil SLV?[9]
INORGANICS											
Aluminum	-		500	7	NV	0.005	0.093	**Yes**	**No**	No	No
Antimony	-		100	7	NV	0.0114	NV	No	Yes	No	Mammal
Arsenic	-		300	7	0.523	1.103	0.016	**Yes**	Yes	**Yes**	Avian & Mammal
Barium	-		4.00	7	NV	0.477	0.253	No	Yes	**Yes**	Avian & Mammal
Beryllium	-		100	7	NV	NV	NV	No	No	NA	NA
Cadmium	-		200	7	40.7	3.250	7.017	No	No	**Yes**	Avian & Mammal
Calcium	-		NV		NA	NA	NA	NV	No	NA	NA
Chromium	-		200	7	3.162	0.0839	0.3490	No	No	**Yes**	Avian & Mammal
Cobalt	-		300	7	NV	0.0248	0.14	**Yes**	**No**	**Yes**	Avian & Mammal
Copper	-		200	7	1.531	0.625	1.29	No	Yes	**Yes**	Avian & Mammal
Iron	-		200	7	NA	NA	NA	No	Yes	NA	NA
Lead	-		300	7	1.522	0.468	0.339	**Yes**	**No**	**Yes**	Avian & Mammal
Magnesium	-		NV		NA	NA	NA	NV	No	NA	NA
Manganese	-		400	7	0.124	0.234	0.079	**Yes**	Yes	**Yes**	Avian & Mammal
Mercury	-		1000	7	20.6	5.00	0.192	**Yes**	**No**	**Yes**	Avian & Mammal
Nickel	-		100	7	4.730	1.411	0.5891	No	Yes	**Yes**	Avian & Mammal
Potassium	-		NV		NA	NA	NA	NV	No	NA	NA
Selenium	-		200	7	1.340	3.012	1.263	No	Yes	**Yes**	Avian & Mammal
Silver	-		4.00	7	15.338	0.0367	0.5013	No	No	**Yes**	Avian & Mammal
Sodium	-		20.0	7	NA	NA	NA	No	No	NA	NA
Thallium	-		10000	8	NV	NV	0.123	**Yes**	Yes	**Yes**	Mammal
Vanadium	-		NV		NV	0.0097	0.19	NV	No	**Yes**	Avian & Mammal
Zinc	-		1000	7	12.885	1.820	2.69	**Yes**	Yes	**Yes**	Avian & Mammal
BUTYLTINS											
Dibutyltin	1.49	4	-		-	-	-	No	No	No	No
Monobutyltin	1.23	5	-		-	-	-	No	No	No	No
Tetrabutyltin	9.37	4	-		-	-	-	**Yes**	**No**	**Yes**	**No**
Tributyltin	4.76	4	-		-	-	-	**Yes**	**No**	**Yes**	**No**
PESTICIDES											
4,4'-DDD	6.02	4	-		-	-	-	**Yes**	Yes	**Yes**	Avian & Mammal
4,4'-DDE	6.51	4	-		-	-	-	**Yes**	Yes	**Yes**	Avian & Mammal
4,4'-DDT	6.91	4	-		-	-	-	**Yes**	Yes	**Yes**	Avian & Mammal

Table J-6
Identification of Bioaccumulative COIs in the Upland OU
(2 of 6)

Chemicals of Interest	$logK_{OW}$		BCF		Earthworm BAF[1] (90th %tile)	Plant BAF[2] (90th %tile)	Small Mammal BAF[3] (90th %tile)	COI Identified as Bioaccumulative? (BCF > 300 or $LogK_{ow}$ > 3.5)	HH Bioaccumulation GW SLV?	COI Identified as Bioaccumulative? (BAF > 0.1 or $LogK_{ow}$ > 3.5)	Eco Bioaccumulation Soil SLV?[9]
Aldrin	6.50	4	-		-	-	-	**Yes**	Yes	**Yes**	Avian & Mammal
BHC (alpha)	4.14	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
BHC (beta)	4.14	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
BHC (delta)	4.14	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
BHC (gamma) Lindane	3.72	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Chlordane (alpha)	5.66	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Chlordane (gamma)	5.62	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Chlordane (technical)	6.16	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Dieldrin	5.40	4	-		-	-	-	**Yes**	Yes	**Yes**	Avian & Mammal
Endosulfan I	3.83	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Endosulfan II	5.20	6	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Endosulfan Sulfate	3.66	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Endrin	5.40	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Endrin Aldehyde	6.44	6	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Endrin Ketone	5.33	6	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Heptachlor	5.47	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Heptachlor Epoxide	4.98	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Methoxychlor	5.08	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
PCBs											
Aroclor 1248	6.20	4	-		-	-	-	**Yes**	Yes	**Yes**	Avian & Mammal
Aroclor 1254	6.50	4	-		-	-	-	**Yes**	Yes	**Yes**	Avian & Mammal
Aroclor 1260	7.55	4	-		-	-	-	**Yes**	Yes	**Yes**	Avian & Mammal
Total PCBs (Aroclors)	6.30	6	-		-	-	-	**Yes**	Yes	**Yes**	Avian & Mammal
HERBICIDES											
2,4,5-T	3.31	4	-		-	-	-	No	No	No	Surrogate
4-Nitrophenol	1.91	4	-		-	-	-	No	Yes	No	No
Dichloroprop	3.43	4	-		-	-	-	No	No	No	Surrogate
MCPP	3.13	4	-		-	-	-	No	No	No	Surrogate
VOCs											
1,1,1-Trichloroethane (TCA)	2.49	4	-		-	-	-	No	No	No	No
1,1-Dichloroethane	1.79	4	-		-	-	-	No	No	No	No
1,1-Dichloroethene	2.13	4	-		-	-	-	No	Yes	No	No
1,4-Dichlorobenzene	3.44	4	-		-	-	-	No	Yes	No	No

Table J-6
Identification of Bioaccumulative COIs in the Upland OU
(3 of 6)

Chemicals of Interest	$logK_{OW}$		BCF		Earthworm BAF[1] (90th %tile)	Plant BAF[2] (90th %tile)	Small Mammal BAF[3] (90th %tile)	COI Identified as Bioaccumulative? (BCF > 300 or $LogK_{ow}$ > 3.5)	HH Bioaccumulation GW SLV?	COI Identified as Bioaccumulative? (BAF > 0.1 or $LogK_{ow}$ > 3.5)	Eco Bioaccumulation Soil SLV?[9]
1,2,4-Trimethylbenzene	3.63	4	-		-	-	-	**Yes**	**No**	**Yes**	**No**
1,3,5-Trimethylbenzene	3.42	4	-		-	-	-	No	No	No	No
2,2-Dichloropropane	2.92	4	-		-	-	-	No	Yes	No	No
2-Butanone (MEK)	0.29	4	-		-	-	-	No	No	No	No
2-Hexanone	1.38	4	-		-	-	-	No	No	No	No
4-Isopropyltoluene	4.10	4	-		-	-	-	**Yes**	**No**	**Yes**	**No**
4-Methyl-2-pentanone (MIBK)	1.16	6	-		-	-	-	No	No	No	No
Acetone	-0.24	4	-		-	-	-	No	No	No	No
Benzene	2.13	4	-		-	-	-	No	Yes	No	No
Bromomethane	1.19	4	-		-	-	-	No	Yes	No	No
Carbon Disulfide	1.94	4	-		-	-	-	No	No	No	No
Carbon Tetrachloride	2.83	4	-		-	-	-	No	Yes	No	No
Chloroform	1.97	4	-		-	-	-	No	Yes	No	No
Chloromethane	0.91	4	-		-	-	-	No	No	No	No
cis-1,2-Dichloroethene	1.86	4	-		-	-	-	No	No	No	No
Dichlorodifluoromethane	2.16	4	-		-	-	-	No	No	No	No
Dichloromethane (Methylene Chloride)	1.25	4	-		-	-	-	No	Yes	No	No
Ethylbenzene	3.15	4	-		-	-	-	No	Yes	No	No
Isopropylbenzene	3.66	4	-		-	-	-	**Yes**	**No**	**Yes**	**No**
m,p-Xylenes	3.20	4	-		-	-	-	No	No	No	No
n-Butylbenzene	4.38	4	-		-	-	-	**Yes**	**No**	**Yes**	**No**
Naphthalene	3.30	4	-		-	-	-	No	Yes	No	Incl in tLPAH
n-Propylbenzene	3.69	4	-		-	-	-	**Yes**	**No**	**Yes**	**No**
o-Xylene	3.12	4	-		-	-	-	No	No	No	No
sec-Butylbenzene	4.57	4	-		-	-	-	**Yes**	**No**	**Yes**	**No**
Tetrachloroethene (PCE)	3.40	4	-		-	-	-	No	Yes	No	No
Toluene	2.73	4	-		-	-	-	No	Yes	No	No
trans-1,2-Dichloroethene	2.09	4	-		-	-	-	No	Yes	No	No
Trichloroethene (TCE)	2.42	4	-		-	-	-	No	Yes	No	No
Trichlorofluoromethane	2.53	4	-		-	-	-	No	No	No	No
Vinyl Chloride	1.62	6	-		-	-	-	No	Yes	No	No
SVOCs											
2-Methylphenol	1.95	4	-		-	-	-	No	Yes	No	No

Table J-6
Identification of Bioaccumulative COIs in the Upland OU
(4 of 6)

Chemicals of Interest	$logK_{OW}$		BCF		Earthworm BAF[1] (90th %tile)	Plant BAF[2] (90th %tile)	Small Mammal BAF[3] (90th %tile)	COI Identified as Bioaccumulative? (BCF > 300 or $LogK_{ow}$ > 3.5)	HH Bioaccumulation GW SLV?	COI Identified as Bioaccumulative? (BAF > 0.1 or $LogK_{ow}$ > 3.5)	Eco Bioaccumulation Soil SLV?[9]
Benzoic Acid	1.87	4	-		-	-	-	No	No	No	No
Benzyl alcohol	1.10	4	-		-	-	-	No	No	No	No
Bis(2-ethylhexyl) Phthalate	7.60	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Butyl Benzyl Phthalate	4.73	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Carbazole	3.72	4	-		-	-	-	**Yes**	**No**	**Yes**	**No**
Dibenzofuran	4.12	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Diethyl Phthalate	2.42	4	-		-	-	-	No	Yes	No	No
Dimethyl Phthalate	1.60	4	-		-	-	-	No	Yes	No	No
Di-n-butyl Phthalate	4.50	4	-		-	-	-	**Yes**	Yes	**Yes**	**No**
Di-n-octyl Phthalate	8.54	6	-		-	-	-	**Yes**	Yes	**Yes**	**No**
N-Nitrosodiphenylamine	3.16	6	-		-	-	-	No	Yes	No	No
Isophorone	1.70	4	-		-	-	-	No	Yes	No	No
p-cresol (4-Methylphenol)	1.94	4	-		-	-	-	No	No	No	No
Pentachlorophenol	5.12	4	-		-	-	-	**Yes**	Yes	**Yes**	Avian & Mammal
Phenol	1.46	4	-		-	-	-	No	Yes	No	No
PAHs											
2-Methylnaphthalene	3.86	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tLPAH
Acenaphthene	3.92	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tLPAH
Acenaphthylene	3.94	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tLPAH
Anthracene	4.45	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tLPAH
Benzo(a)anthracene	5.52	6	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tHPAH
Benzo(a)pyrene	6.13	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tHPAH
Benzo(b)fluoranthene	5.78	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tHPAH
Benzo(g,h,i)perylene	6.63	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tHPAH
Benzo(k)fluoranthene	6.11	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tHPAH
Benzofluoranthenes, Total	NV		-		-	-	-	**Yes**	Yes	**Yes**	Incl in tHPAH
Chrysene	5.81	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tHPAH
Dibenz(a,h)anthracene	6.75	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tHPAH
Fluoranthene	5.16	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tHPAH
Fluorene	4.18	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tLPAH
Indeno(1,2,3-cd)pyrene	6.70	6	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tHPAH
Naphthalene	3.30	4	-		-	-	-	No	Yes	No	Incl in tLPAH
Phenanthrene	4.46	4	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tLPAH

Table J-6
Identification of Bioaccumulative COIs in the Upland OU
(5 of 6)

Chemicals of Interest	$logK_{OW}$		BCF		Earthworm BAF[1] (90th %tile)	Plant BAF[2] (90th %tile)	Small Mammal BAF[3] (90th %tile)	COI Identified as Bioaccumulative? (BCF > 300 or $LogK_{ow}$ > 3.5)	HH Bioaccumulation GW SLV?	COI Identified as Bioaccumulative? (BAF > 0.1 or $LogK_{ow}$ > 3.5)	Eco Bioaccumulation Soil SLV?[9]
Pyrene	4.88	[4]	-		-	-	-	**Yes**	Yes	**Yes**	Incl in tHPAH
Total HPAHs	NV		-		-	-	-	NA	NA	**Yes**	Mammal
Total LPAHs	NV		-		-	-	-	NA	NA	**Yes**	Mammal
TPH											
Diesel Range Organics	NV		-		-	-	-	NV	No	NV	No
Gasoline Range Organics	NV		-		-	-	-	NV	No	NV	No
Residual Range Organics	NV		-		-	-	-	NV	No	NV	No

Notes:
BAF = bioaccumulation factor
BCF = bioconcentration factor
COI = chemical of interest
Eco = Ecological
GW = Groundwater
HH = Human Health
Incl in tHPAH = COI is included in the Total HPAH Screening
Incl in tLPAH = COI is included in the Total LPAH Screening
NA = Not applicable
NV = No Value
SLV = screening level value

Some metals should have BAFs calculated from regression models; however, 90th Percentile BAFs are shown for bioaccumulation decision-making.

(1) Sample, B.E., J.J. Beauchamp, R.A. Efroymson, G.W. Suter, II, and T.L. Ashwood. February 1998. Development and Validation of Bioaccumulation Models for Earthworms. Prepared for the U.S. Department of Energy. Oak Ridge National Laboratory. ES/ER/TM-220.

(2) Bechtel Jacobs Company, LLC. September 1998. Empirical Models for the Uptake of Inorganic Chemicals from Soil by Plants. Prepared for the U.S. Department of Enegry, Office of Environmental Management. BJC/OR-133.

(3) Sample, B.E., J.J. Beauchamp, R.A. Efroymson, and G.W. Suter, II. February 1998. Development and Validation of Bioaccumulation Models for Small Mammals. Prepared for the U.S. Department of Energy, Office of Environmental Management. ES/ER/TM-219.

(4) US Environmental Protection Agency (EPA), 2008. Estimation Programs Interface (EPI) Suite. US Environmental Protection Agency Office of Pollution Prevention and Toxics and Syracuse Research Corporation (SRC).

5) Environment Canada. http://www.ec.gc.ca/CEPARegistry/documents/subs_list/organotin/Organotins_followup_ec_P3.cfm.

6) Texas Commission of Environmental Quality (TCEQ), 2010. TRRP Protective Concentration Levels, toxicity and chemical/physical properties. Updated May 2010.

7) Oak Ridge National Laboratory's Risk Assessment Information System (RAIS) database

Table J-6
Identification of Bioaccumulative COIs in the Upland OU
(6 of 6)

Chemicals of Interest	$logK_{OW}$	BCF	Earthworm BAF[1] (90th %tile)	Plant BAF[2] (90th %tile)	Small Mammal BAF[3] (90th %tile)	COI Identified as Bioaccumulative? (BCF > 300 or $LogK_{ow}$ > 3.5)	HH Bioaccumulation GW SLV?	COI Identified as Bioaccumulative? (BAF > 0.1 or $LogK_{ow}$ > 3.5)	Eco Bioaccumulation Soil SLV?[9]

8) Washington Department of Ecology (WDOE). Cleanup Levels and Risk Calculations (CLARC) Database. Online: https://fortress.wa.gov/ecy/clarc/Reporting/CLARCReporting.aspx

9) Avian and/or Mammalian EPA Eco SSL and/or ORNL PRG for soil.

Table J-7
Identification of Bioaccumulative COIs in the River OU
(1 of 3)

Chemicals of Interest	$logK_{ow}$		BCF		EPA Bioaccumualtive? (BCF>300 or Log Kow >3.5)	DEQ Bioaccumulative for Sediment and Tissue?	COI Identified as Bioaccumulative by EPA or DEQ?	HH Bioaccumulation SW SLV?	HH Bioaccumulation Sediment SLV and Tissue ATL?	Eco Surface Water SLV?[6]	Eco Bioaccumulation Sediment SLV and Tissue ATL?[6]
INORGANICS											
Aluminum	--		500	[4]	Yes		**Yes**	**No**	**No**	No	**No**
Antimony	--		100	[4]	No		No	Yes	No	No	No
Arsenic	--		300	[4]	No	Yes	**Yes**	Yes	SLV/ATL	NRWQC	SLV/ATL
Barium	--		4.00	[4]	No		No	Yes	No	No	No
Beryllium	--		100	[4]	No		No	No	No	No	No
Cadmium	--		200	[4]	No	Yes	**Yes**	**No**	SLV/ATL	NRWQC	SLV/ATL
Chromium	--		200	[4]	No		No	No	No	No	No
Cobalt	--		300	[4]	No		No	No	No	No	No
Copper	--		200	[4]	No		No	Yes	No	No	No
Lead	--		300	[4]	No	Yes	**Yes**	**No**	SLV/ATL	NRWQC	SLV/ATL
Manganese	--		400	[4]	Yes		**Yes**	Yes	**No**	No	**No**
Mercury	--		1000	[4]	Yes	Yes	**Yes**	**No**	SLV/ATL	NRWQC	SLV/ATL
Nickel	--		100	[4]	No		No	Yes	No	No	No
Selenium	--		200	[4]	No		No	Yes	SLV/ATL	Yes	SLV
Silver	--		4.00	[4]	No		No	No	No	No	No
Thallium	--		10000	[5]	Yes		**Yes**	Yes	**No**	No	**No**
Vanadium	--		NV		NV		NV	No	No	No	No
Zinc	--		1000	[4]	Yes		**Yes**	Yes	**No**	NRWQC	**No**
PCBs (as Aroclors)											
Aroclor 1242	7.10	[1]	--		Yes	Yes	**Yes**	Yes	SLV/ATL	Surrogate	SLV/ATL
Aroclor 1248	6.20	[1]	--		Yes	Yes	**Yes**	Yes	SLV/ATL	Surrogate	SLV/ATL
Aroclor 1254	6.50	[1]	--		Yes	Yes	**Yes**	Yes	SLV/ATL	Surrogate	SLV/ATL
Total PCBs (as Aroclors)	6.30	[3]	--		Yes	Yes	**Yes**	Yes	SLV/ATL	NRWQC	SLV/ATL
PCBs (as Congeners)											
3,3',4,4'-Tetrachlorobiphenyl	6.63	[1]			Yes	Yes	**Yes**	**No**	SLV/ATL	Surrogate	SLV/ATL
3,4,4',5-Tetrachlorobiphenyl	7.10	[1]	--		Yes	Yes	**Yes**	**No**	SLV/ATL	Surrogate	SLV/ATL
2,3,3',4,4'-Pentachlorobiphenyl	7.10	[1]	--		Yes	Yes	**Yes**	**No**	SLV/ATL	Surrogate	SLV/ATL
2,3,4,4',5-Pentachlorobiphenyl	7.10	[1]	--		Yes	Yes	**Yes**	**No**	SLV/ATL	Surrogate	SLV/ATL
2,3',4,4',5-Pentachlorobiphenyl	7.12	[1]	--		Yes	Yes	**Yes**	**No**	SLV/ATL	Surrogate	SLV/ATL
2,3',4,4',5'-Pentachlorobiphenyl	7.10	[1]	--		Yes	Yes	**Yes**	**No**	SLV/ATL	Surrogate	SLV/ATL
3,3',4,4',5-Pentachlorobiphenyl	7.10	[1]	--		Yes	Yes	**Yes**	**No**	SLV/ATL	Surrogate	SLV/ATL

Table J-7
Identification of Bioaccumulative COIs in the River OU
(2 of 3)

Chemicals of Interest	$logK_{ow}$		BCF		EPA Bioaccumualtive? (BCF>300 or Log Kow >3.5)	DEQ Bioaccumulative for Sediment and Tissue?	COI Identified as Bioaccumulative by EPA or DEQ?	HH Bioaccumulation SW SLV?	HH Bioaccumulation Sediment SLV and Tissue ATL?	Eco Surface Water SLV?[6]	Eco Bioaccumulation Sediment SLV and Tissue ATL?[6]
2,3,3',4,4',5-Hexachlorobiphenyl	7.60	[1]	--		Yes	Yes	**Yes**	**No**	SLV/ATL	Surrogate	SLV/ATL
2,3',4,4',5,5'-Hexachlorobiphenyl	7.50	[1]	--		Yes	Yes	**Yes**	**No**	SLV/ATL	Surrogate	SLV/ATL
3,3',4,4',5,5'-Hexachlorobiphenyl	7.41	[1]	--		Yes	Yes	**Yes**	**No**	SLV/ATL	Surrogate	SLV/ATL
2,3,3',4,4',5,5'-Heptachlorobiphenyl	7.10	[1]	--		Yes	Yes	**Yes**	**No**	SLV/ATL	Surrogate	SLV/ATL
Total PCBs (as Congeners)	6.30	[3]	--		Yes	Yes	**Yes**	Yes	SLV/ATL	NRWQC	SLV/ATL
SVOCs											
Bis(2-ethylhexyl) Phthalate	7.60	[1]	588	[4]	Yes		**Yes**	Yes	Developed ATL	No	Developed ATL
Butyl Benzyl Phthalate	4.73	[1]	16.3	[4]	Yes		**Yes**	Yes	Developed ATL	No	Developed ATL
Carbazole	3.72	[1]	--		Yes		**Yes**	**No**	**No**	No	**No**
Di-n-butyl Phthalate	4.50	[1]	89	[4]	Yes		**Yes**	Yes	Developed ATL	No	Developed ATL
Di-n-octyl Phthalate	8.54	[3]	89	[4]	Yes		**Yes**	Yes	Developed ATL	No	Developed ATL
p-cresol (4-Methylphenol)	1.94	[1]	--		No		No	No	No	No	No
PAHs											
Acenaphthene	3.92	[1]	--		Yes		**Yes**	Yes	Surrogate	No	Surrogate
Anthracene	4.45	[1]	--		Yes		**Yes**	Yes	Surrogate	No	Surrogate
Benzo(a)anthracene	5.52	[3]	--		Yes		**Yes**	Yes	Developed ATL	No	Surrogate
Benzo(a)pyrene	6.13	[1]	--		Yes		**Yes**	Yes	Developed ATL	No	Surrogate
Benzo(b)fluoranthene	5.78	[1]	--		Yes		**Yes**	Yes	Developed ATL	No	Surrogate
Benzo(g,h,i)perylene	6.63	[1]	--		Yes		**Yes**	Yes	Developed ATL	No	Surrogate
Benzo(k)fluoranthene	6.11	[1]	--		Yes		**Yes**	Yes	Developed ATL	No	Surrogate
Chrysene	5.81	[1]	--		Yes		**Yes**	Yes	Developed ATL	No	Surrogate
Dibenz(a,h)anthracene	6.75	[1]	--		Yes		**Yes**	Yes	Developed ATL	No	Surrogate
Fluoranthene	5.16	[1]	--		Yes	Yes	**Yes**	Yes	SLV/ATL	No	SLV/ATL
Fluorene	4.18	[1]	--		Yes		**Yes**	Yes	Surrogate	No	Surrogate
Indeno(1,2,3-cd)pyrene	6.70	[3]	--		Yes		**Yes**	Yes	Developed ATL	No	Surrogate
Phenanthrene	4.46	[1]	--		Yes		**Yes**	Yes	Surrogate	No	Surrogate
Pyrene	4.88	[1]	--		Yes	Yes	**Yes**	Yes	SLV/ATL	No	SLV/ATL
TPH											
Diesel Range Organics	NV		--		NV		NV	No	No	No	No
Residual Range Organics	NV		--		NV		NV	No	No	No	No

Table J-7
Identification of Bioaccumulative COIs in the River OU
(3 of 3)

Chemicals of Interest	$logK_{ow}$	BCF	EPA Bioaccumualtive? (BCF>300 or Log Kow >3.5)	DEQ Bioaccumulative for Sediment and Tissue?	COI Identified as Bioaccumulative by EPA or DEQ?	HH Bioaccumulation SW SLV?	HH Bioaccumulation Sediment SLV and Tissue ATL?	Eco Surface Water SLV?[6]	Eco Bioaccumulation Sediment SLV and Tissue ATL?[6]

Notes:
ATL = acceptable tissue level
BCF = bioconcentration factor
COI = chemical of interest
DEQ = Oregon Department of Environmental Quality
NRWQC = National recommended water quality criteria
NV = No Value
SLV = screening level value
USEPA = United States Environmental Protection Agency

1) US Environmental Protection Agency (USEPA), 2008. Estimation Programs Interface (EPI) Suite. US Environmental Protection Agency Office of Pollution Prevention and Toxics and Syracuse Research Corporation (SRC).

2) Environment Canada. http://www.ec.gc.ca/CEPARegistry/documents/subs_list/organotin/Organotins_followup_ec_P3.cfm.

3) Texas Commission of Environmental Quality (TCEQ), 2010. TRRP Protective Concentration Levels, toxicity and chemical/physical properties. Updated May 2010.

4) Oak Ridge National Laboratory's Risk Assessment Information System (RAIS) database

5) Washington Department of Ecology (WDOE). Cleanup Levels and Risk Calculations (CLARC) Database. Online: https://fortress.wa.gov/ecy/clarc/Reporting/CLARCReporting.aspx

6) See the USEPA NRWQC SLV, DEQ sediment bioaccumulative SLVs, and DEQ tissue ATLs in Appendix H-3

APPENDIX K
DATA SENSITIVITY ANALYSIS

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	Metals	Total	Antimony	0-3 ft	mg/kg	410	22	16	2	0.200	2.90	0	0.200	3.04	0
Soil	Metals	Total	Antimony	0-10 ft	mg/kg	410	36	16	4	0.200	2.90	0	0.200	3.04	0
Soil	Metals	Total	Beryllium	0-3 ft	mg/kg	610	23	6	-	0.157	0.280	0	0.270	0.467	0
Soil	Metals	Total	Beryllium	0-10 ft	mg/kg	610	37	11	9	0.155	0.280	0	0.270	0.550	0
Soil	Metals	Total	Cadmium	0-3 ft	mg/kg	150	23	6	-	0.260	0.290	0	0.260	0.290	0
Soil	Metals	Total	Cadmium	0-10 ft	mg/kg	150	37	6	-	0.260	0.290	0	0.260	0.290	0
Soil	Metals	Total	Mercury	0-3 ft	mg/kg	93	25	5	-	0.100	0.110	0	0.100	0.110	0
Soil	Metals	Total	Mercury	0-10 ft	mg/kg	93	39	5	1	0.100	0.110	0	0.0192	0.110	0
Soil	Metals	Total	Selenium	0-3 ft	mg/kg	5,100	23	18	3	0.200	1.50	0	0.200	2.02	0
Soil	Metals	Total	Selenium	0-10 ft	mg/kg	5,100	37	26	9	0.0774	1.50	0	0.200	2.02	0
Soil	Metals	Total	Silver	0-3 ft	mg/kg	1,500	23	14	2	0.200	0.570	0	0.200	2.02	0
Soil	Metals	Total	Silver	0-10 ft	mg/kg	1,500	37	14	12	0.200	0.570	0	0.200	2.02	0
Soil	Metals	Total	Thallium	0-3 ft	mg/kg	0.203	23	19	3	0.200	0.300	14	0.0970	0.506	15
Soil	Metals	Total	Thallium	0-10 ft	mg/kg	0.203	37	19	10	0.200	0.300	14	0.0970	0.951	16
Soil	Butyltins	Total	Dibutyltin	0-3 ft	ug/kg	180,000	9	7	-	0.685	0.899	0	2.13	2.79	0
Soil	Butyltins	Total	Dibutyltin	0-10 ft	ug/kg	180,000	22	20	-	0.567	7.62	0	1.76	23.7	0
Soil	Butyltins	Total	Monobutyltin	0-3 ft	ug/kg	180,000	9	7	-	1.51	1.98	0	2.84	3.73	0
Soil	Butyltins	Total	Monobutyltin	0-10 ft	ug/kg	180,000	22	20	-	1.25	16.8	0	2.35	31.6	0
Soil	Butyltins	Total	Tetrabutyltin	0-3 ft	ug/kg	180,000	9	9	-	0.529	0.694	0	1.42	1.86	0
Soil	Butyltins	Total	Tetrabutyltin	0-10 ft	ug/kg	180,000	22	22	-	0.438	5.89	0	1.18	15.8	0
Soil	Butyltins	Total	Tributyltin	0-3 ft	ug/kg	180,000	9	5	-	1.18	1.43	0	3.07	3.73	0
Soil	Butyltins	Total	Tributyltin	0-10 ft	ug/kg	180,000	22	18	-	0.903	12.1	0	2.35	31.6	0
Soil	Herbicides	Total	2,4,5-T	0-3 ft	ug/kg	6,200,000	14	12	-	1.54	50.0	0	3.10	50.0	0
Soil	Herbicides	Total	2,4,5-T	0-10 ft	ug/kg	6,200,000	21	19	-	1.46	50.0	0	3.10	50.0	0
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-3 ft	ug/kg	4,900,000	14	14	-	2.25	50.0	0	2.50	50.0	0
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-10 ft	ug/kg	4,900,000	21	21	-	2.14	50.0	0	2.50	50.0	0
Soil	Herbicides	Total	2,4-D	0-3 ft	ug/kg	2,400,000	14	14	-	0.581	50.0	0	7.04	50.0	0
Soil	Herbicides	Total	2,4-D	0-10 ft	ug/kg	2,400,000	21	21	-	0.520	50.0	0	6.70	50.0	0
Soil	Herbicides	Total	2,4-DB	0-3 ft	ug/kg	4,900,000	14	14	-	0.988	50.0	0	5.00	50.0	0
Soil	Herbicides	Total	2,4-DB	0-10 ft	ug/kg	4,900,000	21	21	-	0.939	50.0	0	5.00	50.0	0
Soil	Herbicides	Total	4-Nitrophenol	0-3 ft	ug/kg	180,000,000	3	3	-	1.56	1.81	0	7.04	8.18	0
Soil	Herbicides	Total	4-Nitrophenol	0-10 ft	ug/kg	180,000,000	10	10	-	1.48	1.81	0	6.70	8.18	0
Soil	Herbicides	Total	Dalapon	0-3 ft	ug/kg	18,000,000	14	14	-	2.15	50.0	0	7.04	50.0	0
Soil	Herbicides	Total	Dalapon	0-10 ft	ug/kg	18,000,000	21	21	-	2.04	50.0	0	6.70	50.0	0
Soil	Herbicides	Total	Dicamba	0-3 ft	ug/kg	18,000,000	14	14	-	1.71	50.0	0	2.10	50.0	0
Soil	Herbicides	Total	Dicamba	0-10 ft	ug/kg	18,000,000	21	21	-	1.63	50.0	0	2.10	50.0	0
Soil	Herbicides	Total	Dichloroprop	0-3 ft	ug/kg	4,900,000	14	12	-	0.750	400	0	7.04	400	0
Soil	Herbicides	Total	Dichloroprop	0-10 ft	ug/kg	4,900,000	21	19	-	0.713	400	0	6.70	400	0
Soil	Herbicides	Total	Dinoseb	0-3 ft	ug/kg	620,000	14	14	-	0.581	50.0	0	7.04	50.0	0
Soil	Herbicides	Total	Dinoseb	0-10 ft	ug/kg	620,000	21	21	-	0.552	50.0	0	6.70	50.0	0
Soil	Herbicides	Total	MCPA	0-3 ft	ug/kg	120,000	14	14	-	1.06	25,000	0	7.04	25,000	0
Soil	Herbicides	Total	MCPA	0-10 ft	ug/kg	120,000	21	21	-	1.01	25,000	0	6.70	25,000	0
Soil	Herbicides	Total	MCPP	0-3 ft	ug/kg	620,000	14	12	-	1.93	38,000	0	7.04	38,000	0
Soil	Herbicides	Total	MCPP	0-10 ft	ug/kg	620,000	21	19	-	1.83	38,000	0	6.70	38,000	0
Soil	Herbicides	Total	Pentachlorophenol	0-3 ft	ug/kg	13,000	3	3	-	0.822	0.955	0	7.04	8.18	0
Soil	Herbicides	Total	Pentachlorophenol	0-10 ft	ug/kg	13,000	10	10	-	0.781	0.955	0	6.70	8.18	0
Soil	Pesticides	Total	4,4'-DDD	0-3 ft	ug/kg	11,000	23	23	-	1.00	25.0	0	1.00	25.0	0
Soil	Pesticides	Total	4,4'-DDD	0-10 ft	ug/kg	11,000	30	30	-	0.214	25.0	0	1.00	25.0	0
Soil	Pesticides	Total	4,4'-DDE	0-3 ft	ug/kg	7,700	23	22	-	1.00	9.40	0	1.00	9.40	0
Soil	Pesticides	Total	4,4'-DDE	0-10 ft	ug/kg	7,700	30	29	-	0.253	9.40	0	1.00	9.40	0
Soil	Pesticides	Total	4,4'-DDT	0-3 ft	ug/kg	7,700	23	16	-	1.00	13.0	0	1.00	13.0	0
Soil	Pesticides	Total	4,4'-DDT	0-10 ft	ug/kg	7,700	30	23	-	0.285	13.0	0	1.00	13.0	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(2 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	Pesticides	Total	Aldrin	0-3 ft	ug/kg	130	23	23	-	0.970	1.90	0	0.970	1.90	0
Soil	Pesticides	Total	Aldrin	0-10 ft	ug/kg	130	30	30	-	0.474	1.90	0	0.970	1.90	0
Soil	Pesticides	Total	BHC (alpha)	0-3 ft	ug/kg	340	23	22	-	0.500	1.90	0	0.500	1.90	0
Soil	Pesticides	Total	BHC (alpha)	0-10 ft	ug/kg	340	30	29	-	0.341	1.90	0	0.500	1.90	0
Soil	Pesticides	Total	BHC (beta)	0-3 ft	ug/kg	960	23	22	-	0.900	12.0	0	0.900	12.0	0
Soil	Pesticides	Total	BHC (beta)	0-10 ft	ug/kg	960	30	29	-	0.465	12.0	0	0.900	12.0	0
Soil	Pesticides	Total	BHC (delta)	0-3 ft	ug/kg	340	23	23	-	0.600	1.90	0	0.600	1.90	0
Soil	Pesticides	Total	BHC (delta)	0-10 ft	ug/kg	340	30	30	-	0.422	1.90	0	0.600	1.90	0
Soil	Pesticides	Total	BHC (gamma) Lindane	0-3 ft	ug/kg	2,000	23	23	-	0.970	1.90	0	0.970	1.90	0
Soil	Pesticides	Total	BHC (gamma) Lindane	0-10 ft	ug/kg	2,000	30	30	-	0.420	1.90	0	0.970	1.90	0
Soil	Pesticides	Total	Chlordane (alpha)	0-3 ft	ug/kg	7,200	20	19	-	0.800	19.0	0	0.800	19.0	0
Soil	Pesticides	Total	Chlordane (alpha)	0-10 ft	ug/kg	7,200	20	19	-	0.800	19.0	0	0.800	19.0	0
Soil	Pesticides	Total	Chlordane (gamma)	0-3 ft	ug/kg	7,200	20	20	-	0.700	14.0	0	0.700	14.0	0
Soil	Pesticides	Total	Chlordane (gamma)	0-10 ft	ug/kg	7,200	20	20	-	0.700	14.0	0	0.700	14.0	0
Soil	Pesticides	Total	Chlordane (technical)	0-10 ft	ug/kg	7,200	10	4	-	1.55	11.8	0	9.94	11.8	0
Soil	Pesticides	Total	Dieldrin	0-3 ft	ug/kg	130	23	22	-	1.90	8.00	0	1.90	8.00	0
Soil	Pesticides	Total	Dieldrin	0-10 ft	ug/kg	130	30	29	-	0.360	8.00	0	1.90	8.00	0
Soil	Pesticides	Total	Endosulfan I	0-3 ft	ug/kg	1,400,000	23	23	-	0.970	3.50	0	0.970	3.50	0
Soil	Pesticides	Total	Endosulfan I	0-10 ft	ug/kg	1,400,000	30	30	-	0.468	3.50	0	0.970	3.50	0
Soil	Pesticides	Total	Endosulfan II	0-3 ft	ug/kg	1,400,000	23	22	-	1.90	4.90	0	1.90	4.90	0
Soil	Pesticides	Total	Endosulfan II	0-10 ft	ug/kg	1,400,000	30	29	-	0.425	4.90	0	1.90	4.90	0
Soil	Pesticides	Total	Endosulfan Sulfate	0-3 ft	ug/kg	1,400,000	23	22	-	1.00	8.00	0	1.00	8.00	0
Soil	Pesticides	Total	Endosulfan Sulfate	0-10 ft	ug/kg	1,400,000	30	29	-	0.400	8.00	0	1.00	8.00	0
Soil	Pesticides	Total	Endrin Aldehyde	0-3 ft	ug/kg	71,000	23	23	-	1.90	13.0	0	1.90	13.0	0
Soil	Pesticides	Total	Endrin Aldehyde	0-10 ft	ug/kg	71,000	30	30	-	0.448	13.0	0	1.90	13.0	0
Soil	Pesticides	Total	Endrin Ketone	0-3 ft	ug/kg	71,000	22	22	-	1.90	17.0	0	1.90	17.0	0
Soil	Pesticides	Total	Endrin Ketone	0-10 ft	ug/kg	71,000	29	29	-	0.309	17.0	0	1.90	17.0	0
Soil	Pesticides	Total	Endrin	0-3 ft	ug/kg	71,000	23	23	-	1.90	10.0	0	1.90	10.0	0
Soil	Pesticides	Total	Endrin	0-10 ft	ug/kg	71,000	30	30	-	0.397	10.0	0	1.90	10.0	0
Soil	Pesticides	Total	Heptachlor Epoxide	0-3 ft	ug/kg	240	23	22	-	0.970	7.10	0	0.970	7.10	0
Soil	Pesticides	Total	Heptachlor Epoxide	0-10 ft	ug/kg	240	30	29	-	0.401	7.10	0	0.970	7.10	0
Soil	Pesticides	Total	Heptachlor	0-3 ft	ug/kg	480	23	21	-	0.970	1.90	0	0.970	1.90	0
Soil	Pesticides	Total	Heptachlor	0-10 ft	ug/kg	480	30	28	-	0.378	1.90	0	0.970	1.90	0
Soil	Pesticides	Total	Methoxychlor	0-3 ft	ug/kg	3,100,000	23	23	-	4.00	19.0	0	4.00	19.0	0
Soil	Pesticides	Total	Methoxychlor	0-10 ft	ug/kg	3,100,000	30	30	-	1.51	19.0	0	4.00	19.0	0
Soil	Pesticides	Total	Toxaphene	0-3 ft	ug/kg	2,000	23	23	-	34.0	190	0	34.0	190	0
Soil	Pesticides	Total	Toxaphene	0-10 ft	ug/kg	2,000	30	30	-	6.89	190	0	34.0	190	0
Soil	PCB Aroclors	Total	Aroclor 1016	0-3 ft	ug/kg	21,000	29	29	-	1.14	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1016	0-10 ft	ug/kg	21,000	43	43	-	1.10	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1221	0-3 ft	ug/kg	540	29	29	-	3.80	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1221	0-10 ft	ug/kg	540	43	43	-	3.80	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1232	0-3 ft	ug/kg	540	29	29	-	3.80	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1232	0-10 ft	ug/kg	540	43	43	-	3.77	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1242	0-3 ft	ug/kg	740	29	29	-	2.09	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1242	0-10 ft	ug/kg	740	43	43	-	2.01	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1248	0-3 ft	ug/kg	740	29	27	-	3.80	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1248	0-10 ft	ug/kg	740	43	41	-	3.80	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1254	0-3 ft	ug/kg	740	29	18	-	1.77	50.0	0	4.00	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1254	0-10 ft	ug/kg	740	43	27	-	1.62	50.0	0	4.00	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1260	0-3 ft	ug/kg	740	29	5	-	35.0	50.0	0	35.0	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1260	0-10 ft	ug/kg	740	43	7	2	1.62	50.0	0	10.4	50.0	0
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-3 ft	ug/kg	740	29	5	-	105	150	0	105	150	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(3 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-10 ft	ug/kg	740	43	7	-	8.42	150	0	31.2	150	0
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-3 ft	mg/kg	23,000	20	1	-	25.0	25.0	0	25.0	25.0	0
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-10 ft	mg/kg	23,000	34	4	1	12.3	25.0	0	25.0	28.9	0
Soil	NWTPH-Dx	Total	Residual Range Organics	0-3 ft	mg/kg	40,000	20	1	-	100	100	0	100	100	0
Soil	NWTPH-Dx	Total	Residual Range Organics	0-10 ft	mg/kg	40,000	34	2	1	25.5	100	0	51.1	100	0
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-3 ft	mg/kg	13,000	15	11	1	4.31	20.0	0	4.31	20.0	0
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-10 ft	mg/kg	13,000	22	16	3	4.08	20.0	0	4.02	20.0	0
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	ug/kg	99,000	28	28	-	11.8	190	0	20.0	1,680	0
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-10 ft	ug/kg	99,000	35	35	-	11.0	190	0	20.0	1,680	0
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-3 ft	ug/kg	9,800,000	28	28	-	14.6	190	0	20.0	1,680	0
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-10 ft	ug/kg	9,800,000	35	35	-	13.6	190	0	20.0	1,680	0
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-3 ft	ug/kg	36,000	28	28	-	19.9	236	0	20.0	1,680	0
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-10 ft	ug/kg	36,000	35	35	-	18.5	236	0	20.0	1,680	0
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-3 ft	ug/kg	36,000	28	28	-	20.0	269	0	20.0	1,680	0
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-10 ft	ug/kg	36,000	35	35	-	20.0	269	0	20.0	1,680	0
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-3 ft	ug/kg	62,000,000	29	29	-	19.5	930	0	49.8	1,680	0
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-10 ft	ug/kg	62,000,000	36	36	-	19.5	930	0	49.8	1,680	0
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-3 ft	ug/kg	200,000	29	29	-	18.9	300	0	49.8	1,680	0
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-10 ft	ug/kg	200,000	36	36	-	17.6	300	0	49.8	1,680	0
Soil	SVOCs	Total	2,4-Dichlorophenol	0-3 ft	ug/kg	1,800,000	29	29	-	15.6	300	0	49.8	1,680	0
Soil	SVOCs	Total	2,4-Dichlorophenol	0-10 ft	ug/kg	1,800,000	36	36	-	14.5	300	0	49.8	1,680	0
Soil	SVOCs	Total	2,4-Dimethylphenol	0-3 ft	ug/kg	12,000,000	29	29	-	15.6	190	0	20.0	1,680	0
Soil	SVOCs	Total	2,4-Dimethylphenol	0-10 ft	ug/kg	12,000,000	36	36	-	14.5	190	0	20.0	1,680	0
Soil	SVOCs	Total	2,4-Dinitrophenol	0-3 ft	ug/kg	1,200,000	25	25	-	34.1	930	0	200	4,210	0
Soil	SVOCs	Total	2,4-Dinitrophenol	0-10 ft	ug/kg	1,200,000	32	32	-	17.1	930	0	200	4,210	0
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-3 ft	ug/kg	5,500	28	28	-	18.5	366	0	98.0	1,680	0
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-10 ft	ug/kg	5,500	35	35	-	17.2	366	0	98.0	1,680	0
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-3 ft	ug/kg	240,000	28	28	-	25.6	303	0	98.0	1,680	0
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-10 ft	ug/kg	240,000	35	35	-	23.8	303	0	98.0	1,680	0
Soil	SVOCs	Total	2-Chloronaphthalene	0-3 ft	ug/kg	82,000,000	28	28	-	4.27	190	0	14.2	190	0
Soil	SVOCs	Total	2-Chloronaphthalene	0-10 ft	ug/kg	82,000,000	35	35	-	3.97	190	0	13.2	190	0
Soil	SVOCs	Total	2-Chlorophenol	0-3 ft	ug/kg	5,100,000	29	29	-	20.0	252	0	20.0	1,680	0
Soil	SVOCs	Total	2-Chlorophenol	0-10 ft	ug/kg	5,100,000	36	36	-	19.8	252	0	20.0	1,680	0
Soil	SVOCs	Total	2-Methylphenol	0-3 ft	ug/kg	31,000,000	29	29	-	17.1	202	0	20.0	1,680	0
Soil	SVOCs	Total	2-Methylphenol	0-10 ft	ug/kg	31,000,000	36	36	-	15.9	202	0	20.0	1,680	0
Soil	SVOCs	Total	2-Nitroaniline	0-3 ft	ug/kg	6,000,000	28	28	-	18.5	930	0	98.0	1,680	0
Soil	SVOCs	Total	2-Nitroaniline	0-10 ft	ug/kg	6,000,000	35	35	-	17.1	930	0	98.0	1,680	0
Soil	SVOCs	Total	2-Nitrophenol	0-3 ft	ug/kg	180,000,000	29	29	-	19.9	300	0	49.8	1,680	0
Soil	SVOCs	Total	2-Nitrophenol	0-10 ft	ug/kg	180,000,000	36	36	-	18.5	300	0	49.8	1,680	0
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-3 ft	ug/kg	4,800	28	28	-	15.6	2,490	0	98.0	2,490	0
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-10 ft	ug/kg	4,800	35	35	-	14.5	2,490	0	98.0	2,490	0
Soil	SVOCs	Total	3-Nitroaniline	0-3 ft	ug/kg	6,000,000	28	28	-	24.2	930	0	98.0	1,680	0
Soil	SVOCs	Total	3-Nitroaniline	0-10 ft	ug/kg	6,000,000	35	35	-	22.5	930	0	98.0	1,680	0
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-3 ft	ug/kg	49,000	25	25	-	52.6	930	0	200	4,210	0
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-10 ft	ug/kg	49,000	32	32	-	24.6	930	0	200	4,210	0
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-3 ft	ug/kg	NV	28	28	-	18.9	224	-	20.0	1,680	-
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-10 ft	ug/kg	NV	35	35	-	17.6	224	-	20.0	1,680	-
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-3 ft	ug/kg	62,000,000	29	29	-	15.6	300	0	49.8	1,680	0
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-10 ft	ug/kg	62,000,000	36	36	-	14.5	300	0	49.8	1,680	0
Soil	SVOCs	Total	4-Chloroaniline	0-3 ft	ug/kg	8,600	28	28	-	13.2	300	0	98.0	1,680	0
Soil	SVOCs	Total	4-Chloroaniline	0-10 ft	ug/kg	8,600	35	35	-	12.3	300	0	98.0	1,680	0
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-3 ft	ug/kg	NV	28	28	-	20.0	283	-	20.0	1,680	-

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(4 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-10 ft	ug/kg	NV	35	35	-	20.0	283	-	20.0	1,680	-
Soil	SVOCs	Total	4-Nitroaniline	0-3 ft	ug/kg	86,000	28	28	-	24.2	930	0	98.0	1,680	0
Soil	SVOCs	Total	4-Nitroaniline	0-10 ft	ug/kg	86,000	35	35	-	22.5	930	0	98.0	1,680	0
Soil	SVOCs	Total	4-Nitrophenol	0-3 ft	ug/kg	180,000,000	29	29	-	27.0	930	0	98.0	4,210	0
Soil	SVOCs	Total	4-Nitrophenol	0-10 ft	ug/kg	180,000,000	36	36	-	25.1	930	0	98.0	4,210	0
Soil	SVOCs	Total	Aniline	0-3 ft	ug/kg	300,000	19	19	-	38.4	454	0	49.8	1,680	0
Soil	SVOCs	Total	Aniline	0-10 ft	ug/kg	300,000	26	26	-	35.7	454	0	49.8	1,680	0
Soil	SVOCs	Total	Benzidine	0-3 ft	ug/kg	55,000	18	18	-	26.9	1,800	0	355	4,210	0
Soil	SVOCs	Total	Benzidine	0-10 ft	ug/kg	55,000	25	25	-	25.0	1,800	0	330	4,210	0
Soil	SVOCs	Total	Benzoic Acid	0-3 ft	ug/kg	2,500,000,000	25	16	4	200	930	0	200	4,210	0
Soil	SVOCs	Total	Benzoic Acid	0-10 ft	ug/kg	2,500,000,000	32	22	5	44.9	930	0	200	4,210	0
Soil	SVOCs	Total	Benzyl Alcohol	0-3 ft	ug/kg	62,000,000	29	28	1	20.0	353	0	20.0	1,680	0
Soil	SVOCs	Total	Benzyl Alcohol	0-10 ft	ug/kg	62,000,000	36	35	1	20.0	353	0	20.0	1,680	0
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-3 ft	ug/kg	1,800,000	28	28	-	17.1	202	0	20.0	1,680	0
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-10 ft	ug/kg	1,800,000	35	35	-	15.9	202	0	20.0	1,680	0
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-3 ft	ug/kg	1,000	28	28	-	20.0	321	0	20.0	1,680	2
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-10 ft	ug/kg	1,000	35	35	-	20.0	321	0	20.0	1,680	2
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-3 ft	ug/kg	1,000	28	28	-	20.0	438	0	20.0	1,680	2
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-10 ft	ug/kg	1,000	35	35	-	20.0	438	0	20.0	1,680	2
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-3 ft	ug/kg	150,000	29	3	-	50.0	690	0	50.0	4,210	0
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-10 ft	ug/kg	150,000	36	3	2	50.0	690	0	50.0	4,210	0
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-3 ft	ug/kg	910,000	28	25	2	20.0	320	0	20.0	1,680	0
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-10 ft	ug/kg	910,000	35	30	3	20.0	320	0	20.0	1,680	0
Soil	SVOCs	Total	Carbazole	0-3 ft	ug/kg	1,000,000	29	8	3	20.0	180	0	20.0	180	0
Soil	SVOCs	Total	Carbazole	0-10 ft	ug/kg	1,000,000	36	10	3	5.28	180	0	13.5	180	0
Soil	SVOCs	Total	Dibenzofuran	0-3 ft	ug/kg	1,000,000	29	16	6	20.0	195	0	20.0	1,680	0
Soil	SVOCs	Total	Dibenzofuran	0-10 ft	ug/kg	1,000,000	36	18	9	15.7	195	0	20.0	1,680	0
Soil	SVOCs	Total	Diethyl Phthalate	0-3 ft	ug/kg	490,000,000	28	23	3	20.0	286	0	20.0	1,680	0
Soil	SVOCs	Total	Diethyl Phthalate	0-10 ft	ug/kg	490,000,000	35	29	4	20.0	286	0	20.0	1,680	0
Soil	SVOCs	Total	Dimethyl Phthalate	0-3 ft	ug/kg	150,000	28	28	-	15.6	190	0	20.0	1,680	0
Soil	SVOCs	Total	Dimethyl Phthalate	0-10 ft	ug/kg	150,000	35	35	-	14.5	190	0	20.0	1,680	0
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-3 ft	ug/kg	62,000,000	28	24	1	20.0	1,460	0	20.0	8,420	0
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-10 ft	ug/kg	62,000,000	35	31	1	20.0	1,460	0	20.0	8,420	0
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-3 ft	ug/kg	150,000	28	28	-	20.0	730	0	20.0	1,680	0
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-10 ft	ug/kg	150,000	35	35	-	20.0	730	0	20.0	1,680	0
Soil	SVOCs	Total	Hexachlorobenzene	0-3 ft	ug/kg	1,800	28	28	-	15.6	190	0	20.0	1,680	0
Soil	SVOCs	Total	Hexachlorobenzene	0-10 ft	ug/kg	1,800	35	35	-	13.4	190	0	20.0	1,680	0
Soil	SVOCs	Total	Hexachlorobutadiene	0-3 ft	ug/kg	22,000	28	28	-	12.8	190	0	20.0	1,680	0
Soil	SVOCs	Total	Hexachlorobutadiene	0-10 ft	ug/kg	22,000	35	35	-	11.9	190	0	20.0	1,680	0
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-3 ft	ug/kg	3,700,000	28	28	-	20.0	300	0	98.0	1,680	0
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-10 ft	ug/kg	3,700,000	35	35	-	16.6	300	0	98.0	1,680	0
Soil	SVOCs	Total	Hexachloroethane	0-3 ft	ug/kg	150,000	28	28	-	20.0	320	0	20.0	1,680	0
Soil	SVOCs	Total	Hexachloroethane	0-10 ft	ug/kg	150,000	35	35	-	16.4	320	0	20.0	1,680	0
Soil	SVOCs	Total	Isophorone	0-3 ft	ug/kg	1,800,000	28	28	-	19.9	236	0	20.0	1,680	0
Soil	SVOCs	Total	Isophorone	0-10 ft	ug/kg	1,800,000	35	35	-	18.5	236	0	20.0	1,680	0
Soil	SVOCs	Total	Nitrobenzene	0-3 ft	ug/kg	24,000	28	28	-	19.5	231	0	20.0	1,680	0
Soil	SVOCs	Total	Nitrobenzene	0-10 ft	ug/kg	24,000	35	35	-	18.1	231	0	20.0	1,680	0
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-3 ft	ug/kg	34	24	24	-	15.6	300	21	98.0	4,210	24
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-10 ft	ug/kg	34	31	31	-	10.8	300	21	98.0	4,210	31
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-3 ft	ug/kg	250	28	28	-	15.6	300	1	49.8	1,680	3
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-10 ft	ug/kg	250	35	35	-	14.5	300	1	49.8	1,680	3
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-3 ft	ug/kg	350,000	25	25	-	11.4	190	0	20.0	1,680	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(5 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-10 ft	ug/kg	350,000	32	32	-	10.6	190	0	20.0	1,680	0
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-3 ft	ug/kg	3,100,000	29	28	1	20.0	249	0	20.0	1,680	0
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-10 ft	ug/kg	3,100,000	36	35	1	19.6	249	0	20.0	1,680	0
Soil	SVOCs	Total	Pentachlorophenol	0-3 ft	ug/kg	13,000	29	27	-	29.9	900	0	98.0	1,680	0
Soil	SVOCs	Total	Pentachlorophenol	0-10 ft	ug/kg	13,000	36	34	-	27.8	900	0	98.0	1,680	0
Soil	SVOCs	Total	Phenol	0-3 ft	ug/kg	180,000,000	29	29	-	20.0	337	0	20.0	1,680	0
Soil	SVOCs	Total	Phenol	0-10 ft	ug/kg	180,000,000	36	36	-	20.0	337	0	20.0	1,680	0
Soil	SVOCs	Total	2-Methylnaphthalene	0-3 ft	ug/kg	4,100,000	29	20	1	2.22	190	0	14.2	190	0
Soil	SVOCs	Total	2-Methylnaphthalene	0-10 ft	ug/kg	4,100,000	36	24	1	2.06	190	0	13.2	190	0
Soil	SVOCs	Total	Acenaphthene	0-3 ft	ug/kg	19,000,000	33	8	2	20.0	180	0	20.0	180	0
Soil	SVOCs	Total	Acenaphthene	0-10 ft	ug/kg	19,000,000	44	10	2	6.80	180	0	14.7	1,440	0
Soil	SVOCs	Total	Acenaphthylene	0-3 ft	ug/kg	23,000	33	20	-	20.0	190	0	20.0	190	0
Soil	SVOCs	Total	Acenaphthylene	0-10 ft	ug/kg	23,000	44	25	-	5.90	190	0	13.5	190	0
Soil	SVOCs	Total	Anthracene	0-3 ft	ug/kg	93,000,000	33	4	1	49.8	180	0	20.0	180	0
Soil	SVOCs	Total	Anthracene	0-10 ft	ug/kg	93,000,000	44	5	1	3.70	180	0	14.7	180	0
Soil	SVOCs	Total	Benzo(a)anthracene	0-3 ft	ug/kg	2,700	33	2	-	49.8	92.9	0	49.8	305	0
Soil	SVOCs	Total	Benzo(a)anthracene	0-10 ft	ug/kg	2,700	44	2	-	49.8	92.9	0	49.8	305	0
Soil	SVOCs	Total	Benzo(a)pyrene	0-3 ft	ug/kg	270	33	2	-	35.5	49.8	0	49.8	152	0
Soil	SVOCs	Total	Benzo(a)pyrene	0-10 ft	ug/kg	270	44	2	-	35.5	49.8	0	49.8	152	0
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-3 ft	ug/kg	2,700	28	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-10 ft	ug/kg	2,700	28	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-3 ft	ug/kg	27,000	33	3	-	25.1	49.8	0	49.8	168	0
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-10 ft	ug/kg	27,000	44	3	-	25.1	49.8	0	49.8	168	0
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-3 ft	ug/kg	27,000	28	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-10 ft	ug/kg	27,000	28	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Chrysene	0-3 ft	ug/kg	270,000	33	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Chrysene	0-10 ft	ug/kg	270,000	44	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-3 ft	ug/kg	270	33	5	1	35.5	1,800	1	20.0	1,800	1
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-10 ft	ug/kg	270	44	8	1	3.08	1,800	1	13.2	1,800	1
Soil	SVOCs	Total	Fluoranthene	0-3 ft	ug/kg	8,900,000	33	2	-	49.8	71.1	0	49.8	152	0
Soil	SVOCs	Total	Fluoranthene	0-10 ft	ug/kg	8,900,000	44	2	-	49.8	71.1	0	49.8	152	0
Soil	SVOCs	Total	Fluorene	0-3 ft	ug/kg	12,000,000	33	11	3	20.0	180	0	20.0	180	0
Soil	SVOCs	Total	Fluorene	0-10 ft	ug/kg	12,000,000	44	12	3	6.86	180	0	14.7	180	0
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-3 ft	ug/kg	2,700	33	3	-	35.5	49.8	0	49.8	168	0
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-10 ft	ug/kg	2,700	44	3	-	35.5	49.8	0	49.8	168	0
Soil	SVOCs	Total	Naphthalene	0-3 ft	ug/kg	23,000	33	16	-	20.0	190	0	20.0	190	0
Soil	SVOCs	Total	Naphthalene	0-10 ft	ug/kg	23,000	44	20	-	6.34	190	0	13.5	190	0
Soil	SVOCs	Total	Phenanthrene	0-3 ft	ug/kg	93,000,000	33	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Phenanthrene	0-10 ft	ug/kg	93,000,000	44	2	-	2.93	49.8	0	49.8	11,400	0
Soil	SVOCs	Total	Pyrene	0-3 ft	ug/kg	6,700,000	33	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Pyrene	0-10 ft	ug/kg	6,700,000	44	1	-	49.8	49.8	0	49.8	49.8	0
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-3 ft	ug/kg	9,300	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-10 ft	ug/kg	9,300	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-3 ft	ug/kg	38,000,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-10 ft	ug/kg	38,000,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-3 ft	ug/kg	2,800	20	20	-	0.212	2,300	0	0.424	4,600	1
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-10 ft	ug/kg	2,800	27	27	-	0.174	2,300	0	0.349	4,600	1
Soil	VOCs	Total	1,1,2-Trichloroethane	0-3 ft	ug/kg	24,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,1,2-Trichloroethane	0-10 ft	ug/kg	24,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	1,1-Dichloroethane	0-3 ft	ug/kg	240,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,1-Dichloroethane	0-10 ft	ug/kg	240,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	1,1-Dichloroethene	0-3 ft	ug/kg	1,100,000	20	20	-	0.212	2,300	0	0.424	4,600	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(6 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	VOCs	Total	1,1-Dichloroethene	0-10 ft	ug/kg	1,100,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	1,1-Dichloropropene	0-3 ft	ug/kg	8,100	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,1-Dichloropropene	0-10 ft	ug/kg	8,100	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-3 ft	ug/kg	490,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-10 ft	ug/kg	490,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	1,2,3-Trichloropropane	0-3 ft	ug/kg	95	20	20	-	0.212	2,300	4	0.424	4,600	4
Soil	VOCs	Total	1,2,3-Trichloropropane	0-10 ft	ug/kg	95	27	27	-	0.174	2,300	4	0.349	4,600	4
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	ug/kg	99,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-10 ft	ug/kg	99,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-3 ft	ug/kg	980,000	20	17	-	0.212	100	0	0.424	100	0
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-10 ft	ug/kg	980,000	27	23	1	0.174	100	0	0.349	100	0
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-3 ft	ug/kg	69	20	20	-	0.212	2,300	4	0.424	4,600	4
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-10 ft	ug/kg	69	27	27	-	0.174	2,300	4	0.349	4,600	4
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-3 ft	ug/kg	650	20	20	-	0.212	2,300	1	0.424	4,600	1
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-10 ft	ug/kg	650	27	27	-	0.174	2,300	1	0.349	4,600	1
Soil	VOCs	Total	1,2-Dichlorobenzene	0-3 ft	ug/kg	9,800,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,2-Dichlorobenzene	0-10 ft	ug/kg	9,800,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-3 ft	ug/kg	15,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-10 ft	ug/kg	15,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	1,2-Dichloropropane	0-3 ft	ug/kg	4,500	20	20	-	0.212	2,300	0	0.424	4,600	1
Soil	VOCs	Total	1,2-Dichloropropane	0-10 ft	ug/kg	4,500	27	27	-	0.174	2,300	0	0.349	4,600	1
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-3 ft	ug/kg	1,500,000	20	17	2	0.212	100	0	0.424	509	0
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-10 ft	ug/kg	1,500,000	27	24	2	0.174	100	0	0.349	509	0
Soil	VOCs	Total	1,3-Dichlorobenzene	0-3 ft	ug/kg	36,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,3-Dichlorobenzene	0-10 ft	ug/kg	36,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	1,3-Dichloropropane	0-3 ft	ug/kg	20,000,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,3-Dichloropropane	0-10 ft	ug/kg	20,000,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	1,4-Dichlorobenzene	0-3 ft	ug/kg	36,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,4-Dichlorobenzene	0-10 ft	ug/kg	36,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	2,2-Dichloropropane	0-3 ft	ug/kg	4,500	20	20	-	0.212	2,300	0	0.424	4,600	1
Soil	VOCs	Total	2,2-Dichloropropane	0-10 ft	ug/kg	4,500	27	27	-	0.174	2,300	0	0.349	4,600	1
Soil	VOCs	Total	2-Butanone (MEK)	0-3 ft	ug/kg	200,000,000	20	20	-	1.06	11,500	0	2.12	23,000	0
Soil	VOCs	Total	2-Butanone (MEK)	0-10 ft	ug/kg	200,000,000	27	27	-	0.872	11,500	0	1.74	23,000	0
Soil	VOCs	Total	2-Chlorotoluene	0-3 ft	ug/kg	20,000,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	2-Chlorotoluene	0-10 ft	ug/kg	20,000,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	2-Hexanone	0-3 ft	ug/kg	1,400,000	20	20	-	1.06	11,500	0	2.12	23,000	0
Soil	VOCs	Total	2-Hexanone	0-10 ft	ug/kg	1,400,000	27	27	-	0.872	11,500	0	1.74	23,000	0
Soil	VOCs	Total	4-Chlorotoluene	0-3 ft	ug/kg	72,000,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	4-Chlorotoluene	0-10 ft	ug/kg	72,000,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	4-Isopropyltoluene	0-3 ft	ug/kg	24,000,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	4-Isopropyltoluene	0-10 ft	ug/kg	24,000,000	27	26	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-3 ft	ug/kg	53,000,000	20	20	-	1.06	11,500	0	2.12	23,000	0
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-10 ft	ug/kg	53,000,000	27	27	-	0.872	11,500	0	1.74	23,000	0
Soil	VOCs	Total	Acetone	0-3 ft	ug/kg	630,000,000	20	20	-	1.06	11,500	0	2.12	23,000	0
Soil	VOCs	Total	Acetone	0-10 ft	ug/kg	630,000,000	27	27	-	0.872	11,500	0	1.74	23,000	0
Soil	VOCs	Total	Benzene	0-3 ft	ug/kg	34,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Benzene	0-10 ft	ug/kg	34,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Bromobenzene	0-3 ft	ug/kg	1,800,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Bromobenzene	0-10 ft	ug/kg	1,800,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Bromochloromethane	0-3 ft	ug/kg	11,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Bromochloromethane	0-10 ft	ug/kg	11,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Bromodichloromethane	0-3 ft	ug/kg	11,000	20	20	-	0.212	2,300	0	0.424	4,600	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	VOCs	Total	Bromodichloromethane	0-10 ft	ug/kg	11,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Bromoform	0-3 ft	ug/kg	360,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Bromoform	0-10 ft	ug/kg	360,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Bromomethane	0-3 ft	ug/kg	330,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Bromomethane	0-10 ft	ug/kg	330,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Carbon Disulfide	0-3 ft	ug/kg	3,700,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Carbon Disulfide	0-10 ft	ug/kg	3,700,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Carbon Tetrachloride	0-3 ft	ug/kg	15,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Carbon Tetrachloride	0-10 ft	ug/kg	15,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Chlorobenzene	0-3 ft	ug/kg	1,400,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Chlorobenzene	0-10 ft	ug/kg	1,400,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Chloroethane	0-3 ft	ug/kg	61,000,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Chloroethane	0-10 ft	ug/kg	61,000,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Chloroform	0-3 ft	ug/kg	17,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Chloroform	0-10 ft	ug/kg	17,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Chloromethane	0-3 ft	ug/kg	500,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Chloromethane	0-10 ft	ug/kg	500,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-3 ft	ug/kg	3,100,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-10 ft	ug/kg	3,100,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-3 ft	ug/kg	8,100	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-10 ft	ug/kg	8,100	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Dibromochloromethane	0-3 ft	ug/kg	34,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Dibromochloromethane	0-10 ft	ug/kg	34,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Dibromomethane	0-3 ft	ug/kg	110,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Dibromomethane	0-10 ft	ug/kg	110,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Dichlorodifluoromethane	0-3 ft	ug/kg	780,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Dichlorodifluoromethane	0-10 ft	ug/kg	780,000	27	26	1	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-3 ft	ug/kg	310,000	20	19	-	0.212	2,300	0	0.674	4,600	0
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-10 ft	ug/kg	310,000	27	26	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Ethylbenzene	0-3 ft	ug/kg	140,000	20	19	1	0.212	255	0	0.424	4,600	0
Soil	VOCs	Total	Ethylbenzene	0-10 ft	ug/kg	140,000	27	25	2	0.174	255	0	0.349	4,600	0
Soil	VOCs	Total	Hexachlorobutadiene	0-3 ft	ug/kg	22,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Hexachlorobutadiene	0-10 ft	ug/kg	22,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Isopropylbenzene	0-3 ft	ug/kg	11,000,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Isopropylbenzene	0-10 ft	ug/kg	11,000,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	m,p-Xylenes	0-3 ft	ug/kg	2,700,000	20	19	-	0.424	509	0	0.849	1,020	0
Soil	VOCs	Total	m,p-Xylenes	0-10 ft	ug/kg	2,700,000	27	25	1	0.242	509	0	0.698	1,020	0
Soil	VOCs	Total	Naphthalene	0-3 ft	ug/kg	23,000	20	17	-	0.212	100	0	0.424	100	0
Soil	VOCs	Total	Naphthalene	0-10 ft	ug/kg	23,000	27	24	-	0.192	100	0	0.383	100	0
Soil	VOCs	Total	n-Butylbenzene	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	n-Butylbenzene	0-10 ft	ug/kg	NV	27	27	-	0.174	2,300	-	0.349	4,600	-
Soil	VOCs	Total	n-Propylbenzene	0-3 ft	ug/kg	21,000,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	n-Propylbenzene	0-10 ft	ug/kg	21,000,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	o-Xylene	0-3 ft	ug/kg	19,000,000	24	24	-	0.0590	255	0	0.424	509	0
Soil	VOCs	Total	o-Xylene	0-10 ft	ug/kg	19,000,000	35	32	2	0.0590	255	0	0.349	4,600	0
Soil	VOCs	Total	sec-Butylbenzene	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	sec-Butylbenzene	0-10 ft	ug/kg	NV	27	27	-	0.174	2,300	-	0.349	4,600	-
Soil	VOCs	Total	Styrene	0-3 ft	ug/kg	36,000,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Styrene	0-10 ft	ug/kg	36,000,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	tert-Butylbenzene	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	tert-Butylbenzene	0-10 ft	ug/kg	NV	27	27	-	0.174	2,300	-	0.349	4,600	-
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-3 ft	ug/kg	5,100	24	10	3	2.10	255	0	2.10	509	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-10 ft	ug/kg	5,100	35	10	3	2.10	255	0	2.10	509	0
Soil	VOCs	Total	Toluene	0-3 ft	ug/kg	24,000,000	24	14	9	0.212	255	0	0.424	509	0
Soil	VOCs	Total	Toluene	0-10 ft	ug/kg	24,000,000	35	16	13	0.208	255	0	0.349	509	0
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-3 ft	ug/kg	690,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-10 ft	ug/kg	690,000	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-3 ft	ug/kg	8,100	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-10 ft	ug/kg	8,100	27	27	-	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Trichloroethene (TCE)	0-3 ft	ug/kg	3,900	20	20	-	0.212	2,300	0	0.424	4,600	3
Soil	VOCs	Total	Trichloroethene (TCE)	0-10 ft	ug/kg	3,900	27	27	-	0.174	2,300	0	0.349	4,600	3
Soil	VOCs	Total	Trichlorofluoromethane	0-3 ft	ug/kg	3,400,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Trichlorofluoromethane	0-10 ft	ug/kg	3,400,000	27	26	1	0.174	2,300	0	0.349	4,600	0
Soil	VOCs	Total	Vinyl Acetate	0-3 ft	ug/kg	4,100,000	19	19	-	1.06	11,500	0	2.12	23,000	0
Soil	VOCs	Total	Vinyl Acetate	0-10 ft	ug/kg	4,100,000	26	26	-	0.872	11,500	0	1.74	23,000	0
Soil	VOCs	Total	Vinyl Chloride	0-3 ft	ug/kg	3,900	20	20	-	0.212	2,300	0	0.424	4,600	1
Soil	VOCs	Total	Vinyl Chloride	0-10 ft	ug/kg	3,900	27	27	-	0.174	2,300	0	0.349	4,600	1
MW Soil Subset	Metals	Total	Antimony	0-1 ft	mg/kg	410	9	9	-	0.200	0.300	0	0.200	0.300	0
MW Soil Subset	Metals	Total	Selenium	0-1 ft	mg/kg	5,100	10	8	-	0.200	0.300	0	0.200	0.300	0
MW Soil Subset	Metals	Total	Silver	0-1 ft	mg/kg	1,500	10	5	-	0.200	0.300	0	0.200	0.300	0
MW Soil Subset	Metals	Total	Thallium	0-1 ft	mg/kg	0.203	10	9	-	0.200	0.300	4	0.200	0.300	4
MW Soil Subset	Herbicides	Total	2,4,5-T	0-1 ft	ug/kg	6,200,000	1	1	-	50.0	50.0	0	50.0	50.0	0
MW Soil Subset	Herbicides	Total	2,4,5-TP (Silvex)	0-1 ft	ug/kg	4,900,000	1	1	-	50.0	50.0	0	50.0	50.0	0
MW Soil Subset	Herbicides	Total	2,4-D	0-1 ft	ug/kg	2,400,000	1	1	-	50.0	50.0	0	50.0	50.0	0
MW Soil Subset	Herbicides	Total	2,4-DB	0-1 ft	ug/kg	4,900,000	1	1	-	50.0	50.0	0	50.0	50.0	0
MW Soil Subset	Herbicides	Total	Dalapon	0-1 ft	ug/kg	18,000,000	1	1	-	50.0	50.0	0	50.0	50.0	0
MW Soil Subset	Herbicides	Total	Dicamba	0-1 ft	ug/kg	18,000,000	1	1	-	50.0	50.0	0	50.0	50.0	0
MW Soil Subset	Herbicides	Total	Dichloroprop	0-1 ft	ug/kg	4,900,000	1	1	-	50.0	50.0	0	50.0	50.0	0
MW Soil Subset	Herbicides	Total	Dinoseb	0-1 ft	ug/kg	620,000	1	1	-	50.0	50.0	0	50.0	50.0	0
MW Soil Subset	Herbicides	Total	MCPA	0-1 ft	ug/kg	120,000	1	1	-	25,000	25,000	0	25,000	25,000	0
MW Soil Subset	Herbicides	Total	MCPP	0-1 ft	ug/kg	620,000	1	1	-	25,000	25,000	0	25,000	25,000	0
MW Soil Subset	Pesticides	Total	4,4'-DDD	0-1 ft	ug/kg	11,000	10	10	-	1.00	3.80	0	1.00	3.80	0
MW Soil Subset	Pesticides	Total	4,4'-DDE	0-1 ft	ug/kg	7,700	10	10	-	1.00	3.80	0	1.00	3.80	0
MW Soil Subset	Pesticides	Total	4,4'-DDT	0-1 ft	ug/kg	7,700	10	3	-	1.00	5.00	0	1.00	5.00	0
MW Soil Subset	Pesticides	Total	Aldrin	0-1 ft	ug/kg	130	10	10	-	0.970	1.90	0	0.970	1.90	0
MW Soil Subset	Pesticides	Total	BHC (alpha)	0-1 ft	ug/kg	340	10	10	-	0.500	1.90	0	0.500	1.90	0
MW Soil Subset	Pesticides	Total	BHC (beta)	0-1 ft	ug/kg	960	10	10	-	0.900	12.0	0	0.900	12.0	0
MW Soil Subset	Pesticides	Total	BHC (delta)	0-1 ft	ug/kg	340	10	10	-	0.600	1.90	0	0.600	1.90	0
MW Soil Subset	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	ug/kg	2,000	10	10	-	0.970	1.90	0	0.970	1.90	0
MW Soil Subset	Pesticides	Total	Chlordane (alpha)	0-1 ft	ug/kg	7,200	10	10	-	0.800	5.50	0	0.800	5.50	0
MW Soil Subset	Pesticides	Total	Chlordane (gamma)	0-1 ft	ug/kg	7,200	10	10	-	0.700	14.0	0	0.700	14.0	0
MW Soil Subset	Pesticides	Total	Dieldrin	0-1 ft	ug/kg	130	10	9	-	1.90	8.00	0	1.90	8.00	0
MW Soil Subset	Pesticides	Total	Endosulfan I	0-1 ft	ug/kg	1,400,000	10	10	-	0.970	1.90	0	0.970	1.90	0
MW Soil Subset	Pesticides	Total	Endosulfan II	0-1 ft	ug/kg	1,400,000	10	10	-	1.90	3.80	0	1.90	3.80	0
MW Soil Subset	Pesticides	Total	Endosulfan Sulfate	0-1 ft	ug/kg	1,400,000	10	10	-	1.00	8.00	0	1.00	8.00	0
MW Soil Subset	Pesticides	Total	Endrin Aldehyde	0-1 ft	ug/kg	71,000	10	10	-	1.90	10.0	0	1.90	10.0	0
MW Soil Subset	Pesticides	Total	Endrin Ketone	0-1 ft	ug/kg	71,000	9	9	-	1.90	17.0	0	1.90	17.0	0
MW Soil Subset	Pesticides	Total	Endrin	0-1 ft	ug/kg	71,000	10	10	-	1.90	10.0	0	1.90	10.0	0
MW Soil Subset	Pesticides	Total	Heptachlor Epoxide	0-1 ft	ug/kg	240	10	10	-	0.970	1.90	0	0.970	1.90	0
MW Soil Subset	Pesticides	Total	Heptachlor	0-1 ft	ug/kg	480	10	10	-	0.970	1.90	0	0.970	1.90	0
MW Soil Subset	Pesticides	Total	Methoxychlor	0-1 ft	ug/kg	3,100,000	10	10	-	4.00	19.0	0	4.00	19.0	0
MW Soil Subset	Pesticides	Total	Toxaphene	0-1 ft	ug/kg	2,000	10	10	-	50.0	190	0	50.0	190	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1016	0-1 ft	ug/kg	21,000	10	10	-	3.80	50.0	0	3.80	50.0	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1221	0-1 ft	ug/kg	540	10	10	-	3.80	50.0	0	3.80	50.0	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
MW Soil Subset	PCB Aroclors	Total	Aroclor 1232	0-1 ft	ug/kg	540	10	10	-	3.80	50.0	0	3.80	50.0	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1242	0-1 ft	ug/kg	740	10	10	-	3.80	50.0	0	3.80	50.0	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1248	0-1 ft	ug/kg	740	10	10	-	3.80	50.0	0	3.80	50.0	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1254	0-1 ft	ug/kg	740	10	3	-	4.00	50.0	0	4.00	50.0	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1260	0-1 ft	ug/kg	740	10	1	-	50.0	50.0	0	50.0	50.0	0
MW Soil Subset	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	ug/kg	740	10	1	-	150	150	0	150	150	0
MW Soil Subset	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	mg/kg	23,000	1	1	-	25.0	25.0	0	25.0	25.0	0
MW Soil Subset	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	mg/kg	40,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	mg/kg	13,000	1	1	-	20.0	20.0	0	20.0	20.0	0
MW Soil Subset	SVOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	ug/kg	99,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	1,2-Dichlorobenzene	0-1 ft	ug/kg	19,000,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	1,3-Dichlorobenzene	0-1 ft	ug/kg	17,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	1,4-Dichlorobenzene	0-1 ft	ug/kg	17,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	2,4,5-Trichlorophenol	0-1 ft	ug/kg	62,000,000	10	10	-	49.8	300	0	49.8	300	0
MW Soil Subset	SVOCs	Total	2,4,6-Trichlorophenol	0-1 ft	ug/kg	200,000	10	10	-	49.8	300	0	49.8	300	0
MW Soil Subset	SVOCs	Total	2,4-Dichlorophenol	0-1 ft	ug/kg	1,800,000	10	10	-	49.8	300	0	49.8	300	0
MW Soil Subset	SVOCs	Total	2,4-Dimethylphenol	0-1 ft	ug/kg	12,000,000	10	10	-	20.0	99.7	0	20.0	99.7	0
MW Soil Subset	SVOCs	Total	2,4-Dinitrophenol	0-1 ft	ug/kg	1,200,000	10	10	-	200	590	0	200	590	0
MW Soil Subset	SVOCs	Total	2,4-Dinitrotoluene	0-1 ft	ug/kg	5,500	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	2,6-Dinitrotoluene	0-1 ft	ug/kg	240,000	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	2-Chloronaphthalene	0-1 ft	ug/kg	82,000,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	2-Chlorophenol	0-1 ft	ug/kg	5,100,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	2-Methylphenol	0-1 ft	ug/kg	31,000,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	2-Nitroaniline	0-1 ft	ug/kg	6,000,000	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	2-Nitrophenol	0-1 ft	ug/kg	180,000,000	10	10	-	49.8	300	0	49.8	300	0
MW Soil Subset	SVOCs	Total	3,3'-Dichlorobenzidine	0-1 ft	ug/kg	4,800	10	10	-	98.0	2,490	0	98.0	2,490	0
MW Soil Subset	SVOCs	Total	3-Nitroaniline	0-1 ft	ug/kg	6,000	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-1 ft	ug/kg	49,000	10	10	-	200	590	0	200	590	0
MW Soil Subset	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-1 ft	ug/kg	NV	10	10	-	20.0	59.0	-	20.0	59.0	-
MW Soil Subset	SVOCs	Total	4-Chloro-3-methylphenol	0-1 ft	ug/kg	62,000,000	10	10	-	49.8	300	0	49.8	300	0
MW Soil Subset	SVOCs	Total	4-Chloroaniline	0-1 ft	ug/kg	8,600	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-1 ft	ug/kg	NV	10	10	-	20.0	59.0	-	20.0	59.0	-
MW Soil Subset	SVOCs	Total	4-Nitroaniline	0-1 ft	ug/kg	86,000	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	4-Nitrophenol	0-1 ft	ug/kg	180,000,000	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	Aniline	0-1 ft	ug/kg	2,500,000,000	1	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Benzoic Acid	0-1 ft	ug/kg	62,000,000	10	7	2	200	590	0	200	590	0
MW Soil Subset	SVOCs	Total	Benzyl Alcohol	0-1 ft	ug/kg	62,000,000	10	9	1	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Bis(2-chloroethoxy)methane	0-1 ft	ug/kg	1,800,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Bis(2-chloroethyl) Ether	0-1 ft	ug/kg	1,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-1 ft	ug/kg	1,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	ug/kg	150,000	10	1	-	50.0	50.0	0	50.0	50.0	0
MW Soil Subset	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	ug/kg	910,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Carbazole	0-1 ft	ug/kg	1,000,000	10	2	3	20.0	49.8	0	20.0	49.8	0
MW Soil Subset	SVOCs	Total	Dibenzofuran	0-1 ft	ug/kg	1,000,000	10	8	1	20.0	49.8	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Diethyl Phthalate	0-1 ft	ug/kg	490,000,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Dimethyl Phthalate	0-1 ft	ug/kg	150,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	ug/kg	62,000,000	10	6	1	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	ug/kg	150,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Hexachlorobenzene	0-1 ft	ug/kg	1,800	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Hexachlorobutadiene	0-1 ft	ug/kg	22,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Hexachlorocyclopentadiene	0-1 ft	ug/kg	3,700,000	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	Hexachloroethane	0-1 ft	ug/kg	150,000	10	10	-	20.0	59.0	0	20.0	59.0	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(10 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
MW Soil Subset	SVOCs	Total	Isophorone	0-1 ft	ug/kg	1,800,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Nitrobenzene	0-1 ft	ug/kg	24,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	N-Nitrosodimethylamine	0-1 ft	ug/kg	34	9	9	-	98.0	300	9	98.0	300	9
MW Soil Subset	SVOCs	Total	N-Nitrosodi-n-propylamine	0-1 ft	ug/kg	250	10	10	-	49.8	300	1	49.8	300	1
MW Soil Subset	SVOCs	Total	N-Nitrosodiphenylamine	0-1 ft	ug/kg	350,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	ug/kg	3,100,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Pentachlorophenol	0-1 ft	ug/kg	13,000	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	Phenol	0-1 ft	ug/kg	180,000,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	2-Methylnaphthalene	0-1 ft	ug/kg	4,100,000	10	9	1	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Acenaphthene	0-1 ft	ug/kg	19,000,000	14	3	2	20.0	49.8	0	20.0	49.8	0
MW Soil Subset	SVOCs	Total	Acenaphthylene	0-1 ft	ug/kg	23,000	14	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Anthracene	0-1 ft	ug/kg	93,000,000	14	1	1	49.8	49.8	0	20.0	49.8	0
MW Soil Subset	SVOCs	Total	Benzo(a)anthracene	0-1 ft	ug/kg	2,700	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Benzo(a)pyrene	0-1 ft	ug/kg	270	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	ug/kg	2,700	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	ug/kg	27,000	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	ug/kg	27,000	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Chrysene	0-1 ft	ug/kg	270,000	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	ug/kg	270	14	1	1	49.8	49.8	0	20.0	49.8	0
MW Soil Subset	SVOCs	Total	Fluoranthene	0-1 ft	ug/kg	8,900,000	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Fluorene	0-1 ft	ug/kg	12,000,000	14	4	3	20.0	49.8	0	20.0	49.8	0
MW Soil Subset	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	ug/kg	2,700	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Naphthalene	0-1 ft	ug/kg	23,000	14	9	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Phenanthrene	0-1 ft	ug/kg	93,000,000	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Pyrene	0-1 ft	ug/kg	6,700,000	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	VOCs	Total	1,1,1,2-Tetrachloroethane	0-1 ft	ug/kg	9,300	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	ug/kg	38,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,1,2,2-Tetrachloroethane	0-1 ft	ug/kg	2,800	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,1,2-Trichloroethane	0-1 ft	ug/kg	2,700	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,1-Dichloroethane	0-1 ft	ug/kg	5,900	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,1-Dichloroethene	0-1 ft	ug/kg	680,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,1-Dichloropropene	0-1 ft	ug/kg	8,100	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,2,3-Trichlorobenzene	0-1 ft	ug/kg	490,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,2,3-Trichloropropane	0-1 ft	ug/kg	95	1	1	-	100	100	1	100	100	1
MW Soil Subset	VOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	ug/kg	99,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	ug/kg	980,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,2-Dibromo-3-chloropropane	0-1 ft	ug/kg	69	1	1	-	500	500	1	500	500	1
MW Soil Subset	VOCs	Total	1,2-Dibromoethane (EDB)	0-1 ft	ug/kg	140	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,2-Dichlorobenzene	0-1 ft	ug/kg	19,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,2-Dichloroethane (EDC)	0-1 ft	ug/kg	590	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,2-Dichloropropane	0-1 ft	ug/kg	4,500	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	ug/kg	150,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,3-Dichlorobenzene	0-1 ft	ug/kg	17,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,3-Dichloropropane	0-1 ft	ug/kg	20,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	ug/kg	17,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	2,2-Dichloropropane	0-1 ft	ug/kg	4,500	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	2-Butanone (MEK)	0-1 ft	ug/kg	200,000,000	1	1	-	1,000	1,000	0	1,000	1,000	0
MW Soil Subset	VOCs	Total	2-Chlorotoluene	0-1 ft	ug/kg	20,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	2-Hexanone	0-1 ft	ug/kg	1,400,000	1	1	-	1,000	1,000	0	1,000	1,000	0
MW Soil Subset	VOCs	Total	4-Chlorotoluene	0-1 ft	ug/kg	72,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	4-Isopropyltoluene	0-1 ft	ug/kg	24,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	ug/kg	53,000,000	1	1	-	1,000	1,000	0	1,000	1,000	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
MW Soil Subset	VOCs	Total	Acetone	0-1 ft	ug/kg	630,000,000	1	1	-	1,000	1,000	0	1,000	1,000	0
MW Soil Subset	VOCs	Total	Benzene	0-1 ft	ug/kg	1,200	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Bromobenzene	0-1 ft	ug/kg	1,800,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Bromochloromethane	0-1 ft	ug/kg	1,900	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Bromodichloromethane	0-1 ft	ug/kg	1,900	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Bromoform	0-1 ft	ug/kg	360,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Bromomethane	0-1 ft	ug/kg	17,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Carbon Disulfide	0-1 ft	ug/kg	3,700,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Carbon Tetrachloride	0-1 ft	ug/kg	630	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Chlorobenzene	0-1 ft	ug/kg	4,300,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Chloroethane	0-1 ft	ug/kg	61,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Chloroform	0-1 ft	ug/kg	410	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Chloromethane	0-1 ft	ug/kg	300,000	1	1	-	500	500	0	500	500	0
MW Soil Subset	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	ug/kg	3,100,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	cis-1,3-Dichloropropene	0-1 ft	ug/kg	8,100	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Dibromochloromethane	0-1 ft	ug/kg	34,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Dibromomethane	0-1 ft	ug/kg	110,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Dichlorodifluoromethane	0-1 ft	ug/kg	780,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	ug/kg	20,000	1	1	-	1,000	1,000	0	1,000	1,000	0
MW Soil Subset	VOCs	Total	Ethylbenzene	0-1 ft	ug/kg	12,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Hexachlorobutadiene	0-1 ft	ug/kg	22,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Isopropylbenzene	0-1 ft	ug/kg	24,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	m,p-Xylenes	0-1 ft	ug/kg	2,700,000	1	1	-	200	200	0	200	200	0
MW Soil Subset	VOCs	Total	Naphthalene	0-1 ft	ug/kg	23,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	n-Butylbenzene	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	n-Propylbenzene	0-1 ft	ug/kg	21,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	o-Xylene	0-1 ft	ug/kg	19,000,000	5	5	-	0.0590	100	0	4.70	100	0
MW Soil Subset	VOCs	Total	sec-Butylbenzene	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	Styrene	0-1 ft	ug/kg	51,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	tert-Butylbenzene	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	ug/kg	1,600	5	1	2	100	100	0	4.70	100	0
MW Soil Subset	VOCs	Total	Toluene	0-1 ft	ug/kg	24,000,000	5	1	4	100	100	0	4.70	100	0
MW Soil Subset	VOCs	Total	trans-1,2-Dichloroethene	0-1 ft	ug/kg	200,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	trans-1,3-Dichloropropene	0-1 ft	ug/kg	8,100	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Trichloroethene (TCE)	0-1 ft	ug/kg	130	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Trichlorofluoromethane	0-1 ft	ug/kg	63,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Vinyl Chloride	0-1 ft	ug/kg	2,200	1	1	-	100	100	0	100	100	0
Groundwater	Metals	Total	Antimony	N/A	ug/L	5.6	19	11	7	3.00	50.0	10	3.00	50.0	10
Groundwater	Metals	Total	Arsenic	N/A	ug/L	0.018	53	10	6	0.500	5.00	10	0.500	5.00	16
Groundwater	Metals	Total	Beryllium	N/A	ug/L	73	19	12	7	0.0142	5.00	0	0.500	5.00	0
Groundwater	Metals	Total	Cadmium	N/A	ug/L	18	19	13	3	0.00710	5.00	0	0.500	5.00	0
Groundwater	Metals	Total	Chromium	N/A	ug/L	55,000	19	12	-	1.00	10.0	0	1.00	10.0	0
Groundwater	Metals	Total	Copper	N/A	ug/L	1,300	19	8	-	10.0	10.0	0	10.0	10.0	0
Groundwater	Metals	Total	Iron	N/A	ug/L	300	53	3	2	33.7	60.6	0	20.0	60.6	0
Groundwater	Metals	Total	Lead	N/A	ug/L	15	53	21	-	0.00600	3.00	0	0.0200	3.00	0
Groundwater	Metals	Total	Manganese	N/A	ug/L	50	53	1	2	10.0	10.0	0	5.00	10.0	0
Groundwater	Metals	Total	Mercury	N/A	ug/L	11	24	20	2	0.0500	0.200	0	0.200	0.200	0
Groundwater	Metals	Total	Nickel	N/A	ug/L	610	19	8	1	10.0	10.0	0	1.00	10.0	0
Groundwater	Metals	Total	Selenium	N/A	ug/L	170	19	12	3	0.385	5.00	0	3.00	5.00	0
Groundwater	Metals	Total	Silver	N/A	ug/L	180	19	14	1	0.100	10.0	0	0.100	10.0	0
Groundwater	Metals	Total	Thallium	N/A	ug/L	0.24	19	10	9	5.00	5.00	10	0.500	5.00	19
Groundwater	Metals	Total	Zinc	N/A	ug/L	7,400	19	4	-	10.0	10.0	0	10.0	10.0	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(12 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Groundwater	Metals	Dissolved	Antimony	N/A	ug/L	5.6	3	3	-	50.0	50.0	3	50.0	50.0	3
Groundwater	Metals	Dissolved	Arsenic	N/A	ug/L	0.018	36	7	3	0.500	5.00	7	0.500	5.00	10
Groundwater	Metals	Dissolved	Beryllium	N/A	ug/L	73	3	3	-	5.00	5.00	0	5.00	5.00	0
Groundwater	Metals	Dissolved	Cadmium	N/A	ug/L	18	3	3	-	5.00	5.00	0	5.00	5.00	0
Groundwater	Metals	Dissolved	Chromium	N/A	ug/L	55,000	3	3	-	10.0	10.0	0	10.0	10.0	0
Groundwater	Metals	Dissolved	Copper	N/A	ug/L	1,300	3	3	-	10.0	10.0	0	10.0	10.0	0
Groundwater	Metals	Dissolved	Iron	N/A	ug/L	300	36	11	6	4.00	50.0	0	20.0	50.0	0
Groundwater	Metals	Dissolved	Lead	N/A	ug/L	15	36	20	7	0.00600	3.00	0	0.0200	3.00	0
Groundwater	Metals	Dissolved	Manganese	N/A	ug/L	50	36	2	2	0.400	0.400	0	0.400	5.00	0
Groundwater	Metals	Dissolved	Mercury	N/A	ug/L	11	8	8	-	0.0300	0.200	0	0.200	0.200	0
Groundwater	Metals	Dissolved	Nickel	N/A	ug/L	610	3	2	-	10.0	10.0	0	10.0	10.0	0
Groundwater	Metals	Dissolved	Potassium	N/A	ug/L	NV	9	0	1	-	-	-	2,000	2,000	-
Groundwater	Metals	Dissolved	Selenium	N/A	ug/L	170	3	3	-	5.00	5.00	0	5.00	5.00	0
Groundwater	Metals	Dissolved	Silver	N/A	ug/L	180	3	3	-	10.0	10.0	0	10.0	10.0	0
Groundwater	Metals	Dissolved	Thallium	N/A	ug/L	0.24	3	3	-	5.00	5.00	3	5.00	5.00	3
Groundwater	Metals	Dissolved	Zinc	N/A	ug/L	7,400	3	2	-	10.0	10.0	0	10.0	10.0	0
Groundwater	Butyltins	Total	Dibutyltin	N/A	ug/L	11	39	28	2	0.00111	0.00810	0	0.00302	0.0500	0
Groundwater	Butyltins	Total	Monobutyltin	N/A	ug/L	11	39	32	1	0.00105	0.0290	0	0.00302	0.0870	0
Groundwater	Butyltins	Total	Tetrabutyltin	N/A	ug/L	11	8	8	-	0.00110	0.00119	0	0.00300	0.00325	0
Groundwater	Butyltins	Total	Tributyltin	N/A	ug/L	11	8	2	-	0.00156	0.00163	0	0.00402	0.00419	0
Groundwater	Herbicides	Total	2,4,5-T	N/A	ug/L	370	21	21	-	0.0566	0.150	0	0.100	0.160	0
Groundwater	Herbicides	Total	2,4,5-TP (Silvex)	N/A	ug/L	290	21	21	-	0.0227	0.100	0	0.0800	0.100	0
Groundwater	Herbicides	Total	2,4-D	N/A	ug/L	100	21	21	-	0.0296	1.00	0	0.0800	1.00	0
Groundwater	Herbicides	Total	2,4-DB	N/A	ug/L	290	21	21	-	0.0557	1.00	0	0.160	1.00	0
Groundwater	Herbicides	Total	4-Nitrophenol	N/A	ug/L	10,000	8	7	-	0.0114	0.0114	0	0.0800	0.0800	0
Groundwater	Herbicides	Total	Dalapon	N/A	ug/L	1,100	21	21	-	0.0124	2.00	0	0.0800	2.00	0
Groundwater	Herbicides	Total	Dicamba	N/A	ug/L	1,100	21	21	-	0.0221	0.100	0	0.0800	0.100	0
Groundwater	Herbicides	Total	Dichloroprop	N/A	ug/L	290	21	20	-	0.0114	1.00	0	0.0800	1.00	0
Groundwater	Herbicides	Total	Dinoseb	N/A	ug/L	37	21	21	-	0.0292	0.500	0	0.0800	0.500	0
Groundwater	Herbicides	Total	MCPA	N/A	ug/L	18	21	21	-	0.0114	50.0	8	0.0800	50.0	8
Groundwater	Herbicides	Total	MCPP	N/A	ug/L	37	21	21	-	0.0134	50.0	13	0.0800	50.0	13
Groundwater	Herbicides	Total	Pentachlorophenol	N/A	ug/L	0.27	8	7	-	0.0259	0.0259	0	0.0800	0.0800	0
Groundwater	Pesticides	Total	4,4'-DDD	N/A	ug/L	0.00031	22	22	-	0.000458	0.100	22	0.00195	0.100	22
Groundwater	Pesticides	Total	4,4'-DDE	N/A	ug/L	0.00022	22	21	-	0.000380	0.100	21	0.00195	0.100	21
Groundwater	Pesticides	Total	4,4'-DDT	N/A	ug/L	0.00022	22	22	-	0.000486	0.100	22	0.00195	0.100	22
Groundwater	Pesticides	Total	Aldrin	N/A	ug/L	0.000049	22	22	-	0.000111	0.0500	22	0.000973	0.0500	22
Groundwater	Pesticides	Total	BHC (alpha)	N/A	ug/L	0.0026	22	22	-	0.000358	0.0500	14	0.000973	0.0500	14
Groundwater	Pesticides	Total	BHC (beta)	N/A	ug/L	0.0091	22	22	-	0.000415	0.0500	14	0.000973	0.0500	14
Groundwater	Pesticides	Total	BHC (delta)	N/A	ug/L	0.0026	22	22	-	0.000228	0.0500	14	0.000973	0.0500	14
Groundwater	Pesticides	Total	BHC (gamma) Lindane	N/A	ug/L	0.052	22	22	-	0.000700	0.0500	0	0.000973	0.0500	0
Groundwater	Pesticides	Total	Chlordane (alpha)	N/A	ug/L	0.0008	14	14	-	0.0470	0.0500	14	0.0470	0.0500	14
Groundwater	Pesticides	Total	Chlordane (gamma)	N/A	ug/L	0.0008	14	14	-	0.0470	0.0500	14	0.0470	0.0500	14
Groundwater	Pesticides	Total	Chlordane (technical)	N/A	ug/L	0.0008	8	8	-	0.00312	0.0114	8	0.00973	0.0137	8
Groundwater	Pesticides	Total	Dieldrin	N/A	ug/L	0.000052	22	21	1	0.000294	0.100	21	0.00195	0.100	22
Groundwater	Pesticides	Total	Endosulfan I	N/A	ug/L	62	22	22	-	0.000485	0.0500	0	0.000973	0.0500	0
Groundwater	Pesticides	Total	Endosulfan II	N/A	ug/L	62	22	22	-	0.000368	0.100	0	0.00195	0.100	0
Groundwater	Pesticides	Total	Endosulfan Sulfate	N/A	ug/L	62	22	22	-	0.000523	0.100	0	0.00195	0.100	0
Groundwater	Pesticides	Total	Endrin Aldehyde	N/A	ug/L	0.29	22	22	-	0.000947	0.100	0	0.00195	0.100	0
Groundwater	Pesticides	Total	Endrin Ketone	N/A	ug/L	0.059	22	22	-	0.000335	0.100	14	0.00195	0.100	14
Groundwater	Pesticides	Total	Endrin	N/A	ug/L	0.059	22	22	-	0.000301	0.100	14	0.00195	0.100	14
Groundwater	Pesticides	Total	Heptachlor Epoxide	N/A	ug/L	0.000039	22	22	-	0.000364	0.0500	22	0.000973	0.0500	22
Groundwater	Pesticides	Total	Heptachlor	N/A	ug/L	0.000079	22	22	-	0.000733	0.0500	22	0.000973	0.0500	22

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Groundwater	Pesticides	Total	Methoxychlor	N/A	ug/L	100	22	22	-	0.000522	0.500	0	0.00973	0.500	0
Groundwater	Pesticides	Total	Toxaphene	N/A	ug/L	0.00028	22	22	-	0.0113	1.00	22	0.0973	1.00	22
Groundwater	PCB Aroclors	Total	Aroclor 1016	N/A	ug/L	0.000064	22	22	-	0.00199	1.00	22	0.00992	1.00	22
Groundwater	PCB Aroclors	Total	Aroclor 1221	N/A	ug/L	0.000064	22	22	-	0.00496	1.00	22	0.0198	1.00	22
Groundwater	PCB Aroclors	Total	Aroclor 1232	N/A	ug/L	0.000064	22	22	-	0.00236	1.00	22	0.00992	1.00	22
Groundwater	PCB Aroclors	Total	Aroclor 1242	N/A	ug/L	0.000064	22	22	-	0.00327	1.00	22	0.00992	1.00	22
Groundwater	PCB Aroclors	Total	Aroclor 1248	N/A	ug/L	0.000064	22	22	-	0.00155	1.00	22	0.00992	1.00	22
Groundwater	PCB Aroclors	Total	Aroclor 1254	N/A	ug/L	0.000064	22	22	-	0.00199	1.00	22	0.00992	1.00	22
Groundwater	PCB Aroclors	Total	Aroclor 1260	N/A	ug/L	0.000064	22	22	-	0.00109	1.00	22	0.00992	1.00	22
Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	90	55	18	11	12.0	250	16	100	250	29
Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	ug/L	290	55	28	7	21.0	750	12	100	750	15
Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	100	57	40	14	13.0	100	0	100	250	34
Groundwater	SVOCs	Total	1,2,4-Trichlorobenzene	N/A	ug/L	2.3	23	23	-	0.0100	10.0	14	0.0999	10.0	14
Groundwater	SVOCs	Total	1,2-Dichlorobenzene	N/A	ug/L	370	23	23	-	0.0160	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	1,3-Dichlorobenzene	N/A	ug/L	0.42	23	23	-	0.0170	10.0	14	0.0999	10.0	16
Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	0.42	54	52	2	0.0150	10.0	14	0.0999	10.0	16
Groundwater	SVOCs	Total	2,4,5-Trichlorophenol	N/A	ug/L	1,800	23	23	-	0.0110	48.0	0	0.0999	48.0	0
Groundwater	SVOCs	Total	2,4,6-Trichlorophenol	N/A	ug/L	1.4	23	23	-	0.0120	10.0	14	0.0999	10.0	15
Groundwater	SVOCs	Total	2,4-Dichlorophenol	N/A	ug/L	77	23	23	-	0.0150	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2,4-Dimethylphenol	N/A	ug/L	380	23	23	-	0.0150	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2,4-Dinitrophenol	N/A	ug/L	69	23	23	-	0.0300	48.0	0	0.500	48.0	0
Groundwater	SVOCs	Total	2,4-Dinitrotoluene	N/A	ug/L	0.11	23	23	-	0.0130	10.0	16	0.0999	10.0	20
Groundwater	SVOCs	Total	2,6-Dinitrotoluene	N/A	ug/L	37	23	23	-	0.0200	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2-Chloronaphthalene	N/A	ug/L	1,000	23	23	-	0.00150	10.0	0	0.00999	10.0	0
Groundwater	SVOCs	Total	2-Chlorophenol	N/A	ug/L	81	23	23	-	0.0170	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2-Methylnaphthalene	N/A	ug/L	150	23	19	4	0.0150	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2-Methylphenol	N/A	ug/L	1,800	23	22	-	0.0240	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2-Nitroaniline	N/A	ug/L	370	23	23	-	0.0180	48.0	0	0.0999	48.0	0
Groundwater	SVOCs	Total	2-Nitrophenol	N/A	ug/L	10,000	23	23	-	0.0220	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	3,3'-Dichlorobenzidine	N/A	ug/L	0.021	23	23	-	0.0360	19.0	23	0.0999	19.0	23
Groundwater	SVOCs	Total	3-Nitroaniline	N/A	ug/L	3.4	23	23	-	0.0330	48.0	14	0.0999	48.0	14
Groundwater	SVOCs	Total	4,6-Dinitro-2-methylphenol	N/A	ug/L	2.9	23	23	-	0.0220	48.0	14	0.500	48.0	16
Groundwater	SVOCs	Total	4-Bromophenyl Phenyl Ether	N/A	ug/L	NV	23	23	-	0.0120	10.0	-	0.0999	10.0	-
Groundwater	SVOCs	Total	4-Chloro-3-methylphenol	N/A	ug/L	3,700	23	23	-	0.0539	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	4-Chloroaniline	N/A	ug/L	0.34	23	23	-	0.0390	10.0	16	0.0999	10.0	16
Groundwater	SVOCs	Total	4-Chlorophenyl Phenyl Ether	N/A	ug/L	NV	23	23	-	0.0150	10.0	-	0.0999	10.0	-
Groundwater	SVOCs	Total	4-Nitroaniline	N/A	ug/L	3.4	23	23	-	0.0210	48.0	14	0.0999	48.0	14
Groundwater	SVOCs	Total	4-Nitrophenol	N/A	ug/L	10,000	53	53	-	0.0290	48.0	0	0.500	48.0	0
Groundwater	SVOCs	Total	Acenaphthene	N/A	ug/L	670	23	21	-	0.00160	10.0	0	0.00999	10.0	0
Groundwater	SVOCs	Total	Acenaphthylene	N/A	ug/L	0.14	23	23	-	0.00150	10.0	14	0.00999	10.0	15
Groundwater	SVOCs	Total	Aniline	N/A	ug/L	12	23	23	-	0.0000616	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Anthracene	N/A	ug/L	8,300	23	22	-	0.00150	10.0	0	0.00999	10.0	0
Groundwater	SVOCs	Total	Benzidine	N/A	ug/L	0.000086	23	23	-	0.0240	100	23	0.500	100	23
Groundwater	SVOCs	Total	Benzo(a)anthracene	N/A	ug/L	0.0038	23	23	-	0.00426	10.0	23	0.00999	10.0	23
Groundwater	SVOCs	Total	Benzo(a)pyrene	N/A	ug/L	0.0029	23	23	-	0.00470	10.0	23	0.00999	10.0	23
Groundwater	SVOCs	Total	Benzo(b)fluoranthene	N/A	ug/L	0.0038	14	14	-	9.40	10.0	14	9.40	10.0	14
Groundwater	SVOCs	Total	Benzo(g,h,i)perylene	N/A	ug/L	0.290	23	23	-	0.00340	10.0	14	0.00999	10.0	14
Groundwater	SVOCs	Total	Benzo(k)fluoranthene	N/A	ug/L	0.0038	14	14	-	9.40	10.0	14	9.40	10.0	14
Groundwater	SVOCs	Total	Benzofluoranthenes, Total	N/A	ug/L	0.00380	9	9	-	0.00380	0.0540	7	0.0200	0.284	9
Groundwater	SVOCs	Total	Benzoic Acid	N/A	ug/L	150,000	23	22	-	0.0200	48.0	0	0.500	48.0	0
Groundwater	SVOCs	Total	Benzyl Alcohol	N/A	ug/L	3,700	23	23	-	0.0320	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Bis(2-chloroethoxy)methane	N/A	ug/L	110	23	23	-	0.0180	10.0	0	0.0999	10.0	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Groundwater	SVOCs	Total	Bis(2-chloroethyl) Ether	N/A	ug/L	0.012	23	23	-	0.0190	10.0	23	0.0999	10.0	23
Groundwater	SVOCs	Total	Bis(2-chloroisopropyl) Ether	N/A	ug/L	1,400	23	23	-	0.0210	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	ug/L	1.2	23	19	-	0.0649	48.0	11	0.0999	48.0	12
Groundwater	SVOCs	Total	Butyl Benzyl Phthalate	N/A	ug/L	35	23	23	-	0.187	10.0	0	0.500	10.0	0
Groundwater	SVOCs	Total	Carbazole	N/A	ug/L	NV	23	23	-	0.00280	10.0	-	0.00999	10.0	-
Groundwater	SVOCs	Total	Chrysene	N/A	ug/L	0.0038	23	23	-	0.00250	10.0	16	0.00999	10.0	23
Groundwater	SVOCs	Total	Dibenz(a,h)anthracene	N/A	ug/L	0.0029	23	23	-	0.00270	10.0	20	0.00999	10.0	23
Groundwater	SVOCs	Total	Dibenzofuran	N/A	ug/L	37	23	23	-	0.0140	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Diethyl Phthalate	N/A	ug/L	17,000	23	20	1	0.0579	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Dimethyl Phthalate	N/A	ug/L	29,000	23	22	-	0.0160	10.0	0	0.100	10.0	0
Groundwater	SVOCs	Total	Di-n-butyl Phthalate	N/A	ug/L	2,000	23	23	-	0.231	10.0	0	0.500	10.0	0
Groundwater	SVOCs	Total	Di-n-octyl Phthalate	N/A	ug/L	1.2	23	20	-	0.0340	10.0	14	0.0999	10.0	14
Groundwater	SVOCs	Total	Fluoranthene	N/A	ug/L	130	23	23	-	0.00190	10.0	0	0.00999	10.0	0
Groundwater	SVOCs	Total	Fluorene	N/A	ug/L	1,100	23	23	-	0.00140	10.0	0	0.00999	10.0	0
Groundwater	SVOCs	Total	Hexachlorobenzene	N/A	ug/L	0.00028	23	23	-	0.0200	10.0	23	0.0999	10.0	23
Groundwater	SVOCs	Total	Hexachlorobutadiene	N/A	ug/L	0.44	23	23	-	0.0290	10.0	14	0.0999	10.0	16
Groundwater	SVOCs	Total	Hexachlorocyclopentadiene	N/A	ug/L	40	23	23	-	0.0260	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Hexachloroethane	N/A	ug/L	1.4	23	23	-	0.0400	10.0	14	0.0999	10.0	15
Groundwater	SVOCs	Total	Indeno(1,2,3-cd)pyrene	N/A	ug/L	0.0038	23	23	-	0.00300	10.0	16	0.00999	10.0	23
Groundwater	SVOCs	Total	Isophorone	N/A	ug/L	35	23	21	1	0.0180	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Naphthalene	N/A	ug/L	0.14	23	20	-	0.00220	10.0	14	0.00999	10.0	15
Groundwater	SVOCs	Total	Nitrobenzene	N/A	ug/L	0.12	23	23	-	0.0450	10.0	16	0.0999	10.0	17
Groundwater	SVOCs	Total	N-Nitrosodimethylamine	N/A	ug/L	0.00042	23	23	-	0.00330	10.0	23	0.500	10.0	23
Groundwater	SVOCs	Total	N-Nitrosodi-n-propylamine	N/A	ug/L	0.005	23	23	-	0.0210	10.0	23	0.0999	10.0	23
Groundwater	SVOCs	Total	N-Nitrosodiphenylamine	N/A	ug/L	3.3	23	23	-	0.00999	10.0	14	0.0999	10.0	14
Groundwater	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	ug/L	180	23	22	-	0.0230	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Pentachlorophenol	N/A	ug/L	0.27	23	23	-	0.0170	25.0	14	0.0999	25.0	16
Groundwater	SVOCs	Total	Phenanthrene	N/A	ug/L	8,300	54	49	-	0.00220	10.0	0	0.00999	10.0	0
Groundwater	SVOCs	Total	Phenol	N/A	ug/L	10,000	54	53	1	0.0320	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Pyrene	N/A	ug/L	830	23	23	-	0.00140	10.0	0	0.00999	10.0	0
Groundwater	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	ug/L	0.52	22	22	-	0.500	1.00	13	1.00	1.00	22
Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	ug/L	9,100	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	ug/L	0.067	22	22	-	0.500	1.00	22	1.00	1.00	22
Groundwater	VOCs	Total	1,1,2-Trichloroethane	N/A	ug/L	0.23	22	22	-	0.500	1.00	22	1.00	1.00	22
Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	ug/L	2.3	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	ug/L	330	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,1-Dichloropropene	N/A	ug/L	0.43	22	22	-	0.500	1.00	22	1.00	1.00	22
Groundwater	VOCs	Total	1,2,3-Trichlorobenzene	N/A	ug/L	29	22	22	-	0.500	5.00	0	1.00	5.00	0
Groundwater	VOCs	Total	1,2,3-Trichloropropane	N/A	ug/L	0.00072	22	22	-	0.500	1.00	22	1.00	1.00	22
Groundwater	VOCs	Total	1,2,4-Trichlorobenzene	N/A	ug/L	2.3	22	22	-	0.500	5.00	12	1.00	5.00	12
Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	ug/L	15	22	20	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	ug/L	0.00032	22	22	-	0.500	3.00	22	1.00	3.00	22
Groundwater	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	ug/L	0.0063	22	22	-	0.500	1.00	22	1.00	1.00	22
Groundwater	VOCs	Total	1,2-Dichlorobenzene	N/A	ug/L	370	22	22	-	0.500	2.00	0	1.00	2.00	0
Groundwater	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	ug/L	0.14	22	22	-	0.500	1.00	22	1.00	1.00	22
Groundwater	VOCs	Total	1,2-Dichloropropane	N/A	ug/L	0.39	22	22	-	0.500	1.00	22	1.00	1.00	22
Groundwater	VOCs	Total	1,3,5-Trimethylbenzene	N/A	ug/L	12	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,3-Dichlorobenzene	N/A	ug/L	0.42	22	22	-	0.500	2.00	22	1.00	2.00	22
Groundwater	VOCs	Total	1,3-Dichloropropane	N/A	ug/L	730	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	0.42	22	22	-	0.500	2.00	22	1.00	2.00	22
Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	ug/L	0.39	22	22	-	0.500	1.00	22	1.00	1.00	22
Groundwater	VOCs	Total	2-Butanone (MEK)	N/A	ug/L	7,100	14	14	-	2.50	10.0	0	5.00	10.0	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(15 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Groundwater	VOCs	Total	2-Chloroethylvinylether	N/A	ug/L	NV	13	13	-	10.0	10.0	-	10.0	10.0	-
Groundwater	VOCs	Total	2-Chlorotoluene	N/A	ug/L	730	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	2-Hexanone	N/A	ug/L	47	22	22	-	2.50	10.0	0	5.00	10.0	0
Groundwater	VOCs	Total	4-Chlorotoluene	N/A	ug/L	2,600	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	4-Isopropyltoluene	N/A	ug/L	NV	22	22	-	0.500	2.00	-	1.00	2.00	-
Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	ug/L	2,000	22	21	1	2.50	10.0	0	5.00	10.0	0
Groundwater	VOCs	Total	Acetone	N/A	ug/L	22,000	22	18	-	2.50	10.0	0	5.00	10.0	0
Groundwater	VOCs	Total	Benzene	N/A	ug/L	0.39	22	22	-	0.500	1.00	22	1.00	1.00	22
Groundwater	VOCs	Total	Bromobenzene	N/A	ug/L	88	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	Bromochloromethane	N/A	ug/L	0.12	22	22	-	0.500	1.00	22	1.00	1.00	22
Groundwater	VOCs	Total	Bromodichloromethane	N/A	ug/L	0.12	22	22	-	0.500	1.00	22	1.00	1.00	22
Groundwater	VOCs	Total	Bromoform	N/A	ug/L	4.3	22	22	-	0.500	3.00	0	1.00	3.00	0
Groundwater	VOCs	Total	Bromomethane	N/A	ug/L	8.7	22	22	-	1.00	1.00	0	1.00	2.00	0
Groundwater	VOCs	Total	Carbon Disulfide	N/A	ug/L	1,000	22	21	-	0.500	10.0	0	1.00	10.0	0
Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	ug/L	0.19	22	21	-	0.500	1.00	21	1.00	1.00	21
Groundwater	VOCs	Total	Chlorobenzene	N/A	ug/L	91	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	Chloroethane	N/A	ug/L	21,000	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	Chloroform	N/A	ug/L	0.19	56	48	4	0.0820	1.00	19	0.500	1.00	52
Groundwater	VOCs	Total	Chloromethane	N/A	ug/L	190	22	22	-	0.500	5.00	0	1.00	5.00	0
Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	ug/L	360	22	21	1	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	cis-1,3-Dichloropropene	N/A	ug/L	0.43	22	22	-	0.500	3.00	22	1.00	3.00	22
Groundwater	VOCs	Total	Dibromochloromethane	N/A	ug/L	0.4	22	22	-	0.500	2.00	22	1.00	2.00	22
Groundwater	VOCs	Total	Dibromomethane	N/A	ug/L	8.2	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	Dichlorodifluoromethane	N/A	ug/L	390	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	ug/L	4.4	22	22	-	0.500	5.00	13	1.00	5.00	13
Groundwater	VOCs	Total	Ethylbenzene	N/A	ug/L	1.4	22	21	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	Hexachlorobutadiene	N/A	ug/L	0.44	22	22	-	0.500	3.00	22	1.00	3.00	22
Groundwater	VOCs	Total	Isopropylbenzene	N/A	ug/L	680	22	20	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	m,p-Xylenes	N/A	ug/L	200	22	22	-	1.00	1.00	0	1.00	2.00	0
Groundwater	VOCs	Total	Naphthalene	N/A	ug/L	0.14	22	22	-	0.500	5.00	22	1.00	5.00	22
Groundwater	VOCs	Total	n-Butylbenzene	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	n-Propylbenzene	N/A	ug/L	1,300	22	20	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	o-Xylene	N/A	ug/L	1,200	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	sec-Butylbenzene	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	Styrene	N/A	ug/L	1,600	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	tert-Butylbenzene	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	0.093	56	43	2	0.0970	1.00	43	0.500	1.00	45
Groundwater	VOCs	Total	Toluene	N/A	ug/L	1,300	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	ug/L	110	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	trans-1,3-Dichloropropene	N/A	ug/L	0.43	22	22	-	0.500	3.00	22	1.00	3.00	22
Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	ug/L	0.039	22	22	-	0.500	1.00	22	1.00	1.00	22
Groundwater	VOCs	Total	Trichlorofluoromethane	N/A	ug/L	1,300	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	Vinyl Acetate	N/A	ug/L	410	22	22	-	2.50	10.0	0	5.00	10.0	0
Groundwater	VOCs	Total	Vinyl Chloride	N/A	ug/L	0.025	56	40	13	0.0440	1.00	40	0.500	1.00	53
Seep Water	Metals	Total	Antimony	N/A	ug/L	5.6	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Total	Arsenic	N/A	ug/L	0.018	5	1	-	1.01	1.01	1	1.01	1.01	1
Seep Water	Metals	Total	Beryllium	N/A	ug/L	73	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Total	Cadmium	N/A	ug/L	18	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Total	Lead	N/A	ug/L	15	5	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Total	Mercury	N/A	ug/L	11	2	1	1	1.00	1.00	0	0.200	1.00	0
Seep Water	Metals	Total	Silver	N/A	ug/L	180	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Total	Thallium	N/A	ug/L	0.24	1	1	-	1.00	1.00	1	1.00	1.00	1

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(16 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Seep Water	Metals	Total	Zinc	N/A	ug/L	7,400	1	1	-	10.0	10.0	0	10.0	10.0	0
Seep Water	Metals	Dissolved	Arsenic	N/A	ug/L	0.018	5	2	-	0.520	1.00	2	0.520	1.00	2
Seep Water	Metals	Dissolved	Beryllium	N/A	ug/L	73	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Dissolved	Cadmium	N/A	ug/L	18	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Dissolved	Chromium	N/A	ug/L	55,000	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Dissolved	Iron	N/A	ug/L	300	5	2	2	20.0	20.0	0	20.0	20.0	0
Seep Water	Metals	Dissolved	Lead	N/A	ug/L	15	5	2	2	0.0300	1.00	0	0.0300	1.00	0
Seep Water	Metals	Dissolved	Manganese	N/A	ug/L	50	5	2	-	0.140	0.160	0	0.140	0.160	0
Seep Water	Metals	Dissolved	Mercury	N/A	ug/L	11	2	2	-	0.0300	1.00	0	0.200	1.00	0
Seep Water	Metals	Dissolved	Potassium	N/A	ug/L	NV	2	0	1	-	-	-	2,000	2,000	-
Seep Water	Metals	Dissolved	Selenium	N/A	ug/L	170	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Dissolved	Silver	N/A	ug/L	180	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Dissolved	Thallium	N/A	ug/L	0.24	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	Butyltins	Total	Dibutyltin	N/A	ug/L	11	4	4	-	0.00730	0.00810	0	0.0500	0.0500	0
Seep Water	Butyltins	Total	Monobutyltin	N/A	ug/L	11	4	4	-	0.0110	0.0290	0	0.0500	0.0870	0
Seep Water	Herbicides	Total	2,4,5-T	N/A	ug/L	370	1	1	-	0.400	0.400	0	0.400	0.400	0
Seep Water	Herbicides	Total	2,4,5-TP (Silvex)	N/A	ug/L	290	1	1	-	0.400	0.400	0	0.400	0.400	0
Seep Water	Herbicides	Total	2,4-D	N/A	ug/L	100	1	1	-	0.400	0.400	0	0.400	0.400	0
Seep Water	Herbicides	Total	2,4-DB	N/A	ug/L	290	1	1	-	0.400	0.400	0	0.400	0.400	0
Seep Water	Herbicides	Total	Dalapon	N/A	ug/L	1,100	1	1	-	0.400	0.400	0	0.400	0.400	0
Seep Water	Herbicides	Total	Dicamba	N/A	ug/L	1,100	1	1	-	0.400	0.400	0	0.400	0.400	0
Seep Water	Herbicides	Total	Dichloroprop	N/A	ug/L	290	1	1	-	0.400	0.400	0	0.400	0.400	0
Seep Water	Herbicides	Total	Dinoseb	N/A	ug/L	37	1	1	-	0.400	0.400	0	0.400	0.400	0
Seep Water	Herbicides	Total	MCPA	N/A	ug/L	18	1	1	-	100	100	1	100	100	1
Seep Water	Herbicides	Total	MCPP	N/A	ug/L	37	1	1	-	100	100	1	100	100	1
Seep Water	Pesticides	Total	4,4'-DDD	N/A	ug/L	0.00031	1	1	-	0.0400	0.0400	1	0.0400	0.0400	1
Seep Water	Pesticides	Total	4,4'-DDE	N/A	ug/L	0.00022	1	1	-	0.0300	0.0300	1	0.0300	0.0300	1
Seep Water	Pesticides	Total	4,4'-DDT	N/A	ug/L	0.00022	1	1	-	0.0900	0.0900	1	0.0900	0.0900	1
Seep Water	Pesticides	Total	Aldrin	N/A	ug/L	0.000049	1	1	-	0.0400	0.0400	1	0.0400	0.0400	1
Seep Water	Pesticides	Total	BHC (alpha)	N/A	ug/L	0.0026	1	1	-	0.0200	0.0200	1	0.0200	0.0200	1
Seep Water	Pesticides	Total	BHC (beta)	N/A	ug/L	0.0091	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	Pesticides	Total	BHC (delta)	N/A	ug/L	0.0026	1	1	-	0.0500	0.0500	1	0.0500	0.0500	1
Seep Water	Pesticides	Total	BHC (gamma) Lindane	N/A	ug/L	0.052	1	1	-	0.0300	0.0300	0	0.0300	0.0300	0
Seep Water	Pesticides	Total	Chlordane (alpha)	N/A	ug/L	0.0008	1	1	-	0.0500	0.0500	1	0.0500	0.0500	1
Seep Water	Pesticides	Total	Chlordane (gamma)	N/A	ug/L	0.0008	1	1	-	0.0200	0.0200	1	0.0200	0.0200	1
Seep Water	Pesticides	Total	Dieldrin	N/A	ug/L	0.000052	1	1	-	0.0700	0.0700	1	0.0700	0.0700	1
Seep Water	Pesticides	Total	Endosulfan I	N/A	ug/L	62	1	1	-	0.0300	0.0300	0	0.0300	0.0300	0
Seep Water	Pesticides	Total	Endosulfan II	N/A	ug/L	62	1	1	-	0.0500	0.0500	0	0.0500	0.0500	0
Seep Water	Pesticides	Total	Endosulfan Sulfate	N/A	ug/L	62	1	1	-	0.0700	0.0700	0	0.0700	0.0700	0
Seep Water	Pesticides	Total	Endrin Aldehyde	N/A	ug/L	0.29	1	1	-	0.100	0.100	0	0.100	0.100	0
Seep Water	Pesticides	Total	Endrin	N/A	ug/L	0.059	1	1	-	0.0800	0.0800	1	0.0800	0.0800	1
Seep Water	Pesticides	Total	Heptachlor Epoxide	N/A	ug/L	0.000039	1	1	-	0.0300	0.0300	1	0.0300	0.0300	1
Seep Water	Pesticides	Total	Heptachlor	N/A	ug/L	0.000079	1	1	-	0.0300	0.0300	1	0.0300	0.0300	1
Seep Water	Pesticides	Total	Methoxychlor	N/A	ug/L	100	1	1	-	0.500	0.500	0	0.500	0.500	0
Seep Water	Pesticides	Total	Toxaphene	N/A	ug/L	0.00028	1	1	-	1.50	1.50	1	1.50	1.50	1
Seep Water	PCB Aroclors	Total	Aroclor 1016	N/A	ug/L	0.000064	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	PCB Aroclors	Total	Aroclor 1221	N/A	ug/L	0.000064	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	PCB Aroclors	Total	Aroclor 1232	N/A	ug/L	0.000064	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	PCB Aroclors	Total	Aroclor 1242	N/A	ug/L	0.000064	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	PCB Aroclors	Total	Aroclor 1248	N/A	ug/L	0.000064	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	PCB Aroclors	Total	Aroclor 1254	N/A	ug/L	0.000064	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	PCB Aroclors	Total	Aroclor 1260	N/A	ug/L	0.000064	1	1	-	0.100	0.100	1	0.100	0.100	1

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(17 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Seep Water	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	90	5	3	1	13.0	250	2	110	250	4
Seep Water	NWTPH-Dx	Total	Residual Range Organics	N/A	ug/L	290	5	4	-	23.0	500	1	110	500	1
Seep Water	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	100	5	5	-	13.0	250	1	250	250	5
Seep Water	SVOCs	Total	1,2,4-Trichlorobenzene	N/A	ug/L	2.3	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	1,2-Dichlorobenzene	N/A	ug/L	370	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	1,3-Dichlorobenzene	N/A	ug/L	0.42	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	0.42	5	5	-	0.0290	4.76	1	0.200	4.76	1
Seep Water	SVOCs	Total	2,4,5-Trichlorophenol	N/A	ug/L	1,800	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2,4,6-Trichlorophenol	N/A	ug/L	1.4	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	2,4-Dichlorophenol	N/A	ug/L	77	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2,4-Dimethylphenol	N/A	ug/L	380	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2,4-Dinitrophenol	N/A	ug/L	69	1	1	-	9.52	9.52	0	9.52	9.52	0
Seep Water	SVOCs	Total	2,4-Dinitrotoluene	N/A	ug/L	0.11	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	2,6-Dinitrotoluene	N/A	ug/L	37	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2-Chloronaphthalene	N/A	ug/L	1,000	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2-Chlorophenol	N/A	ug/L	81	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2-Methylnaphthalene	N/A	ug/L	150	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2-Methylphenol	N/A	ug/L	1,800	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2-Nitroaniline	N/A	ug/L	370	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2-Nitrophenol	N/A	ug/L	10,000	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	3,3'-Dichlorobenzidine	N/A	ug/L	0.021	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	3-Nitroaniline	N/A	ug/L	3.4	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	4,6-Dinitro-2-methylphenol	N/A	ug/L	2.9	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	4-Bromophenyl Phenyl Ether	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	4-Chloro-3-methylphenol	N/A	ug/L	3,700	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	4-Chloroaniline	N/A	ug/L	0.34	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	4-Chlorophenyl Phenyl Ether	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	4-Nitroaniline	N/A	ug/L	3.4	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	4-Nitrophenol	N/A	ug/L	10,000	5	5	-	0.280	4.76	0	2.00	4.76	0
Seep Water	SVOCs	Total	Acenaphthene	N/A	ug/L	670	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Acenaphthylene	N/A	ug/L	0.14	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Aniline	N/A	ug/L	12	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Anthracene	N/A	ug/L	8,300	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Benzidine	N/A	ug/L	0.000086	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Benzo(a)anthracene	N/A	ug/L	0.0038	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Benzo(a)pyrene	N/A	ug/L	0.0029	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Benzo(b)fluoranthene	N/A	ug/L	0.0038	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Benzo(g,h,i)perylene	N/A	ug/L	0.290	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Benzo(k)fluoranthene	N/A	ug/L	0.0038	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Benzyl Alcohol	N/A	ug/L	3,700	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Bis(2-chloroethoxy)methane	N/A	ug/L	110	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Bis(2-chloroethyl) Ether	N/A	ug/L	0.012	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Bis(2-chloroisopropyl) Ether	N/A	ug/L	1,400	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	ug/L	1.2	1	1	-	23.8	23.8	1	23.8	23.8	1
Seep Water	SVOCs	Total	Butyl Benzyl Phthalate	N/A	ug/L	35	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Carbazole	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	Chrysene	N/A	ug/L	0.0038	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Dibenz(a,h)anthracene	N/A	ug/L	0.0029	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Dibenzofuran	N/A	ug/L	37	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Diethyl Phthalate	N/A	ug/L	17,000	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Dimethyl Phthalate	N/A	ug/L	29,000	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Di-n-butyl Phthalate	N/A	ug/L	2,000	1	1	-	4.76	4.76	0	4.76	4.76	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(18 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Seep Water	SVOCs	Total	Di-n-octyl Phthalate	N/A	ug/L	1.2	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Fluoranthene	N/A	ug/L	130	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Fluorene	N/A	ug/L	1,100	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Hexachlorobenzene	N/A	ug/L	0.00028	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Hexachlorobutadiene	N/A	ug/L	0.44	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Hexachlorocyclopentadiene	N/A	ug/L	40	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Hexachloroethane	N/A	ug/L	1.4	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Indeno(1,2,3-cd)pyrene	N/A	ug/L	0.0038	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Isophorone	N/A	ug/L	35	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Naphthalene	N/A	ug/L	0.14	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Nitrobenzene	N/A	ug/L	0.12	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	N-Nitrosodimethylamine	N/A	ug/L	0.00042	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	N-Nitrosodi-n-propylamine	N/A	ug/L	0.005	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	N-Nitrosodiphenylamine	N/A	ug/L	3.3	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	ug/L	180	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Pentachlorophenol	N/A	ug/L	0.27	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Phenanthrene	N/A	ug/L	8,300	5	5	-	0.0220	4.76	0	0.200	4.76	0
Seep Water	SVOCs	Total	Phenol	N/A	ug/L	10,000	5	5	-	0.0630	4.76	0	0.490	4.76	0
Seep Water	SVOCs	Total	Pyrene	N/A	ug/L	830	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	ug/L	0.52	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	ug/L	9,100	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	ug/L	0.067	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	1,1,2-Trichloroethane	N/A	ug/L	0.23	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	1,1-Dichloroethane	N/A	ug/L	2.3	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,1-Dichloroethene	N/A	ug/L	330	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,1-Dichloropropene	N/A	ug/L	0.43	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	1,2,3-Trichlorobenzene	N/A	ug/L	29	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,2,3-Trichloropropane	N/A	ug/L	0.00072	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	1,2,4-Trichlorobenzene	N/A	ug/L	2.3	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,2,4-Trimethylbenzene	N/A	ug/L	15	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	ug/L	0.00032	1	1	-	5.00	5.00	1	5.00	5.00	1
Seep Water	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	ug/L	0.0063	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	1,2-Dichlorobenzene	N/A	ug/L	370	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	ug/L	0.14	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	1,2-Dichloropropane	N/A	ug/L	0.39	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	1,3,5-Trimethylbenzene	N/A	ug/L	12	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,3-Dichlorobenzene	N/A	ug/L	0.42	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	1,3-Dichloropropane	N/A	ug/L	730	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	0.42	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	2,2-Dichloropropane	N/A	ug/L	0.39	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	2-Butanone (MEK)	N/A	ug/L	7,100	1	1	-	10.0	10.0	0	10.0	10.0	0
Seep Water	VOCs	Total	2-Chlorotoluene	N/A	ug/L	730	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	2-Hexanone	N/A	ug/L	47	1	1	-	10.0	10.0	0	10.0	10.0	0
Seep Water	VOCs	Total	4-Chlorotoluene	N/A	ug/L	2,600	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	4-Isopropyltoluene	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	ug/L	2,000	1	1	-	10.0	10.0	0	10.0	10.0	0
Seep Water	VOCs	Total	Acetone	N/A	ug/L	22,000	1	1	-	10.0	10.0	0	10.0	10.0	0
Seep Water	VOCs	Total	Benzene	N/A	ug/L	0.39	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	Bromobenzene	N/A	ug/L	88	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Bromochloromethane	N/A	ug/L	0.12	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	Bromodichloromethane	N/A	ug/L	0.12	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	Bromoform	N/A	ug/L	4.3	1	1	-	1.00	1.00	0	1.00	1.00	0

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(19 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Seep Water	VOCs	Total	Bromomethane	N/A	ug/L	8.7	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Carbon Disulfide	N/A	ug/L	1,000	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Carbon Tetrachloride	N/A	ug/L	0.19	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	Chlorobenzene	N/A	ug/L	91	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Chloroethane	N/A	ug/L	21,000	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Chloroform	N/A	ug/L	0.19	5	3	-	0.0820	1.00	1	0.500	1.00	3
Seep Water	VOCs	Total	Chloromethane	N/A	ug/L	190	1	1	-	5.00	5.00	0	5.00	5.00	0
Seep Water	VOCs	Total	cis-1,2-Dichloroethene	N/A	ug/L	360	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	cis-1,3-Dichloropropene	N/A	ug/L	0.43	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	Dibromochloromethane	N/A	ug/L	0.4	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	Dibromomethane	N/A	ug/L	8.2	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Dichlorodifluoromethane	N/A	ug/L	390	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	ug/L	4.4	1	1	-	5.00	5.00	1	5.00	5.00	1
Seep Water	VOCs	Total	Ethylbenzene	N/A	ug/L	1.4	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Hexachlorobutadiene	N/A	ug/L	0.44	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	Isopropylbenzene	N/A	ug/L	680	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	m,p-Xylenes	N/A	ug/L	200	1	1	-	2.00	2.00	0	2.00	2.00	0
Seep Water	VOCs	Total	Naphthalene	N/A	ug/L	0.14	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	n-Butylbenzene	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	n-Propylbenzene	N/A	ug/L	1,300	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	o-Xylene	N/A	ug/L	1,200	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	sec-Butylbenzene	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	Styrene	N/A	ug/L	1,600	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	tert-Butylbenzene	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	0.093	5	2	1	0.0970	1.00	2	0.500	1.00	3
Seep Water	VOCs	Total	Toluene	N/A	ug/L	1,300	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	trans-1,2-Dichloroethene	N/A	ug/L	110	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	trans-1,3-Dichloropropene	N/A	ug/L	0.43	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	Trichloroethene (TCE)	N/A	ug/L	0.039	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	Trichlorofluoromethane	N/A	ug/L	1,300	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Vinyl Chloride	N/A	ug/L	0.025	5	5	-	0.0440	1.00	5	0.500	1.00	5
Surface Water	Metals	Total	Arsenic	N/A	ug/L	0.018	4	1	-	1.10	1.10	1	1.10	1.10	1
Surface Water	Metals	Total	Mercury	N/A	ug/L	11	1	1	-	0.0300	0.0300	0	0.200	0.200	0
Surface Water	Metals	Dissolved	Iron	N/A	ug/L	300	4	3	1	4.00	20.0	0	20.0	20.0	0
Surface Water	Metals	Dissolved	Lead	N/A	ug/L	15	4	1	3	0.00900	0.00900	0	0.0300	0.0500	0
Surface Water	Metals	Dissolved	Mercury	N/A	ug/L	11	1	1	-	0.0300	0.0300	0	0.200	0.200	0
Surface Water	Butyltins	Total	Dibutyltin	N/A	ug/L	11	4	4	-	0.00730	0.00810	0	0.0500	0.0500	0
Surface Water	Butyltins	Total	Monobutyltin	N/A	ug/L	11	4	4	-	0.0110	0.0290	0	0.0500	0.0870	0
Surface Water	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	90	4	2	2	12.0	120	1	100	120	4
Surface Water	NWTPH-Dx	Total	Residual Range Organics	N/A	ug/L	290	4	4	-	20.0	120	0	100	120	0
Surface Water	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	100	4	4	-	13.0	13.0	0	250	250	4
Surface Water	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	0.42	4	4	-	0.0290	0.0310	0	0.200	0.210	0
Surface Water	SVOCs	Total	4-Nitrophenol	N/A	ug/L	10,000	4	4	-	0.280	0.300	0	2.00	2.10	0
Surface Water	SVOCs	Total	Phenanthrene	N/A	ug/L	8,300	4	4	-	0.0220	0.0230	0	0.200	0.210	0
Surface Water	SVOCs	Total	Phenol	N/A	ug/L	10,000	4	4	-	0.0630	0.0660	0	0.480	0.530	0
Surface Water	VOCs	Total	Chloroform	N/A	ug/L	0.19	4	4	-	0.0820	0.0820	0	0.500	0.500	4
Surface Water	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	0.093	4	4	-	0.0970	0.0970	4	0.500	0.500	4
Surface Water	VOCs	Total	Vinyl Chloride	N/A	ug/L	0.025	4	4	-	0.0440	0.0440	4	0.500	0.500	4

Notes

The potentially mass wasting soil subset is comprised of the following samples: BIL01USE through BIL09USE, BIL13SSI, and L-01 through L-04.

= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

Table K-1
Human Health Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(20 of 20)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV

= When the number of applicable MRLs > SLV is higher than the number of applicable MDLs > SLV, they are highlited pink when the number of MDLs > SLV is zero or difference is more than 1.

HH = human health
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit
MW Soil = Mass Wasting Soil
N/A = not applicable
ND = non-detect
NV = No value
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SLV = screening level value
SVOC = semi-volatile organic carbon
VOC = volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	Metals	Total	Antimony	0-3 ft	N/A	mg/kg	410	75	20	35	0.160	4.01	0	0.160	4.12	0
Soil	Metals	Total	Antimony	0-10 ft	N/A	mg/kg	410	78	20	36	0.160	4.01	0	0.160	4.12	0
Soil	Metals	Total	Arsenic	0-3 ft	N/A	mg/kg	5.40	75	1	3	0.159	0.159	0	0.907	1.08	0
Soil	Metals	Total	Arsenic	0-10 ft	N/A	mg/kg	5.40	78	1	3	0.159	0.159	0	0.907	1.08	0
Soil	Metals	Total	Beryllium	0-3 ft	N/A	mg/kg	610	75	31	36	0.147	0.191	0	0.248	1.23	0
Soil	Metals	Total	Beryllium	0-10 ft	N/A	mg/kg	610	78	31	36	0.147	0.191	0	0.248	1.23	0
Soil	Metals	Total	Cadmium	0-3 ft	N/A	mg/kg	150	75	8	4	0.0122	0.0153	0	0.248	0.540	0
Soil	Metals	Total	Cadmium	0-10 ft	N/A	mg/kg	150	78	11	4	0.0122	0.0153	0	0.248	0.540	0
Soil	Metals	Total	Lead	0-3 ft	<250um	mg/kg	800	16	0	4	-	-	-	9.80	10.0	0
Soil	Metals	Total	Lead	0-3 ft	<2mm	mg/kg	800	16	0	4	-	-	-	8.20	9.90	0
Soil	Metals	Total	Lead	0-10 ft	<250um	mg/kg	800	16	0	4	-	-	-	9.80	10.0	0
Soil	Metals	Total	Lead	0-10 ft	<2mm	mg/kg	800	16	0	4	-	-	-	8.20	9.90	0
Soil	Metals	Total	Mercury	0-3 ft	N/A	mg/kg	93	75	17	19	0.00528	0.0338	0	0.0196	0.0514	0
Soil	Metals	Total	Mercury	0-10 ft	N/A	mg/kg	93	78	17	20	0.00528	0.0338	0	0.0196	0.0514	0
Soil	Metals	Total	Selenium	0-3 ft	N/A	mg/kg	5,100	75	32	38	0.0781	0.517	0	0.248	4.12	0
Soil	Metals	Total	Selenium	0-10 ft	N/A	mg/kg	5,100	78	32	38	0.0781	0.517	0	0.248	4.12	0
Soil	Metals	Total	Silver	0-3 ft	N/A	mg/kg	1,500	75	3	49	0.0440	0.0524	0	0.0680	0.687	0
Soil	Metals	Total	Silver	0-10 ft	N/A	mg/kg	1,500	78	3	51	0.0440	0.0524	0	0.0680	0.687	0
Soil	Metals	Total	Thallium	0-3 ft	N/A	mg/kg	0.203	75	12	45	0.0429	0.0558	0	0.248	0.687	57
Soil	Metals	Total	Thallium	0-10 ft	N/A	mg/kg	0.203	78	12	48	0.0429	0.0558	0	0.248	0.687	60
Soil	Butyltins	Total	Dibutyltin	0-3 ft	N/A	ug/kg	180,000	62	44	1	0.270	0.887	0	1.20	2.64	0
Soil	Butyltins	Total	Dibutyltin	0-10 ft	N/A	ug/kg	180,000	62	44	1	0.270	0.887	0	1.20	2.64	0
Soil	Butyltins	Total	Monobutyltin	0-3 ft	N/A	ug/kg	180,000	62	40	4	0.240	1.87	0	1.20	3.52	0
Soil	Butyltins	Total	Monobutyltin	0-10 ft	N/A	ug/kg	180,000	62	40	4	0.240	1.87	0	1.20	3.52	0
Soil	Butyltins	Total	Tetrabutyltin	0-3 ft	N/A	ug/kg	180,000	44	43	-	0.445	0.910	0	1.20	2.42	0
Soil	Butyltins	Total	Tetrabutyltin	0-10 ft	N/A	ug/kg	180,000	44	43	-	0.445	0.910	0	1.20	2.42	0
Soil	Butyltins	Total	Tributyltin	0-3 ft	N/A	ug/kg	180,000	62	46	2	0.340	1.53	0	1.20	3.52	0
Soil	Butyltins	Total	Tributyltin	0-10 ft	N/A	ug/kg	180,000	62	46	2	0.340	1.53	0	1.20	3.52	0
Soil	Herbicides	Total	2,4,5-T	0-3 ft	N/A	ug/kg	6,200,000	12	12	-	1.26	1.58	0	5.77	7.23	0
Soil	Herbicides	Total	2,4,5-T	0-10 ft	N/A	ug/kg	6,200,000	12	12	-	1.26	1.58	0	5.77	7.23	0
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-3 ft	N/A	ug/kg	4,900,000	12	12	-	1.84	2.31	0	5.77	7.23	0
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-10 ft	N/A	ug/kg	4,900,000	12	12	-	1.84	2.31	0	5.77	7.23	0
Soil	Herbicides	Total	2,4-D	0-3 ft	N/A	ug/kg	2,400,000	12	12	-	0.476	5.68	0	5.77	7.23	0
Soil	Herbicides	Total	2,4-D	0-10 ft	N/A	ug/kg	2,400,000	12	12	-	0.476	5.68	0	5.77	7.23	0
Soil	Herbicides	Total	2,4-DB	0-3 ft	N/A	ug/kg	4,900,000	12	12	-	0.568	1.01	0	5.77	7.23	0
Soil	Herbicides	Total	2,4-DB	0-10 ft	N/A	ug/kg	4,900,000	12	12	-	0.568	1.01	0	5.77	7.23	0
Soil	Herbicides	Total	4-Nitrophenol	0-3 ft	N/A	ug/kg	180,000,000	12	12	-	1.27	1.60	0	5.77	7.23	0
Soil	Herbicides	Total	4-Nitrophenol	0-10 ft	N/A	ug/kg	180,000,000	12	12	-	1.27	1.60	0	5.77	7.23	0
Soil	Herbicides	Total	Dalapon	0-3 ft	N/A	ug/kg	18,000,000	12	12	-	1.76	2.20	0	5.77	7.23	0
Soil	Herbicides	Total	Dalapon	0-10 ft	N/A	ug/kg	18,000,000	12	12	-	1.76	2.20	0	5.77	7.23	0
Soil	Herbicides	Total	Dicamba	0-3 ft	N/A	ug/kg	18,000,000	12	12	-	1.40	1.76	0	5.77	7.23	0
Soil	Herbicides	Total	Dicamba	0-10 ft	N/A	ug/kg	18,000,000	12	12	-	1.40	1.76	0	5.77	7.23	0
Soil	Herbicides	Total	Dichloroprop	0-3 ft	N/A	ug/kg	4,900,000	12	12	-	0.614	0.770	0	5.77	7.23	0
Soil	Herbicides	Total	Dichloroprop	0-10 ft	N/A	ug/kg	4,900,000	12	12	-	0.614	0.770	0	5.77	7.23	0
Soil	Herbicides	Total	Dinoseb	0-3 ft	N/A	ug/kg	620,000	12	12	-	0.476	0.596	0	5.77	7.23	0
Soil	Herbicides	Total	Dinoseb	0-10 ft	N/A	ug/kg	620,000	12	12	-	0.476	0.596	0	5.77	7.23	0
Soil	Herbicides	Total	MCPA	0-3 ft	N/A	ug/kg	120,000	12	12	-	0.868	1.09	0	5.77	7.23	0
Soil	Herbicides	Total	MCPA	0-10 ft	N/A	ug/kg	120,000	12	12	-	0.868	1.09	0	5.77	7.23	0
Soil	Herbicides	Total	MCPP	0-3 ft	N/A	ug/kg	620,000	12	12	-	1.58	1.98	0	5.77	7.23	0
Soil	Herbicides	Total	MCPP	0-10 ft	N/A	ug/kg	620,000	12	12	-	1.58	1.98	0	5.77	7.23	0
Soil	Herbicides	Total	Pentachlorophenol	0-3 ft	N/A	ug/kg	13,000	12	12	-	0.673	0.843	0	5.77	7.23	0
Soil	Herbicides	Total	Pentachlorophenol	0-10 ft	N/A	ug/kg	13,000	12	12	-	0.673	0.843	0	5.77	7.23	0
Soil	Pesticides	Total	4,4'-DDD	0-3 ft	N/A	ug/kg	11,000	37	35	2	0.110	10.0	0	0.630	10.0	0
Soil	Pesticides	Total	4,4'-DDD	0-10 ft	N/A	ug/kg	11,000	37	35	2	0.110	10.0	0	0.630	10.0	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(2 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	Pesticides	Total	4,4'-DDE	0-3 ft	N/A	ug/kg	7,700	37	30	6	0.110	7.80	0	0.660	7.80	0
Soil	Pesticides	Total	4,4'-DDE	0-10 ft	N/A	ug/kg	7,700	37	30	6	0.110	7.80	0	0.660	7.80	0
Soil	Pesticides	Total	4,4'-DDT	0-3 ft	N/A	ug/kg	7,700	37	15	3	0.170	78.0	0	0.990	78.0	0
Soil	Pesticides	Total	4,4'-DDT	0-10 ft	N/A	ug/kg	7,700	37	15	3	0.170	78.0	0	0.990	78.0	0
Soil	Pesticides	Total	Aldrin	0-3 ft	N/A	ug/kg	130	37	36	1	0.101	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Aldrin	0-10 ft	N/A	ug/kg	130	37	36	1	0.101	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (alpha)	0-3 ft	N/A	ug/kg	340	37	37	-	0.0981	1.12	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (alpha)	0-10 ft	N/A	ug/kg	340	37	37	-	0.0981	1.12	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (beta)	0-3 ft	N/A	ug/kg	960	37	36	1	0.109	3.78	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (beta)	0-10 ft	N/A	ug/kg	960	37	36	1	0.109	3.78	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (delta)	0-3 ft	N/A	ug/kg	340	37	35	1	0.0740	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (delta)	0-10 ft	N/A	ug/kg	340	37	35	1	0.0740	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (gamma) Lindane	0-3 ft	N/A	ug/kg	2,000	37	34	1	0.0800	37.0	0	0.630	37.0	0
Soil	Pesticides	Total	BHC (gamma) Lindane	0-10 ft	N/A	ug/kg	2,000	37	34	1	0.0800	37.0	0	0.630	37.0	0
Soil	Pesticides	Total	Chlordane (alpha)	0-3 ft	N/A	ug/kg	7,200	25	22	3	0.100	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Chlordane (alpha)	0-10 ft	N/A	ug/kg	7,200	25	22	3	0.100	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Chlordane (gamma)	0-3 ft	N/A	ug/kg	7,200	25	15	3	0.0900	9.90	0	0.630	9.90	0
Soil	Pesticides	Total	Chlordane (gamma)	0-10 ft	N/A	ug/kg	7,200	25	15	3	0.0900	9.90	0	0.630	9.90	0
Soil	Pesticides	Total	Chlordane (technical)	0-3 ft	N/A	ug/kg	7,200	12	12	-	1.34	11.2	0	9.50	19.8	0
Soil	Pesticides	Total	Chlordane (technical)	0-10 ft	N/A	ug/kg	7,200	12	12	-	1.34	11.2	0	9.50	19.8	0
Soil	Pesticides	Total	Dieldrin	0-3 ft	N/A	ug/kg	130	37	35	2	0.140	31.0	0	0.630	31.0	0
Soil	Pesticides	Total	Dieldrin	0-10 ft	N/A	ug/kg	130	37	35	2	0.140	31.0	0	0.630	31.0	0
Soil	Pesticides	Total	Endosulfan I	0-3 ft	N/A	ug/kg	1,400,000	37	32	2	0.0630	9.50	0	0.630	9.50	0
Soil	Pesticides	Total	Endosulfan I	0-10 ft	N/A	ug/kg	1,400,000	37	32	2	0.0630	9.50	0	0.630	9.50	0
Soil	Pesticides	Total	Endosulfan II	0-3 ft	N/A	ug/kg	1,400,000	37	34	3	0.140	8.40	0	0.630	8.40	0
Soil	Pesticides	Total	Endosulfan II	0-10 ft	N/A	ug/kg	1,400,000	37	34	3	0.140	8.40	0	0.630	8.40	0
Soil	Pesticides	Total	Endosulfan Sulfate	0-3 ft	N/A	ug/kg	1,400,000	37	31	4	0.110	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Endosulfan Sulfate	0-10 ft	N/A	ug/kg	1,400,000	37	31	4	0.110	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Endrin Aldehyde	0-3 ft	N/A	ug/kg	71,000	37	32	2	0.120	9.60	0	0.630	9.60	0
Soil	Pesticides	Total	Endrin Aldehyde	0-10 ft	N/A	ug/kg	71,000	37	32	2	0.120	9.60	0	0.630	9.60	0
Soil	Pesticides	Total	Endrin Ketone	0-3 ft	N/A	ug/kg	71,000	37	33	2	0.0930	21.0	0	0.630	21.0	0
Soil	Pesticides	Total	Endrin Ketone	0-10 ft	N/A	ug/kg	71,000	37	33	2	0.0930	21.0	0	0.630	21.0	0
Soil	Pesticides	Total	Endrin	0-3 ft	N/A	ug/kg	71,000	37	33	1	0.0940	6.80	0	0.630	6.80	0
Soil	Pesticides	Total	Endrin	0-10 ft	N/A	ug/kg	71,000	37	33	1	0.0940	6.80	0	0.630	6.80	0
Soil	Pesticides	Total	Heptachlor Epoxide	0-3 ft	N/A	ug/kg	240	37	36	1	0.0840	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Heptachlor Epoxide	0-10 ft	N/A	ug/kg	240	37	36	1	0.0840	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Heptachlor	0-3 ft	N/A	ug/kg	480	37	33	4	0.0981	5.00	0	0.660	5.00	0
Soil	Pesticides	Total	Heptachlor	0-10 ft	N/A	ug/kg	480	37	33	4	0.0981	5.00	0	0.660	5.00	0
Soil	Pesticides	Total	Methoxychlor	0-3 ft	N/A	ug/kg	3,100,000	37	35	-	0.141	11.2	0	0.630	19.8	0
Soil	Pesticides	Total	Methoxychlor	0-10 ft	N/A	ug/kg	3,100,000	37	35	-	0.141	11.2	0	0.630	19.8	0
Soil	Pesticides	Total	Toxaphene	0-3 ft	N/A	ug/kg	2,000	37	37	-	4.80	2,900	2	43.0	2,900	2
Soil	Pesticides	Total	Toxaphene	0-10 ft	N/A	ug/kg	2,000	37	37	-	4.80	2,900	2	43.0	2,900	2
Soil	PCB Aroclors	Total	Aroclor 1016	0-3 ft	N/A	ug/kg	21,000	73	73	-	1.08	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1016	0-10 ft	N/A	ug/kg	21,000	73	73	-	1.08	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1221	0-3 ft	N/A	ug/kg	540	73	73	-	2.10	11.0	0	9.82	100	0
Soil	PCB Aroclors	Total	Aroclor 1221	0-10 ft	N/A	ug/kg	540	73	73	-	2.10	11.0	0	9.82	100	0
Soil	PCB Aroclors	Total	Aroclor 1232	0-3 ft	N/A	ug/kg	540	73	73	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1232	0-10 ft	N/A	ug/kg	540	73	73	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1242	0-3 ft	N/A	ug/kg	740	73	73	-	1.97	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1242	0-10 ft	N/A	ug/kg	740	73	73	-	1.97	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1248	0-3 ft	N/A	ug/kg	740	73	73	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1248	0-10 ft	N/A	ug/kg	740	73	73	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1254	0-3 ft	N/A	ug/kg	740	73	63	-	1.53	2.10	0	6.30	13.2	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(3 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	PCB Aroclors	Total	Aroclor 1254	0-10 ft	N/A	ug/kg	740	73	63	-	1.53	2.10	0	6.30	13.2	0
Soil	PCB Aroclors	Total	Aroclor 1260	0-3 ft	N/A	ug/kg	740	73	12	19	1.54	2.10	0	9.82	13.4	0
Soil	PCB Aroclors	Total	Aroclor 1260	0-10 ft	N/A	ug/kg	740	73	12	19	1.54	2.10	0	9.82	13.4	0
Soil	PCB Aroclors	Total	Aroclor 1262	0-3 ft	N/A	ug/kg	540	18	18	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1262	0-10 ft	N/A	ug/kg	540	18	18	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1268	0-3 ft	N/A	ug/kg	540	18	18	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1268	0-10 ft	N/A	ug/kg	540	18	18	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-3 ft	N/A	ug/kg	740	73	12	-	3.08	4.20	0	19.7	26.4	0
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-10 ft	N/A	ug/kg	740	73	12	-	3.08	4.20	0	19.7	26.4	0
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-3 ft	N/A	mg/kg	23,000	74	11	21	5.02	14.9	0	24.9	36.0	0
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-10 ft	N/A	mg/kg	23,000	77	14	21	5.02	14.9	0	24.9	36.0	0
Soil	NWTPH-Dx	Total	Residual Range Organics	0-3 ft	N/A	mg/kg	40,000	74	8	14	10.0	29.7	0	49.9	140	0
Soil	NWTPH-Dx	Total	Residual Range Organics	0-10 ft	N/A	mg/kg	40,000	77	11	14	10.0	29.7	0	49.9	140	0
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-3 ft	N/A	mg/kg	13,000	44	34	8	0.121	5.00	0	2.60	5.20	0
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-10 ft	N/A	mg/kg	13,000	47	37	8	0.121	5.00	0	2.60	5.20	0
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	N/A	ug/kg	99,000	39	39	-	0.880	75.0	0	5.18	340	0
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-10 ft	N/A	ug/kg	99,000	42	42	-	0.880	75.0	0	5.18	340	0
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-3 ft	N/A	ug/kg	9,800,000	39	39	-	0.703	65.0	0	5.18	340	0
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-10 ft	N/A	ug/kg	9,800,000	42	42	-	0.703	65.0	0	5.18	340	0
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-3 ft	N/A	ug/kg	36,000	39	39	-	0.883	80.0	0	5.18	340	0
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-10 ft	N/A	ug/kg	36,000	42	42	-	0.883	80.0	0	5.18	340	0
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-3 ft	N/A	ug/kg	36,000	39	39	-	0.871	95.0	0	5.18	340	0
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-10 ft	N/A	ug/kg	36,000	42	42	-	0.871	95.0	0	5.18	340	0
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-3 ft	N/A	ug/kg	62,000,000	39	39	-	0.804	150	0	5.18	340	0
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-10 ft	N/A	ug/kg	62,000,000	42	42	-	0.804	150	0	5.18	340	0
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-3 ft	N/A	ug/kg	200,000	39	39	-	0.819	90.0	0	5.18	340	0
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-10 ft	N/A	ug/kg	200,000	42	42	-	0.819	90.0	0	5.18	340	0
Soil	SVOCs	Total	2,4-Dichlorophenol	0-3 ft	N/A	ug/kg	1,800,000	39	39	-	0.919	90.0	0	5.18	340	0
Soil	SVOCs	Total	2,4-Dichlorophenol	0-10 ft	N/A	ug/kg	1,800,000	42	42	-	0.919	90.0	0	5.18	340	0
Soil	SVOCs	Total	2,4-Dimethylphenol	0-3 ft	N/A	ug/kg	12,000,000	39	39	-	0.793	280	0	2.07	1,700	0
Soil	SVOCs	Total	2,4-Dimethylphenol	0-10 ft	N/A	ug/kg	12,000,000	42	42	-	0.793	280	0	2.07	1,700	0
Soil	SVOCs	Total	2,4-Dinitrophenol	0-3 ft	N/A	ug/kg	1,200,000	39	39	-	2.81	1,800	0	29.3	6,700	0
Soil	SVOCs	Total	2,4-Dinitrophenol	0-10 ft	N/A	ug/kg	1,200,000	42	42	-	2.81	1,800	0	29.3	6,700	0
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-3 ft	N/A	ug/kg	5,500	39	39	-	1.52	140	0	6.40	340	0
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-10 ft	N/A	ug/kg	5,500	42	42	-	1.52	140	0	6.40	340	0
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-3 ft	N/A	ug/kg	240,000	39	39	-	1.11	140	0	5.18	340	0
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-10 ft	N/A	ug/kg	240,000	42	42	-	1.11	140	0	5.18	340	0
Soil	SVOCs	Total	2-Chloronaphthalene	0-3 ft	N/A	ug/kg	82,000,000	39	39	-	0.351	180	0	1.17	340	0
Soil	SVOCs	Total	2-Chloronaphthalene	0-10 ft	N/A	ug/kg	82,000,000	42	42	-	0.351	180	0	1.17	340	0
Soil	SVOCs	Total	2-Chlorophenol	0-3 ft	N/A	ug/kg	5,100,000	39	39	-	0.697	85.0	0	5.18	340	0
Soil	SVOCs	Total	2-Chlorophenol	0-10 ft	N/A	ug/kg	5,100,000	42	42	-	0.697	85.0	0	5.18	340	0
Soil	SVOCs	Total	2-Methylphenol	0-3 ft	N/A	ug/kg	31,000,000	39	39	-	0.978	170	0	5.18	340	0
Soil	SVOCs	Total	2-Methylphenol	0-10 ft	N/A	ug/kg	31,000,000	42	42	-	0.978	170	0	5.18	340	0
Soil	SVOCs	Total	2-Nitroaniline	0-3 ft	N/A	ug/kg	6,000,000	39	39	-	0.563	140	0	2.07	670	0
Soil	SVOCs	Total	2-Nitroaniline	0-10 ft	N/A	ug/kg	6,000,000	42	42	-	0.563	140	0	2.07	670	0
Soil	SVOCs	Total	2-Nitrophenol	0-3 ft	N/A	ug/kg	180,000,000	39	39	-	1.18	130	0	5.18	340	0
Soil	SVOCs	Total	2-Nitrophenol	0-10 ft	N/A	ug/kg	180,000,000	42	42	-	1.18	130	0	5.18	340	0
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-3 ft	N/A	ug/kg	4,800	39	39	-	1.29	190	0	11.7	3,400	0
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-10 ft	N/A	ug/kg	4,800	42	42	-	1.29	190	0	11.7	3,400	0
Soil	SVOCs	Total	3-Nitroaniline	0-3 ft	N/A	ug/kg	6,000,000	39	39	-	1.99	130	0	10.4	670	0
Soil	SVOCs	Total	3-Nitroaniline	0-10 ft	N/A	ug/kg	6,000,000	42	42	-	1.99	130	0	10.4	670	0
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-3 ft	N/A	ug/kg	49,000	39	39	-	1.51	85.0	0	10.4	3,400	0
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-10 ft	N/A	ug/kg	49,000	42	42	-	1.51	85.0	0	10.4	3,400	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(4 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-3 ft	N/A	ug/kg	NV	39	39	-	1.40	70.0	-	6.40	340	-
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-10 ft	N/A	ug/kg	NV	42	42	-	1.40	70.0	-	6.40	340	-
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-3 ft	N/A	ug/kg	62,000,000	39	39	-	0.925	110	0	5.18	340	0
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-10 ft	N/A	ug/kg	62,000,000	42	42	-	0.925	110	0	5.18	340	0
Soil	SVOCs	Total	4-Chloroaniline	0-3 ft	N/A	ug/kg	8,600	39	39	-	0.963	110	0	6.40	340	0
Soil	SVOCs	Total	4-Chloroaniline	0-10 ft	N/A	ug/kg	8,600	42	42	-	0.963	110	0	6.40	340	0
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-3 ft	N/A	ug/kg	NV	39	39	-	1.97	100	-	6.40	340	-
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-10 ft	N/A	ug/kg	NV	42	42	-	1.97	100	-	6.40	340	-
Soil	SVOCs	Total	4-Nitroaniline	0-3 ft	N/A	ug/kg	86,000	39	39	-	1.99	170	0	11.7	670	0
Soil	SVOCs	Total	4-Nitroaniline	0-10 ft	N/A	ug/kg	86,000	42	42	-	1.99	170	0	11.7	670	0
Soil	SVOCs	Total	4-Nitrophenol	0-3 ft	N/A	ug/kg	180,000,000	39	39	-	2.22	1,500	0	29.3	3,400	0
Soil	SVOCs	Total	4-Nitrophenol	0-10 ft	N/A	ug/kg	180,000,000	42	42	-	2.22	1,500	0	29.3	3,400	0
Soil	SVOCs	Total	Aniline	0-3 ft	N/A	ug/kg	300,000	39	39	-	1.50	75.0	0	10.4	670	0
Soil	SVOCs	Total	Aniline	0-10 ft	N/A	ug/kg	300,000	42	42	-	1.50	75.0	0	10.4	670	0
Soil	SVOCs	Total	Benzidine	0-3 ft	N/A	ug/kg	55,000	21	21	-	2.21	31.8	0	10.4	366	0
Soil	SVOCs	Total	Benzidine	0-10 ft	N/A	ug/kg	55,000	24	24	-	2.21	31.8	0	10.4	366	0
Soil	SVOCs	Total	Benzoic Acid	0-3 ft	N/A	ug/kg	2,500,000,000	39	27	9	4.15	4,800	0	58.5	6,700	0
Soil	SVOCs	Total	Benzoic Acid	0-10 ft	N/A	ug/kg	2,500,000,000	42	30	9	4.15	4,800	0	58.5	6,700	0
Soil	SVOCs	Total	Benzyl Alcohol	0-3 ft	N/A	ug/kg	62,000,000	39	38	-	2.06	190	0	5.18	670	0
Soil	SVOCs	Total	Benzyl Alcohol	0-10 ft	N/A	ug/kg	62,000,000	42	41	-	2.06	190	0	5.18	670	0
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-3 ft	N/A	ug/kg	1,800,000	39	39	-	1.30	65.0	0	6.40	340	0
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-10 ft	N/A	ug/kg	1,800,000	42	42	-	1.30	65.0	0	6.40	340	0
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-3 ft	N/A	ug/kg	1,000	39	39	-	1.63	120	0	6.40	340	0
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-10 ft	N/A	ug/kg	1,000	42	42	-	1.63	120	0	6.40	340	0
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-3 ft	N/A	ug/kg	1,000	39	39	-	1.20	90.1	0	6.40	340	0
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-10 ft	N/A	ug/kg	1,000	42	42	-	1.20	90.1	0	6.40	340	0
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-3 ft	N/A	ug/kg	150,000	40	11	2	1.90	366	0	20.7	366	0
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-10 ft	N/A	ug/kg	150,000	43	11	3	1.90	366	0	20.7	366	0
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-3 ft	N/A	ug/kg	910,000	39	33	4	1.50	75.0	0	6.40	340	0
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-10 ft	N/A	ug/kg	910,000	42	36	4	1.50	75.0	0	6.40	340	0
Soil	SVOCs	Total	Carbazole	0-3 ft	N/A	ug/kg	1,000,000	39	15	10	1.30	57.1	0	6.40	375	0
Soil	SVOCs	Total	Carbazole	0-10 ft	N/A	ug/kg	1,000,000	42	18	10	1.30	57.1	0	6.40	375	0
Soil	SVOCs	Total	Dibenzofuran	0-3 ft	N/A	ug/kg	1,000,000	40	16	19	0.479	65.0	0	5.18	340	0
Soil	SVOCs	Total	Dibenzofuran	0-10 ft	N/A	ug/kg	1,000,000	43	19	19	0.479	65.0	0	5.18	340	0
Soil	SVOCs	Total	Diethyl Phthalate	0-3 ft	N/A	ug/kg	490,000,000	39	38	1	1.99	180	0	6.40	340	0
Soil	SVOCs	Total	Diethyl Phthalate	0-10 ft	N/A	ug/kg	490,000,000	42	41	1	1.99	180	0	6.40	340	0
Soil	SVOCs	Total	Dimethyl Phthalate	0-3 ft	N/A	ug/kg	150,000	39	36	3	1.29	90.0	0	6.40	340	0
Soil	SVOCs	Total	Dimethyl Phthalate	0-10 ft	N/A	ug/kg	150,000	42	39	3	1.29	90.0	0	6.40	340	0
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-3 ft	N/A	ug/kg	62,000,000	39	25	6	1.89	637	0	6.40	732	0
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-10 ft	N/A	ug/kg	62,000,000	42	28	6	1.89	637	0	6.40	732	0
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-3 ft	N/A	ug/kg	150,000	39	33	3	1.20	60.0	0	6.40	340	0
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-10 ft	N/A	ug/kg	150,000	42	35	3	1.20	60.0	0	6.40	340	0
Soil	SVOCs	Total	Hexachlorobenzene	0-3 ft	N/A	ug/kg	1,800	39	39	-	0.548	110	0	2.07	340	0
Soil	SVOCs	Total	Hexachlorobenzene	0-10 ft	N/A	ug/kg	1,800	42	42	-	0.548	110	0	2.07	340	0
Soil	SVOCs	Total	Hexachlorobutadiene	0-3 ft	N/A	ug/kg	22,000	39	39	-	0.757	70.0	0	5.18	340	0
Soil	SVOCs	Total	Hexachlorobutadiene	0-10 ft	N/A	ug/kg	22,000	42	42	-	0.757	70.0	0	5.18	340	0
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-3 ft	N/A	ug/kg	3,700,000	39	39	-	0.822	750	0	5.18	1,700	0
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-10 ft	N/A	ug/kg	3,700,000	42	42	-	0.822	750	0	5.18	1,700	0
Soil	SVOCs	Total	Hexachloroethane	0-3 ft	N/A	ug/kg	150,000	39	39	-	1.75	110	0	5.18	340	0
Soil	SVOCs	Total	Hexachloroethane	0-10 ft	N/A	ug/kg	150,000	42	42	-	1.75	110	0	5.18	340	0
Soil	SVOCs	Total	Isophorone	0-3 ft	N/A	ug/kg	1,800,000	39	39	-	0.522	80.0	0	6.40	340	0
Soil	SVOCs	Total	Isophorone	0-10 ft	N/A	ug/kg	1,800,000	42	42	-	0.522	80.0	0	6.40	340	0
Soil	SVOCs	Total	Nitrobenzene	0-3 ft	N/A	ug/kg	24,000	39	39	-	1.60	100	0	6.40	340	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(5 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	SVOCs	Total	Nitrobenzene	0-10 ft	N/A	ug/kg	24,000	42	42	-	1.60	100	0	6.40	340	0
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-3 ft	N/A	ug/kg	34	39	39	-	1.05	310	9	10.4	1,700	20
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-10 ft	N/A	ug/kg	34	42	42	-	1.05	310	9	10.4	1,700	20
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-3 ft	N/A	ug/kg	250	39	39	-	1.29	160	0	5.18	340	1
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-10 ft	N/A	ug/kg	250	42	42	-	1.29	160	0	5.18	340	1
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-3 ft	N/A	ug/kg	350,000	39	38	1	0.593	110	0	2.07	340	0
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-10 ft	N/A	ug/kg	350,000	42	41	1	0.593	110	0	2.07	340	0
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-3 ft	N/A	ug/kg	3,100,000	39	38	1	1.22	150	0	5.18	340	0
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-10 ft	N/A	ug/kg	3,100,000	42	41	1	1.22	150	0	5.18	340	0
Soil	SVOCs	Total	Pentachlorophenol	0-3 ft	N/A	ug/kg	13,000	39	37	2	2.01	430	0	10.4	3,400	0
Soil	SVOCs	Total	Pentachlorophenol	0-10 ft	N/A	ug/kg	13,000	42	40	2	2.01	430	0	10.4	3,400	0
Soil	SVOCs	Total	Phenol	0-3 ft	N/A	ug/kg	180,000,000	39	34	4	0.749	95.0	0	5.18	1,000	0
Soil	SVOCs	Total	Phenol	0-10 ft	N/A	ug/kg	180,000,000	42	37	4	0.749	95.0	0	5.18	1,000	0
Soil	SVOCs	Total	2-Methylnaphthalene	0-3 ft	N/A	ug/kg	4,100,000	40	22	10	0.183	60.0	0	1.17	340	0
Soil	SVOCs	Total	2-Methylnaphthalene	0-10 ft	N/A	ug/kg	4,100,000	43	24	10	0.183	60.0	0	1.17	340	0
Soil	SVOCs	Total	Acenaphthene	0-3 ft	N/A	ug/kg	19,000,000	40	9	9	0.531	1.00	0	1.23	340	0
Soil	SVOCs	Total	Acenaphthene	0-10 ft	N/A	ug/kg	19,000,000	43	11	9	0.531	1.00	0	1.23	340	0
Soil	SVOCs	Total	Acenaphthylene	0-3 ft	N/A	ug/kg	23,000	40	24	8	0.510	70.0	0	1.17	340	0
Soil	SVOCs	Total	Acenaphthylene	0-10 ft	N/A	ug/kg	23,000	43	27	8	0.510	70.0	0	1.17	340	0
Soil	SVOCs	Total	Anthracene	0-3 ft	N/A	ug/kg	93,000,000	40	5	5	0.356	1.40	0	1.41	340	0
Soil	SVOCs	Total	Anthracene	0-10 ft	N/A	ug/kg	93,000,000	43	7	5	0.356	1.40	0	1.41	340	0
Soil	SVOCs	Total	Benzo(a)anthracene	0-3 ft	N/A	ug/kg	2,700	40	5	-	0.749	1.40	0	2.07	6.50	0
Soil	SVOCs	Total	Benzo(a)anthracene	0-10 ft	N/A	ug/kg	2,700	43	7	-	0.749	1.40	0	2.07	6.50	0
Soil	SVOCs	Total	Benzo(a)pyrene	0-3 ft	N/A	ug/kg	270	40	4	-	0.656	1.60	0	2.07	6.50	0
Soil	SVOCs	Total	Benzo(a)pyrene	0-10 ft	N/A	ug/kg	270	43	6	-	0.656	1.60	0	2.07	6.50	0
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-3 ft	N/A	ug/kg	2,700	18	1	-	2.50	2.50	0	6.50	6.50	0
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-10 ft	N/A	ug/kg	2,700	18	1	-	2.50	2.50	0	6.50	6.50	0
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-3 ft	N/A	ug/kg	27,000	40	7	-	0.202	2.30	0	1.23	6.50	0
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-10 ft	N/A	ug/kg	27,000	43	9	-	0.202	2.30	0	1.23	6.50	0
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-3 ft	N/A	ug/kg	27,000	18	1	1	2.50	2.50	0	6.50	10.0	0
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-10 ft	N/A	ug/kg	27,000	18	1	1	2.50	2.50	0	6.50	10.0	0
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-3 ft	N/A	ug/kg	2,700	22	2	-	0.939	1.14	0	4.14	5.05	0
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-10 ft	N/A	ug/kg	2,700	25	4	-	0.939	1.14	0	4.14	5.05	0
Soil	SVOCs	Total	Chrysene	0-3 ft	N/A	ug/kg	270,000	40	3	1	0.741	0.903	0	2.07	6.50	0
Soil	SVOCs	Total	Chrysene	0-10 ft	N/A	ug/kg	270,000	43	5	1	0.741	0.903	0	2.07	6.50	0
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-3 ft	N/A	ug/kg	270	40	14	4	0.273	3.41	0	1.17	340	1
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-10 ft	N/A	ug/kg	270	43	17	4	0.273	3.41	0	1.17	340	1
Soil	SVOCs	Total	Fluoranthene	0-3 ft	N/A	ug/kg	8,900,000	40	3	-	1.05	2.20	0	2.07	6.50	0
Soil	SVOCs	Total	Fluoranthene	0-10 ft	N/A	ug/kg	8,900,000	43	5	-	1.05	2.20	0	2.07	6.50	0
Soil	SVOCs	Total	Fluorene	0-3 ft	N/A	ug/kg	12,000,000	40	12	5	0.573	85.0	0	1.23	340	0
Soil	SVOCs	Total	Fluorene	0-10 ft	N/A	ug/kg	12,000,000	43	15	5	0.573	85.0	0	1.23	340	0
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-3 ft	N/A	ug/kg	2,700	40	5	-	0.286	1.90	0	1.23	6.50	0
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-10 ft	N/A	ug/kg	2,700	43	7	-	0.286	1.90	0	1.23	6.50	0
Soil	SVOCs	Total	Naphthalene	0-3 ft	N/A	ug/kg	23,000	40	16	13	0.548	65.0	0	1.17	340	0
Soil	SVOCs	Total	Naphthalene	0-10 ft	N/A	ug/kg	23,000	43	19	13	0.548	65.0	0	1.17	340	0
Soil	SVOCs	Total	Phenanthrene	0-3 ft	N/A	ug/kg	93,000,000	40	2	1	0.750	1.30	0	2.50	6.50	0
Soil	SVOCs	Total	Phenanthrene	0-10 ft	N/A	ug/kg	93,000,000	43	4	1	0.713	1.30	0	2.40	6.50	0
Soil	SVOCs	Total	Pyrene	0-3 ft	N/A	ug/kg	6,700,000	40	2	1	0.352	0.429	0	2.07	6.50	0
Soil	SVOCs	Total	Pyrene	0-10 ft	N/A	ug/kg	6,700,000	43	4	1	0.352	0.429	0	2.07	6.50	0
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-3 ft	N/A	ug/kg	9,300	46	46	-	0.0443	1,200	0	1.13	6,200	0
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-10 ft	N/A	ug/kg	9,300	49	49	-	0.0443	1,200	0	1.13	6,200	0
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-3 ft	N/A	ug/kg	38,000,000	46	44	2	0.0650	1,800	0	1.13	6,200	0
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-10 ft	N/A	ug/kg	38,000,000	49	46	3	0.0650	1,800	0	1.13	6,200	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(6 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-3 ft	N/A	ug/kg	2,800	46	46	-	0.0638	2,500	0	1.13	6,200	1
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-10 ft	N/A	ug/kg	2,800	49	49	-	0.0638	2,500	0	1.13	6,200	1
Soil	VOCs	Total	1,1,2-Trichloroethane	0-3 ft	N/A	ug/kg	24,000	46	46	-	0.0880	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,1,2-Trichloroethane	0-10 ft	N/A	ug/kg	24,000	49	49	-	0.0880	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,1-Dichloroethane	0-3 ft	N/A	ug/kg	240,000	46	45	1	0.0480	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,1-Dichloroethane	0-10 ft	N/A	ug/kg	240,000	49	48	1	0.0480	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,1-Dichloroethene	0-3 ft	N/A	ug/kg	1,100,000	46	46	-	0.0700	3,000	0	1.13	6,200	0
Soil	VOCs	Total	1,1-Dichloroethene	0-10 ft	N/A	ug/kg	1,100,000	49	49	-	0.0700	3,000	0	1.13	6,200	0
Soil	VOCs	Total	1,1-Dichloropropene	0-3 ft	N/A	ug/kg	8,100	46	46	-	0.150	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,1-Dichloropropene	0-10 ft	N/A	ug/kg	8,100	49	49	-	0.150	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-3 ft	N/A	ug/kg	490,000	46	46	-	0.108	2,800	0	1.13	6,200	0
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-10 ft	N/A	ug/kg	490,000	49	49	-	0.108	2,800	0	1.13	6,200	0
Soil	VOCs	Total	1,2,3-Trichloropropane	0-3 ft	N/A	ug/kg	95	46	46	-	0.0756	2,800	1	1.13	6,200	1
Soil	VOCs	Total	1,2,3-Trichloropropane	0-10 ft	N/A	ug/kg	95	49	49	-	0.0756	2,800	1	1.13	6,200	1
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	N/A	ug/kg	99,000	46	46	-	0.110	1,800	0	1.13	6,200	0
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-10 ft	N/A	ug/kg	99,000	49	49	-	0.110	1,800	0	1.13	6,200	0
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-3 ft	N/A	ug/kg	980,000	46	25	18	0.0478	3.70	0	1.13	67.0	0
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-10 ft	N/A	ug/kg	980,000	49	28	18	0.0478	3.70	0	1.13	67.0	0
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-3 ft	N/A	ug/kg	69	46	46	-	0.135	3,800	2	1.13	12,000	2
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-10 ft	N/A	ug/kg	69	49	49	-	0.135	3,800	2	1.13	12,000	2
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-3 ft	N/A	ug/kg	650	46	46	-	0.0575	1,800	1	1.13	6,200	1
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-10 ft	N/A	ug/kg	650	49	49	-	0.0575	1,800	1	1.13	6,200	1
Soil	VOCs	Total	1,2-Dichlorobenzene	0-3 ft	N/A	ug/kg	9,800,000	46	46	-	0.0575	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,2-Dichlorobenzene	0-10 ft	N/A	ug/kg	9,800,000	49	49	-	0.0575	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-3 ft	N/A	ug/kg	15,000	46	46	-	0.0540	1,800	0	1.13	6,200	0
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-10 ft	N/A	ug/kg	15,000	49	49	-	0.0540	1,800	0	1.13	6,200	0
Soil	VOCs	Total	1,2-Dichloropropane	0-3 ft	N/A	ug/kg	4,500	46	46	-	0.0428	2,500	0	1.13	6,200	1
Soil	VOCs	Total	1,2-Dichloropropane	0-10 ft	N/A	ug/kg	4,500	49	49	-	0.0428	2,500	0	1.13	6,200	1
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-3 ft	N/A	ug/kg	1,500,000	46	38	6	0.0400	6.50	0	1.13	67.0	0
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-10 ft	N/A	ug/kg	1,500,000	49	41	6	0.0400	6.50	0	1.13	67.0	0
Soil	VOCs	Total	1,3-Dichlorobenzene	0-3 ft	N/A	ug/kg	36,000	46	46	-	0.0391	1,800	0	1.13	6,200	0
Soil	VOCs	Total	1,3-Dichlorobenzene	0-10 ft	N/A	ug/kg	36,000	49	49	-	0.0391	1,800	0	1.13	6,200	0
Soil	VOCs	Total	1,3-Dichloropropane	0-3 ft	N/A	ug/kg	20,000,000	46	46	-	0.0590	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,3-Dichloropropane	0-10 ft	N/A	ug/kg	20,000,000	49	49	-	0.0590	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,4-Dichlorobenzene	0-3 ft	N/A	ug/kg	36,000	46	44	2	0.0551	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,4-Dichlorobenzene	0-10 ft	N/A	ug/kg	36,000	49	47	2	0.0551	2,500	0	1.13	6,200	0
Soil	VOCs	Total	2,2-Dichloropropane	0-3 ft	N/A	ug/kg	4,500	46	46	-	0.0763	1,500	0	1.13	6,200	1
Soil	VOCs	Total	2,2-Dichloropropane	0-10 ft	N/A	ug/kg	4,500	49	49	-	0.0763	1,500	0	1.13	6,200	1
Soil	VOCs	Total	2-Butanone (MEK)	0-3 ft	N/A	ug/kg	200,000,000	46	27	13	1.60	12,000	0	7.08	31,000	0
Soil	VOCs	Total	2-Butanone (MEK)	0-10 ft	N/A	ug/kg	200,000,000	49	30	13	1.60	12,000	0	7.08	31,000	0
Soil	VOCs	Total	2-Chlorotoluene	0-3 ft	N/A	ug/kg	20,000,000	46	46	-	0.0490	1,800	0	1.13	6,200	0
Soil	VOCs	Total	2-Chlorotoluene	0-10 ft	N/A	ug/kg	20,000,000	49	49	-	0.0490	1,800	0	1.13	6,200	0
Soil	VOCs	Total	2-Hexanone	0-3 ft	N/A	ug/kg	1,400,000	46	43	3	0.780	7,500	0	5.66	31,000	0
Soil	VOCs	Total	2-Hexanone	0-10 ft	N/A	ug/kg	1,400,000	49	46	3	0.780	7,500	0	5.66	31,000	0
Soil	VOCs	Total	4-Chlorotoluene	0-3 ft	N/A	ug/kg	72,000,000	46	46	-	0.0920	1,800	0	1.13	6,200	0
Soil	VOCs	Total	4-Chlorotoluene	0-10 ft	N/A	ug/kg	72,000,000	49	49	-	0.0920	1,800	0	1.13	6,200	0
Soil	VOCs	Total	4-Isopropyltoluene	0-3 ft	N/A	ug/kg	24,000,000	46	29	15	0.0766	1,800	0	1.37	6,200	0
Soil	VOCs	Total	4-Isopropyltoluene	0-10 ft	N/A	ug/kg	24,000,000	49	32	15	0.0676	1,800	0	1.21	6,200	0
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-3 ft	N/A	ug/kg	53,000,000	46	37	9	0.240	10,000	0	5.66	31,000	0
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-10 ft	N/A	ug/kg	53,000,000	49	40	9	0.240	10,000	0	5.66	31,000	0
Soil	VOCs	Total	Acetone	0-3 ft	N/A	ug/kg	630,000,000	46	23	4	15.0	10,000	0	19.0	31,000	0
Soil	VOCs	Total	Acetone	0-10 ft	N/A	ug/kg	630,000,000	49	26	4	7.77	10,000	0	7.77	31,000	0
Soil	VOCs	Total	Benzene	0-3 ft	N/A	ug/kg	34,000	46	29	17	0.140	2,500	0	1.13	6,200	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(7 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	VOCs	Total	Benzene	0-10 ft	N/A	ug/kg	34,000	49	30	19	0.140	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Bromobenzene	0-3 ft	N/A	ug/kg	1,800,000	46	46	-	0.0450	1,800	0	1.13	6,200	0
Soil	VOCs	Total	Bromobenzene	0-10 ft	N/A	ug/kg	1,800,000	49	49	-	0.0450	1,800	0	1.13	6,200	0
Soil	VOCs	Total	Bromochloromethane	0-3 ft	N/A	ug/kg	11,000	46	46	-	0.0519	1,900	0	1.13	6,200	0
Soil	VOCs	Total	Bromochloromethane	0-10 ft	N/A	ug/kg	11,000	49	49	-	0.0519	1,900	0	1.13	6,200	0
Soil	VOCs	Total	Bromodichloromethane	0-3 ft	N/A	ug/kg	11,000	46	46	-	0.0440	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Bromodichloromethane	0-10 ft	N/A	ug/kg	11,000	49	49	-	0.0440	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Bromoform	0-3 ft	N/A	ug/kg	360,000	46	46	-	0.0701	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Bromoform	0-10 ft	N/A	ug/kg	360,000	49	49	-	0.0701	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Bromomethane	0-3 ft	N/A	ug/kg	330,000	46	38	8	0.397	6,200	0	1.13	12,000	0
Soil	VOCs	Total	Bromomethane	0-10 ft	N/A	ug/kg	330,000	49	41	8	0.397	6,200	0	1.13	12,000	0
Soil	VOCs	Total	Carbon Disulfide	0-3 ft	N/A	ug/kg	3,700,000	46	22	23	0.313	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Carbon Disulfide	0-10 ft	N/A	ug/kg	3,700,000	49	25	23	0.313	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Carbon Tetrachloride	0-3 ft	N/A	ug/kg	15,000	46	46	-	0.0780	1,500	0	1.13	6,200	0
Soil	VOCs	Total	Carbon Tetrachloride	0-10 ft	N/A	ug/kg	15,000	49	49	-	0.0780	1,500	0	1.13	6,200	0
Soil	VOCs	Total	Chlorobenzene	0-3 ft	N/A	ug/kg	1,400,000	46	46	-	0.0503	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Chlorobenzene	0-10 ft	N/A	ug/kg	1,400,000	49	49	-	0.0503	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Chloroethane	0-3 ft	N/A	ug/kg	61,000,000	46	46	-	0.300	6,200	0	1.13	12,000	0
Soil	VOCs	Total	Chloroethane	0-10 ft	N/A	ug/kg	61,000,000	49	49	-	0.300	6,200	0	1.13	12,000	0
Soil	VOCs	Total	Chloroform	0-3 ft	N/A	ug/kg	17,000	46	43	3	0.0480	1,800	0	1.13	6,200	0
Soil	VOCs	Total	Chloroform	0-10 ft	N/A	ug/kg	17,000	49	46	3	0.0480	1,800	0	1.13	6,200	0
Soil	VOCs	Total	Chloromethane	0-3 ft	N/A	ug/kg	500,000	46	44	2	0.0570	5,000	0	1.13	12,000	0
Soil	VOCs	Total	Chloromethane	0-10 ft	N/A	ug/kg	500,000	49	47	2	0.0570	5,000	0	1.13	12,000	0
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-3 ft	N/A	ug/kg	3,100,000	46	44	1	0.0810	2,500	0	1.13	6,200	0
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-10 ft	N/A	ug/kg	3,100,000	49	45	1	0.0810	2,500	0	1.13	6,200	0
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-3 ft	N/A	ug/kg	8,100	46	46	-	0.0310	2,500	0	1.13	6,200	0
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-10 ft	N/A	ug/kg	8,100	49	49	-	0.0310	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Dibromochloromethane	0-3 ft	N/A	ug/kg	34,000	46	46	-	0.0730	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Dibromochloromethane	0-10 ft	N/A	ug/kg	34,000	49	49	-	0.0730	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Dibromomethane	0-3 ft	N/A	ug/kg	110,000	46	46	-	0.0734	2,800	0	1.13	6,200	0
Soil	VOCs	Total	Dibromomethane	0-10 ft	N/A	ug/kg	110,000	49	49	-	0.0734	2,800	0	1.13	6,200	0
Soil	VOCs	Total	Dichlorodifluoromethane	0-3 ft	N/A	ug/kg	780,000	46	42	2	0.0463	4,200	0	1.13	12,000	0
Soil	VOCs	Total	Dichlorodifluoromethane	0-10 ft	N/A	ug/kg	780,000	49	44	3	0.0463	4,200	0	1.13	12,000	0
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-3 ft	N/A	ug/kg	310,000	46	29	16	0.140	1,200	0	1.47	6,200	0
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-10 ft	N/A	ug/kg	310,000	49	32	16	0.140	1,200	0	1.47	6,200	0
Soil	VOCs	Total	Ethylbenzene	0-3 ft	N/A	ug/kg	140,000	46	36	9	0.0410	1,800	0	1.13	6,200	0
Soil	VOCs	Total	Ethylbenzene	0-10 ft	N/A	ug/kg	140,000	49	39	9	0.0384	1,800	0	1.13	6,200	0
Soil	VOCs	Total	Hexachlorobutadiene	0-3 ft	N/A	ug/kg	22,000	46	46	-	0.0664	1,800	0	1.13	6,200	0
Soil	VOCs	Total	Hexachlorobutadiene	0-10 ft	N/A	ug/kg	22,000	49	49	-	0.0664	1,800	0	1.13	6,200	0
Soil	VOCs	Total	Isopropylbenzene	0-3 ft	N/A	ug/kg	11,000,000	46	45	-	0.0310	3,000	0	1.13	6,200	0
Soil	VOCs	Total	Isopropylbenzene	0-10 ft	N/A	ug/kg	11,000,000	49	48	-	0.0310	3,000	0	1.13	6,200	0
Soil	VOCs	Total	m,p-Xylenes	0-3 ft	N/A	ug/kg	2,700,000	46	35	9	0.0930	13.0	0	2.26	54.0	0
Soil	VOCs	Total	m,p-Xylenes	0-10 ft	N/A	ug/kg	2,700,000	49	38	9	0.0930	13.0	0	2.26	54.0	0
Soil	VOCs	Total	Naphthalene	0-3 ft	N/A	ug/kg	23,000	46	35	10	0.320	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Naphthalene	0-10 ft	N/A	ug/kg	23,000	49	38	10	0.320	2,500	0	1.13	6,200	0
Soil	VOCs	Total	n-Butylbenzene	0-3 ft	N/A	ug/kg	NV	46	45	1	0.0880	1,800	-	1.13	6,200	-
Soil	VOCs	Total	n-Butylbenzene	0-10 ft	N/A	ug/kg	NV	49	48	1	0.0880	1,800	-	1.13	6,200	-
Soil	VOCs	Total	n-Propylbenzene	0-3 ft	N/A	ug/kg	21,000,000	46	43	2	0.0531	2,800	0	1.13	6,200	0
Soil	VOCs	Total	n-Propylbenzene	0-10 ft	N/A	ug/kg	21,000,000	49	46	2	0.0531	2,800	0	1.13	6,200	0
Soil	VOCs	Total	o-Xylene	0-3 ft	N/A	ug/kg	19,000,000	46	41	4	0.0411	6.90	0	1.13	6,200	0
Soil	VOCs	Total	o-Xylene	0-10 ft	N/A	ug/kg	19,000,000	49	44	4	0.0411	6.90	0	1.13	6,200	0
Soil	VOCs	Total	sec-Butylbenzene	0-3 ft	N/A	ug/kg	NV	46	44	1	0.0442	1,800	-	1.13	6,200	-
Soil	VOCs	Total	sec-Butylbenzene	0-10 ft	N/A	ug/kg	NV	49	47	1	0.0442	1,800	-	1.13	6,200	-

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(8 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	VOCs	Total	Styrene	0-3 ft	N/A	ug/kg	36,000,000	46	46	-	0.0340	2,500	0	1.13	12,000	0
Soil	VOCs	Total	Styrene	0-10 ft	N/A	ug/kg	36,000,000	49	49	-	0.0340	2,500	0	1.13	12,000	0
Soil	VOCs	Total	tert-Butylbenzene	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0273	1,800	-	1.13	6,200	-
Soil	VOCs	Total	tert-Butylbenzene	0-10 ft	N/A	ug/kg	NV	49	49	-	0.0273	1,800	-	1.13	6,200	-
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-3 ft	N/A	ug/kg	5,100	46	41	2	0.114	8.30	0	1.13	67.0	0
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-10 ft	N/A	ug/kg	5,100	49	41	3	0.114	8.30	0	1.13	67.0	0
Soil	VOCs	Total	Toluene	0-3 ft	N/A	ug/kg	24,000,000	46	20	24	0.0440	6.10	0	1.13	27.0	0
Soil	VOCs	Total	Toluene	0-10 ft	N/A	ug/kg	24,000,000	49	23	24	0.0440	6.10	0	1.13	27.0	0
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-3 ft	N/A	ug/kg	690,000	46	45	-	0.0480	3,000	0	1.13	6,200	0
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-10 ft	N/A	ug/kg	690,000	49	48	-	0.0480	3,000	0	1.13	6,200	0
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-3 ft	N/A	ug/kg	8,100	46	46	-	0.0513	1,800	0	1.13	6,200	0
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-10 ft	N/A	ug/kg	8,100	49	49	-	0.0513	1,800	0	1.13	6,200	0
Soil	VOCs	Total	Trichloroethene (TCE)	0-3 ft	N/A	ug/kg	3,900	46	39	6	0.0440	13.0	0	1.13	6,200	1
Soil	VOCs	Total	Trichloroethene (TCE)	0-10 ft	N/A	ug/kg	3,900	49	39	7	0.0440	13.0	0	1.13	6,200	1
Soil	VOCs	Total	Trichlorofluoromethane	0-3 ft	N/A	ug/kg	3,400,000	46	46	-	0.0540	1,800	0	1.13	12,000	0
Soil	VOCs	Total	Trichlorofluoromethane	0-10 ft	N/A	ug/kg	3,400,000	49	49	-	0.0540	1,800	0	1.13	12,000	0
Soil	VOCs	Total	Vinyl Acetate	0-3 ft	N/A	ug/kg	4,100,000	46	46	-	0.600	6,200	0	5.66	12,000	0
Soil	VOCs	Total	Vinyl Acetate	0-10 ft	N/A	ug/kg	4,100,000	49	49	-	0.600	6,200	0	5.66	12,000	0
Soil	VOCs	Total	Vinyl Chloride	0-3 ft	N/A	ug/kg	3,900	46	46	-	0.0570	3,800	0	1.13	12,000	1
Soil	VOCs	Total	Vinyl Chloride	0-10 ft	N/A	ug/kg	3,900	49	49	-	0.0570	3,800	0	1.13	12,000	1
Erodible Soil Subset	Metals	Total	Beryllium	0-1 ft	N/A	mg/kg	610	2	0	2	-	-	-	0.740	1.23	0
Erodible Soil Subset	Metals	Total	Selenium	0-1 ft	N/A	mg/kg	5,100	2	0	2	-	-	-	1.50	2.50	0
Erodible Soil Subset	Pesticides	Total	4,4'-DDD	0-1 ft	N/A	ug/kg	11,000	2	2	-	0.110	0.300	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	4,4'-DDE	0-1 ft	N/A	ug/kg	7,700	2	0	2	-	-	-	0.660	0.710	0
Erodible Soil Subset	Pesticides	Total	Aldrin	0-1 ft	N/A	ug/kg	130	2	2	-	0.160	0.160	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	BHC (alpha)	0-1 ft	N/A	ug/kg	340	2	2	-	0.110	0.110	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	BHC (beta)	0-1 ft	N/A	ug/kg	960	2	2	-	0.180	0.660	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	BHC (delta)	0-1 ft	N/A	ug/kg	340	2	1	1	0.140	0.140	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	N/A	ug/kg	2,000	2	2	-	0.0800	1.30	0	0.630	1.30	0
Erodible Soil Subset	Pesticides	Total	Chlordane (alpha)	0-1 ft	N/A	ug/kg	7,200	2	2	-	0.100	0.100	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	Chlordane (gamma)	0-1 ft	N/A	ug/kg	7,200	2	2	-	0.630	0.660	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	Dieldrin	0-1 ft	N/A	ug/kg	130	2	2	-	0.140	0.810	0	0.630	0.810	0
Erodible Soil Subset	Pesticides	Total	Endosulfan I	0-1 ft	N/A	ug/kg	1,400,000	2	2	-	0.110	0.660	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	Endosulfan II	0-1 ft	N/A	ug/kg	1,400,000	2	1	1	0.140	0.140	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	Endosulfan Sulfate	0-1 ft	N/A	ug/kg	1,400,000	2	1	-	0.110	0.110	0	0.630	0.630	0
Erodible Soil Subset	Pesticides	Total	Endrin Aldehyde	0-1 ft	N/A	ug/kg	71,000	2	2	-	0.630	0.700	0	0.630	0.700	0
Erodible Soil Subset	Pesticides	Total	Endrin Ketone	0-1 ft	N/A	ug/kg	71,000	2	2	-	0.630	2.90	0	0.630	2.90	0
Erodible Soil Subset	Pesticides	Total	Endrin	0-1 ft	N/A	ug/kg	71,000	2	2	-	0.0940	0.660	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	Heptachlor Epoxide	0-1 ft	N/A	ug/kg	240	2	2	-	0.0840	0.180	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	Heptachlor	0-1 ft	N/A	ug/kg	480	2	0	2	-	-	-	0.660	0.710	0
Erodible Soil Subset	Pesticides	Total	Methoxychlor	0-1 ft	N/A	ug/kg	3,100,000	2	2	-	0.630	1.50	0	0.630	1.50	0
Erodible Soil Subset	Pesticides	Total	Toxaphene	0-1 ft	N/A	ug/kg	2,000	2	2	-	43.0	190	0	43.0	190	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1016	0-1 ft	N/A	ug/kg	21,000	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1221	0-1 ft	N/A	ug/kg	540	2	2	-	2.10	2.10	0	13.0	14.0	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1232	0-1 ft	N/A	ug/kg	540	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1242	0-1 ft	N/A	ug/kg	740	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1248	0-1 ft	N/A	ug/kg	740	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1254	0-1 ft	N/A	ug/kg	740	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1262	0-1 ft	N/A	ug/kg	540	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1268	0-1 ft	N/A	ug/kg	540	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	N/A	mg/kg	23,000	2	0	1	-	-	-	36.0	36.0	0
Erodible Soil Subset	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	N/A	mg/kg	13,000	8	4	4	1.50	1.50	0	3.30	5.00	0
Erodible Soil Subset	SVOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	N/A	ug/kg	99,000	2	2	-	38.0	75.0	0	160	340	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Erodible Soil Subset	SVOCs	Total	1,2-Dichlorobenzene	0-1 ft	N/A	ug/kg	19,000,000	2	2	-	33.0	65.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	1,3-Dichlorobenzene	0-1 ft	N/A	ug/kg	17,000	2	2	-	40.0	80.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	17,000	2	2	-	48.0	95.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2,4,5-Trichlorophenol	0-1 ft	N/A	ug/kg	62,000,000	2	2	-	75.0	150	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2,4,6-Trichlorophenol	0-1 ft	N/A	ug/kg	200,000	2	2	-	45.0	90.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2,4-Dichlorophenol	0-1 ft	N/A	ug/kg	1,800,000	2	2	-	45.0	90.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2,4-Dimethylphenol	0-1 ft	N/A	ug/kg	12,000,000	2	2	-	140	280	0	780	1,700	0
Erodible Soil Subset	SVOCs	Total	2,4-Dinitrophenol	0-1 ft	N/A	ug/kg	1,200,000	2	2	-	900	1,800	0	3,200	6,700	0
Erodible Soil Subset	SVOCs	Total	2,4-Dinitrotoluene	0-1 ft	N/A	ug/kg	5,500	2	2	-	70.0	140	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2,6-Dinitrotoluene	0-1 ft	N/A	ug/kg	240,000	2	2	-	70.0	140	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2-Chloronaphthalene	0-1 ft	N/A	ug/kg	82,000,000	2	2	-	90.0	180	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2-Chlorophenol	0-1 ft	N/A	ug/kg	5,100,000	2	2	-	43.0	85.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2-Methylphenol	0-1 ft	N/A	ug/kg	31,000,000	2	2	-	85.0	170	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2-Nitroaniline	0-1 ft	N/A	ug/kg	6,000,000	2	2	-	68.0	140	0	320	670	0
Erodible Soil Subset	SVOCs	Total	2-Nitrophenol	0-1 ft	N/A	ug/kg	180,000,000	2	2	-	65.0	130	0	160	340	0
Erodible Soil Subset	SVOCs	Total	3,3'-Dichlorobenzidine	0-1 ft	N/A	ug/kg	4,800	2	2	-	93.0	190	0	1,600	3,400	0
Erodible Soil Subset	SVOCs	Total	3-Nitroaniline	0-1 ft	N/A	ug/kg	6,000	2	2	-	65.0	130	0	320	670	0
Erodible Soil Subset	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-1 ft	N/A	ug/kg	49,000	2	2	-	43.0	85.0	0	1,600	3,400	0
Erodible Soil Subset	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-1 ft	N/A	ug/kg	NV	2	2	-	35.0	70.0	-	160	340	-
Erodible Soil Subset	SVOCs	Total	4-Chloro-3-methylphenol	0-1 ft	N/A	ug/kg	62,000,000	2	2	-	53.0	110	0	160	340	0
Erodible Soil Subset	SVOCs	Total	4-Chloroaniline	0-1 ft	N/A	ug/kg	8,600	2	2	-	53.0	110	0	160	340	0
Erodible Soil Subset	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-1 ft	N/A	ug/kg	NV	2	2	-	50.0	100	-	160	340	-
Erodible Soil Subset	SVOCs	Total	4-Nitroaniline	0-1 ft	N/A	ug/kg	86,000	2	2	-	85.0	170	0	320	670	0
Erodible Soil Subset	SVOCs	Total	4-Nitrophenol	0-1 ft	N/A	ug/kg	180,000,000	2	2	-	750	1,500	0	1,600	3,400	0
Erodible Soil Subset	SVOCs	Total	Aniline	0-1 ft	N/A	ug/kg	2,500,000,000	2	2	-	38.0	75.0	0	320	670	0
Erodible Soil Subset	SVOCs	Total	Benzoic Acid	0-1 ft	N/A	ug/kg	62,000,000	2	2	-	2,400	4,800	0	3,200	6,700	0
Erodible Soil Subset	SVOCs	Total	Benzyl Alcohol	0-1 ft	N/A	ug/kg	62,000,000	2	2	-	93.0	190	0	320	670	0
Erodible Soil Subset	SVOCs	Total	Bis(2-chloroethoxy)methane	0-1 ft	N/A	ug/kg	1,800,000	2	2	-	33.0	65.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Bis(2-chloroethyl) Ether	0-1 ft	N/A	ug/kg	1,000	2	2	-	60.0	120	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-1 ft	N/A	ug/kg	1,000	2	2	-	30.0	60.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	N/A	ug/kg	910,000	2	2	-	38.0	75.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Carbazole	0-1 ft	N/A	ug/kg	1,000,000	2	0	2	-	-	-	180	340	0
Erodible Soil Subset	SVOCs	Total	Dibenzofuran	0-1 ft	N/A	ug/kg	1,000,000	2	2	-	33.0	65.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Diethyl Phthalate	0-1 ft	N/A	ug/kg	490,000,000	2	2	-	88.0	180	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Dimethyl Phthalate	0-1 ft	N/A	ug/kg	150,000	2	2	-	45.0	90.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	N/A	ug/kg	62,000,000	2	2	-	65.0	130	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	N/A	ug/kg	150,000	2	2	-	30.0	60.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Hexachlorobenzene	0-1 ft	N/A	ug/kg	1,800	2	2	-	53.0	110	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Hexachlorobutadiene	0-1 ft	N/A	ug/kg	22,000	2	2	-	35.0	70.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Hexachlorocyclopentadiene	0-1 ft	N/A	ug/kg	3,700,000	2	2	-	380	750	0	780	1,700	0
Erodible Soil Subset	SVOCs	Total	Hexachloroethane	0-1 ft	N/A	ug/kg	150,000	2	2	-	55.0	110	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Isophorone	0-1 ft	N/A	ug/kg	1,800,000	2	2	-	40.0	80.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Nitrobenzene	0-1 ft	N/A	ug/kg	24,000	2	2	-	50.0	100	0	160	340	0
Erodible Soil Subset	SVOCs	Total	N-Nitrosodimethylamine	0-1 ft	N/A	ug/kg	34	2	2	-	160	310	2	780	1,700	2
Erodible Soil Subset	SVOCs	Total	N-Nitrosodi-n-propylamine	0-1 ft	N/A	ug/kg	250	2	2	-	80.0	160	0	160	340	1
Erodible Soil Subset	SVOCs	Total	N-Nitrosodiphenylamine	0-1 ft	N/A	ug/kg	350,000	2	2	-	55.0	110	0	160	340	0
Erodible Soil Subset	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	N/A	ug/kg	3,100,000	2	2	-	73.0	150	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Pentachlorophenol	0-1 ft	N/A	ug/kg	13,000	2	2	-	220	430	0	1,600	3,400	0
Erodible Soil Subset	SVOCs	Total	Phenol	0-1 ft	N/A	ug/kg	180,000,000	2	2	-	48.0	95.0	0	470	1,000	0
Erodible Soil Subset	SVOCs	Total	2-Methylnaphthalene	0-1 ft	N/A	ug/kg	4,100,000	2	2	-	30.0	60.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Acenaphthene	0-1 ft	N/A	ug/kg	19,000,000	2	0	2	-	-	-	180	340	0
Erodible Soil Subset	SVOCs	Total	Acenaphthylene	0-1 ft	N/A	ug/kg	23,000	2	2	-	35.0	70.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Anthracene	0-1 ft	N/A	ug/kg	93,000,000	2	0	2	-	-	-	180	340	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Erodible Soil Subset	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	N/A	ug/kg	270	2	0	2	-	-	-	180	340	1
Erodible Soil Subset	SVOCs	Total	Fluorene	0-1 ft	N/A	ug/kg	12,000,000	2	2	-	43.0	85.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	23,000	2	2	-	33.0	65.0	0	160	340	0
Erodible Soil Subset	VOCs	Total	1,1,1,2-Tetrachloroethane	0-1 ft	N/A	ug/kg	9,300	8	8	-	0.190	9.40	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	N/A	ug/kg	38,000,000	8	8	-	0.160	4.30	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,1,2,2-Tetrachloroethane	0-1 ft	N/A	ug/kg	2,800	8	8	-	0.0900	7.40	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,1,2-Trichloroethane	0-1 ft	N/A	ug/kg	2,700	8	8	-	0.0890	7.90	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,1-Dichloroethane	0-1 ft	N/A	ug/kg	5,900	8	8	-	0.0490	9.30	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,1-Dichloroethene	0-1 ft	N/A	ug/kg	680,000	8	8	-	0.0710	7.30	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,1-Dichloropropene	0-1 ft	N/A	ug/kg	8,100	8	8	-	0.160	9.40	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	1,2,3-Trichlorobenzene	0-1 ft	N/A	ug/kg	490,000	8	8	-	0.150	12.0	0	21.0	270	0
Erodible Soil Subset	VOCs	Total	1,2,3-Trichloropropane	0-1 ft	N/A	ug/kg	95	8	8	-	0.280	17.0	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	N/A	ug/kg	99,000	8	8	-	0.230	6.50	0	21.0	67.0	0
Erodible Soil Subset	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	N/A	ug/kg	980,000	8	2	6	0.110	3.70	0	21.0	67.0	0
Erodible Soil Subset	VOCs	Total	1,2-Dibromo-3-chloropropane	0-1 ft	N/A	ug/kg	69	8	8	-	0.790	140	1	21.0	270	1
Erodible Soil Subset	VOCs	Total	1,2-Dibromoethane (EDB)	0-1 ft	N/A	ug/kg	140	8	8	-	0.200	6.90	0	21.0	27.0	0
Erodible Soil Subset	VOCs	Total	1,2-Dichlorobenzene	0-1 ft	N/A	ug/kg	19,000,000	8	8	-	0.0640	6.60	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,2-Dichloroethane (EDC)	0-1 ft	N/A	ug/kg	590	8	8	-	0.0550	9.70	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,2-Dichloropropane	0-1 ft	N/A	ug/kg	4,500	8	8	-	0.0660	11.0	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	N/A	ug/kg	150,000	8	8	-	0.0410	6.50	0	21.0	67.0	0
Erodible Soil Subset	VOCs	Total	1,3-Dichlorobenzene	0-1 ft	N/A	ug/kg	17,000	8	8	-	0.0710	6.10	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,3-Dichloropropane	0-1 ft	N/A	ug/kg	20,000,000	8	8	-	0.0600	5.30	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	17,000	8	8	-	0.110	5.70	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	2,2-Dichloropropane	0-1 ft	N/A	ug/kg	4,500	8	8	-	0.110	9.50	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	2-Butanone (MEK)	0-1 ft	N/A	ug/kg	200,000,000	8	1	2	290	290	0	21.0	540	0
Erodible Soil Subset	VOCs	Total	2-Chlorotoluene	0-1 ft	N/A	ug/kg	20,000,000	8	8	-	0.0520	4.90	0	21.0	270	0
Erodible Soil Subset	VOCs	Total	2-Hexanone	0-1 ft	N/A	ug/kg	1,400,000	8	5	3	0.820	170	0	21.0	2,700	0
Erodible Soil Subset	VOCs	Total	4-Chlorotoluene	0-1 ft	N/A	ug/kg	72,000,000	8	8	-	0.0930	5.50	0	21.0	270	0
Erodible Soil Subset	VOCs	Total	4-Isopropyltoluene	0-1 ft	N/A	ug/kg	24,000,000	8	5	3	0.0840	6.10	0	21.0	270	0
Erodible Soil Subset	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	N/A	ug/kg	53,000,000	8	5	3	0.260	460	0	21.0	2,700	0
Erodible Soil Subset	VOCs	Total	Acetone	0-1 ft	N/A	ug/kg	630,000,000	8	1	-	230	230	0	810	810	0
Erodible Soil Subset	VOCs	Total	Benzene	0-1 ft	N/A	ug/kg	1,200	8	4	4	0.230	5.70	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Bromobenzene	0-1 ft	N/A	ug/kg	1,800,000	8	8	-	0.0930	8.20	0	5.10	270	0
Erodible Soil Subset	VOCs	Total	Bromochloromethane	0-1 ft	N/A	ug/kg	1,900	8	8	-	0.260	9.40	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Bromodichloromethane	0-1 ft	N/A	ug/kg	1,900	8	8	-	0.0450	6.20	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Bromoform	0-1 ft	N/A	ug/kg	360,000	8	8	-	0.260	13.0	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Bromomethane	0-1 ft	N/A	ug/kg	17,000	8	6	2	0.430	29.0	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Carbon Disulfide	0-1 ft	N/A	ug/kg	3,700,000	8	1	7	7.40	7.40	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Carbon Tetrachloride	0-1 ft	N/A	ug/kg	630	8	8	-	0.0790	11.0	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Chlorobenzene	0-1 ft	N/A	ug/kg	4,300,000	8	8	-	0.0550	6.60	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Chloroethane	0-1 ft	N/A	ug/kg	61,000,000	8	8	-	0.310	24.0	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Chloroform	0-1 ft	N/A	ug/kg	410	8	5	3	0.0490	0.0630	0	5.10	41.0	0
Erodible Soil Subset	VOCs	Total	Chloromethane	0-1 ft	N/A	ug/kg	300,000	8	6	2	0.0580	8.70	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	3,100,000	8	7	1	0.0820	0.110	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	cis-1,3-Dichloropropene	0-1 ft	N/A	ug/kg	8,100	8	8	-	0.0320	8.30	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Dibromochloromethane	0-1 ft	N/A	ug/kg	34,000	8	8	-	0.170	9.10	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Dibromomethane	0-1 ft	N/A	ug/kg	110,000	8	8	-	0.190	18.0	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Dichlorodifluoromethane	0-1 ft	N/A	ug/kg	780,000	8	7	-	0.0730	0.0940	0	5.10	6.60	0
Erodible Soil Subset	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	N/A	ug/kg	20,000	8	4	3	0.160	0.190	0	11.0	14.0	0
Erodible Soil Subset	VOCs	Total	Ethylbenzene	0-1 ft	N/A	ug/kg	12,000	8	5	3	0.0430	6.10	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Hexachlorobutadiene	0-1 ft	N/A	ug/kg	22,000	8	8	-	0.180	15.0	0	21.0	67.0	0
Erodible Soil Subset	VOCs	Total	Isopropylbenzene	0-1 ft	N/A	ug/kg	24,000,000	8	8	-	0.0320	6.10	0	21.0	67.0	0
Erodible Soil Subset	VOCs	Total	m,p-Xylenes	0-1 ft	N/A	ug/kg	2,700,000	8	5	3	0.0980	13.0	0	5.10	54.0	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Erodible Soil Subset	VOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	23,000	8	6	2	0.340	7.90	0	21.0	270	0
Erodible Soil Subset	VOCs	Total	n-Butylbenzene	0-1 ft	N/A	ug/kg	NV	8	8	-	0.0890	6.50	-	21.0	270	-
Erodible Soil Subset	VOCs	Total	n-Propylbenzene	0-1 ft	N/A	ug/kg	21,000,000	8	8	-	0.0630	5.70	0	21.0	270	0
Erodible Soil Subset	VOCs	Total	o-Xylene	0-1 ft	N/A	ug/kg	19,000,000	8	8	-	0.0600	6.90	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	sec-Butylbenzene	0-1 ft	N/A	ug/kg	NV	8	8	-	0.0660	6.50	-	21.0	270	-
Erodible Soil Subset	VOCs	Total	Styrene	0-1 ft	N/A	ug/kg	51,000,000	8	8	-	0.0770	6.10	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	tert-Butylbenzene	0-1 ft	N/A	ug/kg	NV	8	8	-	0.0550	4.30	-	21.0	270	-
Erodible Soil Subset	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	N/A	ug/kg	1,600	8	8	-	0.130	8.30	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Toluene	0-1 ft	N/A	ug/kg	24,000,000	8	1	7	6.10	6.10	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	trans-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	200,000	8	8	-	0.0490	9.90	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	trans-1,3-Dichloropropene	0-1 ft	N/A	ug/kg	8,100	8	8	-	0.110	12.0	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Trichloroethene (TCE)	0-1 ft	N/A	ug/kg	130	8	8	-	0.140	13.0	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Trichlorofluoromethane	0-1 ft	N/A	ug/kg	63,000,000	8	8	-	0.0550	11.0	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Vinyl Acetate	0-1 ft	N/A	ug/kg	4,100,000	8	8	-	0.610	52.0	0	21.0	670	0
Erodible Soil Subset	VOCs	Total	Vinyl Chloride	0-1 ft	N/A	ug/kg	2,200	8	8	-	0.0580	13.0	0	5.10	27.0	0
Groundwater	Metals	Total	Iron	N/A	N/A	ug/L	300	20	4	2	20.0	55.6	0	20.0	55.6	0
Groundwater	Metals	Total	Vanadium	N/A	N/A	ug/L	2.6	20	2	6	0.0700	0.200	0	0.200	10.0	5
Groundwater	Metals	Dissolved	Iron	N/A	N/A	ug/L	300	20	13	3	4.00	20.0	0	20.0	20.0	0
Groundwater	Metals	Dissolved	Potassium	N/A	N/A	ug/L	NV	5	0	3	-	-	-	2,000	2,000	-
Groundwater	Metals	Dissolved	Vanadium	N/A	N/A	ug/L	2.6	20	5	5	0.0700	0.800	0	0.200	10.0	5
Groundwater	Butyltins	Total	Monobutyltin	N/A	N/A	ug/L	11	20	18	2	0.0110	0.0290	0	0.0500	0.0870	0
Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	N/A	ug/L	90	20	18	2	11.0	120	7	100	120	20
Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	N/A	ug/L	290	20	20	-	19.0	120	0	100	120	0
Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	N/A	ug/L	100	20	17	3	13.0	13.0	0	250	250	20
Groundwater	SVOCs	Total	Benzo(b)fluoranthene	N/A	N/A	ug/L	0.0038	20	19	1	0.0170	0.0200	19	0.190	0.230	20
Groundwater	SVOCs	Total	Benzo(k)fluoranthene	N/A	N/A	ug/L	0.0038	20	20	-	0.0240	0.0280	20	0.190	0.230	20
Groundwater	SVOCs	Total	Phenanthrene	N/A	N/A	ug/L	8,300	20	19	1	0.0220	0.0250	0	0.190	0.230	0
Groundwater	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	N/A	ug/L	0.52	5	5	-	0.0450	0.0450	0	0.500	0.500	0
Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/L	9,100	5	3	1	0.0620	0.0620	0	0.500	0.500	0
Groundwater	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	N/A	ug/L	0.067	5	5	-	0.0880	0.0880	5	0.500	0.500	5
Groundwater	VOCs	Total	1,1,2-Trichloroethane	N/A	N/A	ug/L	0.23	5	5	-	0.0940	0.0940	0	0.500	0.500	5
Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	N/A	ug/L	2.3	5	3	1	0.0590	0.0590	0	0.500	0.500	0
Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	N/A	ug/L	330	5	4	-	0.100	0.100	0	0.500	0.500	0
Groundwater	VOCs	Total	1,1-Dichloropropene	N/A	N/A	ug/L	0.43	5	5	-	0.0620	0.0620	0	0.500	0.500	5
Groundwater	VOCs	Total	1,2,3-Trichlorobenzene	N/A	N/A	ug/L	29	5	5	-	0.0840	0.0840	0	2.00	2.00	0
Groundwater	VOCs	Total	1,2,3-Trichloropropane	N/A	N/A	ug/L	0.00072	5	5	-	0.240	0.240	5	0.500	0.500	5
Groundwater	VOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	2.3	5	5	-	0.180	0.180	0	2.00	2.00	0
Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	N/A	ug/L	15	5	5	-	0.0620	0.0620	0	2.00	2.00	0
Groundwater	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	N/A	ug/L	0.00032	5	5	-	0.500	0.500	5	2.00	2.00	5
Groundwater	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	N/A	ug/L	0.0063	5	5	-	0.0720	0.0720	5	2.00	2.00	5
Groundwater	VOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	370	5	5	-	0.0690	0.0690	0	0.500	0.500	0
Groundwater	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	N/A	ug/L	0.14	5	5	-	0.0660	0.0660	0	0.500	0.500	5
Groundwater	VOCs	Total	1,2-Dichloropropane	N/A	N/A	ug/L	0.39	5	5	-	0.0620	0.0620	0	0.500	0.500	5
Groundwater	VOCs	Total	1,3,5-Trimethylbenzene	N/A	N/A	ug/L	12	5	5	-	0.0660	0.0660	0	5.00	5.00	0
Groundwater	VOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	0.42	5	5	-	0.0820	0.0820	0	0.500	0.500	5
Groundwater	VOCs	Total	1,3-Dichloropropane	N/A	N/A	ug/L	730	5	5	-	0.0570	0.0570	0	0.500	0.500	0
Groundwater	VOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	0.42	5	5	-	0.0840	0.0840	0	0.500	0.500	5
Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	N/A	ug/L	0.39	20	20	-	0.0830	0.420	1	0.500	2.50	20
Groundwater	VOCs	Total	2-Butanone (MEK)	N/A	N/A	ug/L	7,100	5	5	-	2.30	2.30	0	20.0	20.0	0
Groundwater	VOCs	Total	2-Chlorotoluene	N/A	N/A	ug/L	730	5	5	-	0.0790	0.0790	0	2.00	2.00	0
Groundwater	VOCs	Total	2-Hexanone	N/A	N/A	ug/L	47	5	5	-	2.40	2.40	0	20.0	20.0	0
Groundwater	VOCs	Total	4-Chlorotoluene	N/A	N/A	ug/L	2,600	5	5	-	0.0570	0.0570	0	4.00	4.00	0
Groundwater	VOCs	Total	4-Isopropyltoluene	N/A	N/A	ug/L	NV	5	5	-	0.0700	0.0700	-	2.00	2.00	-

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	N/A	ug/L	2,000	5	5	-	1.40	1.40	0	20.0	20.0	0
Groundwater	VOCs	Total	Acetone	N/A	N/A	ug/L	22,000	5	5	-	3.00	3.00	0	20.0	20.0	0
Groundwater	VOCs	Total	Benzene	N/A	N/A	ug/L	0.39	5	5	-	0.0620	0.0620	0	0.500	0.500	5
Groundwater	VOCs	Total	Bromobenzene	N/A	N/A	ug/L	88	5	5	-	0.0660	0.0660	0	2.00	2.00	0
Groundwater	VOCs	Total	Bromochloromethane	N/A	N/A	ug/L	0.12	5	5	-	0.0990	0.0990	0	0.500	0.500	5
Groundwater	VOCs	Total	Bromodichloromethane	N/A	N/A	ug/L	0.12	5	5	-	0.0550	0.0550	0	0.500	0.500	5
Groundwater	VOCs	Total	Bromoform	N/A	N/A	ug/L	4.3	5	5	-	0.0990	0.0990	0	0.500	0.500	0
Groundwater	VOCs	Total	Bromomethane	N/A	N/A	ug/L	8.7	5	5	-	0.120	0.120	0	0.500	0.500	0
Groundwater	VOCs	Total	Carbon Disulfide	N/A	N/A	ug/L	1,000	5	0	5	-	-	-	0.500	0.500	0
Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	N/A	ug/L	0.19	5	5	-	0.0480	0.0480	0	0.500	0.500	5
Groundwater	VOCs	Total	Chlorobenzene	N/A	N/A	ug/L	91	5	5	-	0.0640	0.0640	0	0.500	0.500	0
Groundwater	VOCs	Total	Chloroethane	N/A	N/A	ug/L	21,000	5	5	-	0.130	0.130	0	0.500	0.500	0
Groundwater	VOCs	Total	Chloroform	N/A	N/A	ug/L	0.19	20	19	1	0.0820	0.410	3	0.500	2.50	20
Groundwater	VOCs	Total	Chloromethane	N/A	N/A	ug/L	190	5	5	-	0.110	0.110	0	0.500	0.500	0
Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/L	360	20	5	3	0.0660	0.0660	0	0.500	0.500	0
Groundwater	VOCs	Total	cis-1,3-Dichloropropene	N/A	N/A	ug/L	0.43	5	5	-	0.0550	0.0550	0	0.500	0.500	5
Groundwater	VOCs	Total	Dibromochloromethane	N/A	N/A	ug/L	0.4	5	5	-	0.0720	0.0720	0	0.500	0.500	5
Groundwater	VOCs	Total	Dibromomethane	N/A	N/A	ug/L	8.2	5	5	-	0.120	0.120	0	0.500	0.500	0
Groundwater	VOCs	Total	Dichlorodifluoromethane	N/A	N/A	ug/L	390	5	5	-	0.0750	0.0750	0	0.500	0.500	0
Groundwater	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	N/A	ug/L	4.4	5	4	1	0.0840	0.0840	0	2.00	2.00	0
Groundwater	VOCs	Total	Ethylbenzene	N/A	N/A	ug/L	1.4	5	5	-	0.0680	0.0680	0	0.500	0.500	0
Groundwater	VOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	0.44	5	5	-	0.150	0.150	0	2.00	2.00	5
Groundwater	VOCs	Total	Isopropylbenzene	N/A	N/A	ug/L	680	5	5	-	0.0760	0.0760	0	0.500	0.500	0
Groundwater	VOCs	Total	m,p-Xylenes	N/A	N/A	ug/L	200	5	5	-	0.110	0.110	0	0.500	0.500	0
Groundwater	VOCs	Total	Naphthalene	N/A	N/A	ug/L	0.14	5	5	-	0.0960	0.0960	0	2.00	2.00	5
Groundwater	VOCs	Total	n-Butylbenzene	N/A	N/A	ug/L	NV	5	5	-	0.0850	0.0850	-	2.00	2.00	-
Groundwater	VOCs	Total	n-Propylbenzene	N/A	N/A	ug/L	1,300	5	5	-	0.00590	0.00590	0	2.00	2.00	0
Groundwater	VOCs	Total	o-Xylene	N/A	N/A	ug/L	1,200	5	5	-	0.0680	0.0680	0	0.500	0.500	0
Groundwater	VOCs	Total	sec-Butylbenzene	N/A	N/A	ug/L	NV	5	5	-	0.0710	0.0710	-	2.00	2.00	-
Groundwater	VOCs	Total	Styrene	N/A	N/A	ug/L	1,600	5	5	-	0.0770	0.0770	0	0.500	0.500	0
Groundwater	VOCs	Total	tert-Butylbenzene	N/A	N/A	ug/L	NV	5	5	-	0.0590	0.0590	-	2.00	2.00	-
Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	N/A	ug/L	0.093	20	4	3	0.0970	0.0970	4	0.500	0.500	7
Groundwater	VOCs	Total	Toluene	N/A	N/A	ug/L	1,300	5	0	2	-	-	-	0.500	0.500	0
Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	N/A	ug/L	110	5	3	1	0.0690	0.0690	0	0.500	0.500	0
Groundwater	VOCs	Total	trans-1,3-Dichloropropene	N/A	N/A	ug/L	0.43	5	5	-	0.0750	0.0750	0	0.500	0.500	5
Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/L	0.039	20	5	4	0.0730	0.0730	5	0.500	0.500	9
Groundwater	VOCs	Total	Trichlorofluoromethane	N/A	N/A	ug/L	1,300	5	5	-	0.0990	0.0990	0	0.500	0.500	0
Groundwater	VOCs	Total	Vinyl Acetate	N/A	N/A	ug/L	410	5	5	-	0.910	0.910	0	5.00	5.00	0
Groundwater	VOCs	Total	Vinyl Chloride	N/A	N/A	ug/L	0.025	20	16	2	0.0440	0.0440	16	0.500	2.50	18
DP Groundwater	Metals	Total	Aluminum	N/A	N/A	ug/L	37,000	10	0	2	-	-	-	100	100	0
DP Groundwater	Metals	Total	Antimony	N/A	N/A	ug/L	5.6	10	1	5	0.500	0.500	0	0.500	0.500	0
DP Groundwater	Metals	Total	Arsenic	N/A	N/A	ug/L	0.018	10	2	2	0.102	0.102	2	0.500	0.500	4
DP Groundwater	Metals	Total	Beryllium	N/A	N/A	ug/L	73	10	6	3	0.0782	0.0782	0	0.500	0.500	0
DP Groundwater	Metals	Total	Cadmium	N/A	N/A	ug/L	18	10	10	-	0.0247	0.0247	0	0.500	0.500	0
DP Groundwater	Metals	Total	Cobalt	N/A	N/A	ug/L	11	10	4	3	0.770	0.770	0	5.00	5.00	0
DP Groundwater	Metals	Total	Iron	N/A	N/A	ug/L	300	10	1	1	14.0	14.0	0	100	100	0
DP Groundwater	Metals	Total	Lead	N/A	N/A	ug/L	15	10	3	1	0.500	0.500	0	0.500	0.500	0
DP Groundwater	Metals	Total	Mercury	N/A	N/A	ug/L	11	10	8	2	0.0530	0.0530	0	0.200	0.200	0
DP Groundwater	Metals	Total	Nickel	N/A	N/A	ug/L	610	10	1	7	0.370	0.370	0	10.0	10.0	0
DP Groundwater	Metals	Total	Potassium	N/A	N/A	ug/L	NV	10	0	2	-	-	-	1,000	1,000	-
DP Groundwater	Metals	Total	Silver	N/A	N/A	ug/L	180	10	1	6	0.0188	0.0188	0	0.100	0.100	0
DP Groundwater	Metals	Total	Thallium	N/A	N/A	ug/L	0.24	10	3	7	0.0292	0.0292	0	0.500	0.500	10
DP Groundwater	Metals	Total	Vanadium	N/A	N/A	ug/L	2.6	10	0	6	-	-	-	10.0	10.0	6

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(13 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
DP Groundwater	Metals	Dissolved	Aluminum	N/A	N/A	ug/L	37,000	10	3	5	5.88	5.88	0	100	100	0
DP Groundwater	Metals	Dissolved	Antimony	N/A	N/A	ug/L	5.6	10	0	9	-	-	-	0.500	0.500	0
DP Groundwater	Metals	Dissolved	Arsenic	N/A	N/A	ug/L	0.018	10	0	1	-	-	-	0.500	0.500	1
DP Groundwater	Metals	Dissolved	Beryllium	N/A	N/A	ug/L	73	10	10	-	0.0782	0.0782	0	0.500	0.500	0
DP Groundwater	Metals	Dissolved	Cadmium	N/A	N/A	ug/L	18	10	9	1	0.0247	0.0247	0	0.500	0.500	0
DP Groundwater	Metals	Dissolved	Cobalt	N/A	N/A	ug/L	11	10	2	7	0.770	0.770	0	5.00	5.00	0
DP Groundwater	Metals	Dissolved	Copper	N/A	N/A	ug/L	1,300	10	3	-	0.500	1.23	0	0.500	1.23	0
DP Groundwater	Metals	Dissolved	Iron	N/A	N/A	ug/L	300	10	6	1	14.0	14.0	0	100	100	0
DP Groundwater	Metals	Dissolved	Lead	N/A	N/A	ug/L	15	10	4	6	0.0240	0.500	0	0.500	0.500	0
DP Groundwater	Metals	Dissolved	Mercury	N/A	N/A	ug/L	11	10	8	2	0.0530	0.0530	0	0.200	0.200	0
DP Groundwater	Metals	Dissolved	Nickel	N/A	N/A	ug/L	610	10	7	3	0.370	10.0	0	10.0	10.0	0
DP Groundwater	Metals	Dissolved	Potassium	N/A	N/A	ug/L	NV	10	0	3	-	-	-	1,000	1,000	-
DP Groundwater	Metals	Dissolved	Selenium	N/A	N/A	ug/L	170	10	0	3	-	-	-	0.500	0.500	0
DP Groundwater	Metals	Dissolved	Silver	N/A	N/A	ug/L	180	10	2	8	0.0188	0.0188	0	0.100	0.100	0
DP Groundwater	Metals	Dissolved	Thallium	N/A	N/A	ug/L	0.24	10	7	3	0.0292	0.0292	0	0.500	0.500	10
DP Groundwater	Metals	Dissolved	Vanadium	N/A	N/A	ug/L	2.6	10	4	6	0.488	10.0	3	10.0	10.0	10
DP Groundwater	Metals	Dissolved	Zinc	N/A	N/A	ug/L	7,400	10	6	-	2.00	2.00	0	2.00	2.00	0
DP Groundwater	Butyltins	Total	Dibutyltin	N/A	N/A	ug/L	11	4	4	-	0.000231	0.000287	0	0.000793	0.000988	0
DP Groundwater	Butyltins	Total	Monobutyltin	N/A	N/A	ug/L	11	4	2	-	0.000114	0.000142	0	0.000396	0.000494	0
DP Groundwater	Butyltins	Total	Tetrabutyltin	N/A	N/A	ug/L	11	4	4	-	0.000600	0.000748	0	0.00198	0.00247	0
DP Groundwater	Butyltins	Total	Tributyltin	N/A	N/A	ug/L	11	4	2	-	0.000454	0.000552	0	0.00142	0.00173	0
DP Groundwater	Pesticides	Total	4,4'-DDD	N/A	N/A	ug/L	0.00031	3	3	-	0.000453	0.000575	3	0.00385	0.00488	3
DP Groundwater	Pesticides	Total	4,4'-DDE	N/A	N/A	ug/L	0.00022	3	3	-	0.000375	0.000476	3	0.00385	0.00488	3
DP Groundwater	Pesticides	Total	4,4'-DDT	N/A	N/A	ug/L	0.00022	3	3	-	0.000480	0.000609	3	0.00385	0.00488	3
DP Groundwater	Pesticides	Total	Aldrin	N/A	N/A	ug/L	0.000049	3	3	-	0.000110	0.000140	3	0.000962	0.00122	3
DP Groundwater	Pesticides	Total	BHC (alpha)	N/A	N/A	ug/L	0.0026	3	3	-	0.000354	0.000449	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	BHC (beta)	N/A	N/A	ug/L	0.0091	3	3	-	0.000411	0.000521	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	BHC (delta)	N/A	N/A	ug/L	0.0026	3	3	-	0.000226	0.000286	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	BHC (gamma) Lindane	N/A	N/A	ug/L	0.052	3	0	1	-	-	-	0.00111	0.00111	0
DP Groundwater	Pesticides	Total	Chlordane (alpha)	N/A	N/A	ug/L	0.0008	3	3	-	0.000339	0.000429	0	0.000962	0.00122	3
DP Groundwater	Pesticides	Total	Chlordane (gamma)	N/A	N/A	ug/L	0.0008	3	3	-	0.000461	0.000584	0	0.000962	0.00122	3
DP Groundwater	Pesticides	Total	Dieldrin	N/A	N/A	ug/L	0.000052	3	3	-	0.000290	0.000368	3	0.00192	0.00244	3
DP Groundwater	Pesticides	Total	Endosulfan I	N/A	N/A	ug/L	62	3	3	-	0.000480	0.000608	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	Endosulfan II	N/A	N/A	ug/L	62	3	3	-	0.000411	0.00192	0	0.00192	0.00244	0
DP Groundwater	Pesticides	Total	Endosulfan Sulfate	N/A	N/A	ug/L	62	3	3	-	0.000517	0.000655	0	0.00192	0.00244	0
DP Groundwater	Pesticides	Total	Endrin Aldehyde	N/A	N/A	ug/L	0.29	3	3	-	0.000936	0.00119	0	0.00192	0.00244	0
DP Groundwater	Pesticides	Total	Endrin Ketone	N/A	N/A	ug/L	0.059	3	3	-	0.000332	0.000421	0	0.00192	0.00244	0
DP Groundwater	Pesticides	Total	Endrin	N/A	N/A	ug/L	0.059	3	3	-	0.000298	0.000378	0	0.00192	0.00244	0
DP Groundwater	Pesticides	Total	Heptachlor Epoxide	N/A	N/A	ug/L	0.000039	3	3	-	0.000360	0.000456	3	0.000962	0.00122	3
DP Groundwater	Pesticides	Total	Heptachlor	N/A	N/A	ug/L	0.000079	3	3	-	0.000724	0.000919	3	0.000962	0.00122	3
DP Groundwater	Pesticides	Total	Methoxychlor	N/A	N/A	ug/L	100	3	1	2	0.000584	0.000584	0	0.0109	0.0122	0
DP Groundwater	Pesticides	Total	Toxaphene	N/A	N/A	ug/L	0.00028	3	3	-	0.0112	0.0142	3	0.0962	0.122	3
DP Groundwater	PCB Aroclors	Total	Aroclor 1016	N/A	N/A	ug/L	0.000064	7	7	-	0.00206	0.00244	7	0.00941	0.0112	7
DP Groundwater	PCB Aroclors	Total	Aroclor 1221	N/A	N/A	ug/L	0.000064	7	7	-	0.00206	0.00244	7	0.00941	0.0112	7
DP Groundwater	PCB Aroclors	Total	Aroclor 1232	N/A	N/A	ug/L	0.000064	7	7	-	0.00206	0.00244	7	0.00941	0.0112	7
DP Groundwater	PCB Aroclors	Total	Aroclor 1242	N/A	N/A	ug/L	0.000064	7	7	-	0.00206	0.00244	7	0.00941	0.0112	7
DP Groundwater	PCB Aroclors	Total	Aroclor 1248	N/A	N/A	ug/L	0.000064	7	7	-	0.00206	0.00244	7	0.00941	0.0112	7
DP Groundwater	PCB Aroclors	Total	Aroclor 1254	N/A	N/A	ug/L	0.000064	7	7	-	0.00227	0.00269	7	0.00941	0.0112	7
DP Groundwater	PCB Aroclors	Total	Aroclor 1260	N/A	N/A	ug/L	0.000064	7	7	-	0.00227	0.00269	7	0.00941	0.0112	7
DP Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	N/A	ug/L	90	4	4	-	74.7	89.7	0	244	293	4
DP Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	N/A	ug/L	290	4	3	1	92.5	111	0	487	585	4
DP Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	N/A	ug/L	100	6	4	2	13.0	13.0	0	100	100	0
DP Groundwater	SVOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	2.3	9	9	-	0.0117	0.0151	0	0.190	1.00	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(14 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
DP Groundwater	SVOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	370	9	9	-	0.0264	0.0340	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	0.42	9	9	-	0.0349	0.0449	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	0.42	9	9	-	0.0300	0.0387	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2,4,5-Trichlorophenol	N/A	N/A	ug/L	1,800	6	6	-	0.0421	0.0542	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2,4,6-Trichlorophenol	N/A	N/A	ug/L	1.4	6	6	-	0.0305	0.0393	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2,4-Dichlorophenol	N/A	N/A	ug/L	77	6	6	-	0.0177	0.0228	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2,4-Dimethylphenol	N/A	N/A	ug/L	380	6	6	-	0.174	0.224	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	2,4-Dinitrophenol	N/A	N/A	ug/L	69	6	6	-	0.197	0.253	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	2,4-Dinitrotoluene	N/A	N/A	ug/L	0.11	9	9	-	0.0545	0.0703	0	0.190	0.245	9
DP Groundwater	SVOCs	Total	2,6-Dinitrotoluene	N/A	N/A	ug/L	37	9	9	-	0.0361	0.0465	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2-Chloronaphthalene	N/A	N/A	ug/L	1,000	9	9	-	0.00456	0.00588	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	2-Chlorophenol	N/A	N/A	ug/L	81	6	6	-	0.0400	0.0515	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2-Methylnaphthalene	N/A	N/A	ug/L	150	9	3	3	0.0142	0.0149	0	0.0475	0.0553	0
DP Groundwater	SVOCs	Total	2-Methylphenol	N/A	N/A	ug/L	1,800	6	6	-	0.0371	0.0479	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2-Nitroaniline	N/A	N/A	ug/L	370	9	9	-	0.0284	0.0366	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2-Nitrophenol	N/A	N/A	ug/L	10,000	6	6	-	0.0406	0.0524	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	3,3'-Dichlorobenzidine	N/A	N/A	ug/L	0.021	9	9	-	0.178	0.229	9	0.950	1.22	9
DP Groundwater	SVOCs	Total	3-Nitroaniline	N/A	N/A	ug/L	3.4	9	9	-	0.0537	0.0692	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	4,6-Dinitro-2-methylphenol	N/A	N/A	ug/L	2.9	6	6	-	0.294	0.379	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	4-Bromophenyl Phenyl Ether	N/A	N/A	ug/L	NV	9	9	-	0.0208	0.0268	-	0.190	0.245	-
DP Groundwater	SVOCs	Total	4-Chloro-3-methylphenol	N/A	N/A	ug/L	3,700	6	6	-	0.0232	0.0299	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	4-Chloroaniline	N/A	N/A	ug/L	0.34	9	9	-	0.0687	0.0885	0	0.285	0.367	1
DP Groundwater	SVOCs	Total	4-Chlorophenyl Phenyl Ether	N/A	N/A	ug/L	NV	9	9	-	0.0306	0.0394	-	0.190	0.245	-
DP Groundwater	SVOCs	Total	4-Nitroaniline	N/A	N/A	ug/L	3.4	9	9	-	0.0368	0.0475	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	4-Nitrophenol	N/A	N/A	ug/L	10,000	6	6	-	0.112	0.144	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	Acenaphthene	N/A	N/A	ug/L	670	9	4	5	0.00323	0.00356	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	Acenaphthylene	N/A	N/A	ug/L	0.14	9	9	-	0.00228	0.00294	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	Aniline	N/A	N/A	ug/L	12	9	9	-	0.0310	0.367	0	0.285	0.367	0
DP Groundwater	SVOCs	Total	Anthracene	N/A	N/A	ug/L	8,300	9	8	1	0.00180	0.00209	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	Benzidine	N/A	N/A	ug/L	0.000086	9	9	-	0.950	1.22	9	0.950	1.22	9
DP Groundwater	SVOCs	Total	Benzo(a)anthracene	N/A	N/A	ug/L	0.0038	9	9	-	0.00494	0.00636	9	0.0190	0.0245	9
DP Groundwater	SVOCs	Total	Benzo(a)pyrene	N/A	N/A	ug/L	0.0029	9	8	1	0.00313	0.00363	8	0.0190	0.0245	9
DP Groundwater	SVOCs	Total	Benzo(g,h,i)perylene	N/A	N/A	ug/L	0.290	9	9	-	0.00484	0.00624	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	Benzofluoranthenes, Total	N/A	N/A	ug/L	0.00380	9	8	1	0.0113	0.0131	9	0.0950	0.122	9
DP Groundwater	SVOCs	Total	Benzoic Acid	N/A	N/A	ug/L	150,000	6	6	-	0.127	0.164	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	Benzyl Alcohol	N/A	N/A	ug/L	3,700	7	5	2	0.0404	0.0520	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Bis(2-chloroethoxy)methane	N/A	N/A	ug/L	110	9	9	-	0.0172	0.0222	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Bis(2-chloroethyl) Ether	N/A	N/A	ug/L	0.012	9	9	-	0.0308	0.0397	9	0.190	0.245	9
DP Groundwater	SVOCs	Total	Bis(2-chloroisopropyl) Ether	N/A	N/A	ug/L	1,400	9	9	-	0.0407	0.0525	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	N/A	ug/L	1.2	9	8	1	0.362	0.466	0	1.42	1.84	9
DP Groundwater	SVOCs	Total	Butyl Benzyl Phthalate	N/A	N/A	ug/L	35	9	3	6	0.102	0.285	0	0.285	0.367	0
DP Groundwater	SVOCs	Total	Carbazole	N/A	N/A	ug/L	NV	9	9	-	0.0206	0.0266	-	0.190	0.245	-
DP Groundwater	SVOCs	Total	Chrysene	N/A	N/A	ug/L	0.0038	9	9	-	0.00798	0.0103	9	0.0190	0.0245	9
DP Groundwater	SVOCs	Total	Dibenz(a,h)anthracene	N/A	N/A	ug/L	0.0029	9	8	1	0.00294	0.00341	8	0.0190	0.0245	9
DP Groundwater	SVOCs	Total	Dibenzofuran	N/A	N/A	ug/L	37	9	7	2	0.0195	0.0215	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Diethyl Phthalate	N/A	N/A	ug/L	17,000	9	9	-	0.0529	0.0682	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Dimethyl Phthalate	N/A	N/A	ug/L	29,000	9	9	-	0.0370	0.0477	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Di-n-butyl Phthalate	N/A	N/A	ug/L	2,000	9	3	5	0.190	0.608	0	0.190	0.608	0
DP Groundwater	SVOCs	Total	Di-n-octyl Phthalate	N/A	N/A	ug/L	1.2	9	9	-	0.0259	0.0334	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Fluoranthene	N/A	N/A	ug/L	130	9	8	-	0.00541	0.00626	0	0.0190	0.0220	0
DP Groundwater	SVOCs	Total	Fluorene	N/A	N/A	ug/L	1,100	9	3	5	0.00161	0.00178	0	0.0190	0.0221	0
DP Groundwater	SVOCs	Total	Hexachlorobenzene	N/A	N/A	ug/L	0.00028	9	9	-	0.0237	0.0306	9	0.190	0.245	9
DP Groundwater	SVOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	0.44	9	9	-	0.0140	0.0180	0	0.190	0.245	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(15 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
DP Groundwater	SVOCs	Total	Hexachlorocyclopentadiene	N/A	N/A	ug/L	40	9	9	-	0.294	0.379	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	Hexachloroethane	N/A	N/A	ug/L	1.4	9	9	-	0.0362	0.0466	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Indeno(1,2,3-cd)pyrene	N/A	N/A	ug/L	0.0038	9	8	1	0.00266	0.00308	0	0.0190	0.0245	9
DP Groundwater	SVOCs	Total	Isophorone	N/A	N/A	ug/L	35	9	7	2	0.0278	0.0311	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Naphthalene	N/A	N/A	ug/L	0.14	9	5	4	0.0165	0.0191	0	0.0475	1.00	4
DP Groundwater	SVOCs	Total	Nitrobenzene	N/A	N/A	ug/L	0.12	9	9	-	0.0494	0.0636	0	0.190	0.245	9
DP Groundwater	SVOCs	Total	N-Nitrosodimethylamine	N/A	N/A	ug/L	0.00042	9	9	-	0.950	1.22	9	0.950	1.22	9
DP Groundwater	SVOCs	Total	N-Nitrosodi-n-propylamine	N/A	N/A	ug/L	0.005	9	9	-	0.0350	0.0452	9	0.190	0.245	9
DP Groundwater	SVOCs	Total	N-Nitrosodiphenylamine	N/A	N/A	ug/L	3.3	9	9	-	0.00807	0.0104	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	N/A	ug/L	180	6	6	-	0.0419	0.0540	0	0.380	0.490	0
DP Groundwater	SVOCs	Total	Pentachlorophenol	N/A	N/A	ug/L	0.27	6	6	-	0.190	0.245	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Phenanthrene	N/A	N/A	ug/L	8,300	9	1	7	0.00351	0.00351	0	0.0190	0.0221	0
DP Groundwater	SVOCs	Total	Phenol	N/A	N/A	ug/L	10,000	8	3	5	0.00437	0.00563	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Pyrene	N/A	N/A	ug/L	830	9	6	2	0.00275	0.00319	0	0.0190	0.0220	0
DP Groundwater	SVOCs	Dissolved	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	2.3	8	8	-	0.0120	0.0139	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	1,2-Dichlorobenzene	N/A	N/A	ug/L	370	8	8	-	0.0272	0.0313	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	1,3-Dichlorobenzene	N/A	N/A	ug/L	0.42	8	8	-	0.0359	0.0413	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	1,4-Dichlorobenzene	N/A	N/A	ug/L	0.42	8	8	-	0.0310	0.0356	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	2,4,5-Trichlorophenol	N/A	N/A	ug/L	1,800	3	3	-	0.0457	0.0499	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	2,4,6-Trichlorophenol	N/A	N/A	ug/L	1.4	3	3	-	0.0331	0.0361	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	2,4-Dichlorophenol	N/A	N/A	ug/L	77	3	3	-	0.0192	0.0209	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	2,4-Dimethylphenol	N/A	N/A	ug/L	380	3	3	-	0.189	0.206	0	1.03	1.13	0
DP Groundwater	SVOCs	Dissolved	2,4-Dinitrophenol	N/A	N/A	ug/L	69	3	3	-	0.214	0.233	0	1.03	1.13	0
DP Groundwater	SVOCs	Dissolved	2,4-Dinitrotoluene	N/A	N/A	ug/L	0.11	8	8	-	0.0562	0.0646	0	0.196	0.225	8
DP Groundwater	SVOCs	Dissolved	2,6-Dinitrotoluene	N/A	N/A	ug/L	37	8	8	-	0.0372	0.0428	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	2-Chloronaphthalene	N/A	N/A	ug/L	1,000	8	8	-	0.00470	0.00541	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	2-Chlorophenol	N/A	N/A	ug/L	81	3	3	-	0.0434	0.0474	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	2-Methylnaphthalene	N/A	N/A	ug/L	150	8	2	4	0.0147	0.0168	0	0.0490	0.0563	0
DP Groundwater	SVOCs	Dissolved	2-Methylphenol	N/A	N/A	ug/L	1,800	3	3	-	0.0404	0.0440	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	2-Nitroaniline	N/A	N/A	ug/L	370	8	8	-	0.0293	0.0337	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	2-Nitrophenol	N/A	N/A	ug/L	10,000	3	3	-	0.0442	0.0482	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	3,3'-Dichlorobenzidine	N/A	N/A	ug/L	0.021	8	8	-	0.183	0.211	8	0.979	1.13	8
DP Groundwater	SVOCs	Dissolved	3-Nitroaniline	N/A	N/A	ug/L	3.4	8	8	-	0.0553	0.0636	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	4,6-Dinitro-2-methylphenol	N/A	N/A	ug/L	2.9	3	3	-	0.320	0.349	0	1.03	1.13	0
DP Groundwater	SVOCs	Dissolved	4-Bromophenyl Phenyl Ether	N/A	N/A	ug/L	NV	8	8	-	0.0214	0.0247	-	0.196	0.225	-
DP Groundwater	SVOCs	Dissolved	4-Chloro-3-methylphenol	N/A	N/A	ug/L	3,700	3	3	-	0.0252	0.0275	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	4-Chloroaniline	N/A	N/A	ug/L	0.34	8	8	-	0.0708	0.0814	0	0.294	0.338	0
DP Groundwater	SVOCs	Dissolved	4-Chlorophenyl Phenyl Ether	N/A	N/A	ug/L	NV	8	8	-	0.0315	0.0363	-	0.196	0.225	-
DP Groundwater	SVOCs	Dissolved	4-Nitroaniline	N/A	N/A	ug/L	3.4	8	8	-	0.0380	0.0437	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	4-Nitrophenol	N/A	N/A	ug/L	10,000	3	3	-	0.122	0.133	0	1.03	1.13	0
DP Groundwater	SVOCs	Dissolved	Acenaphthene	N/A	N/A	ug/L	670	8	3	4	0.00333	0.00345	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Acenaphthylene	N/A	N/A	ug/L	0.14	8	7	1	0.00235	0.00270	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Anthracene	N/A	N/A	ug/L	8,300	8	8	-	0.00186	0.00214	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Benzidine	N/A	N/A	ug/L	0.000086	8	8	-	0.979	1.13	8	0.979	1.13	8
DP Groundwater	SVOCs	Dissolved	Benzo(a)anthracene	N/A	N/A	ug/L	0.0038	8	8	-	0.00509	0.00586	8	0.0196	0.0225	8
DP Groundwater	SVOCs	Dissolved	Benzo(a)pyrene	N/A	N/A	ug/L	0.0029	8	7	1	0.00323	0.00372	7	0.0196	0.0225	8
DP Groundwater	SVOCs	Dissolved	Benzo(g,h,i)perylene	N/A	N/A	ug/L	0.290	8	8	-	0.00500	0.00574	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Benzofluoranthenes, Total	N/A	N/A	ug/L	0.00380	8	8	-	0.0117	0.0134	9	0.0979	0.113	9
DP Groundwater	SVOCs	Dissolved	Benzoic Acid	N/A	N/A	ug/L	150,000	4	3	1	0.138	0.151	0	1.03	1.21	0
DP Groundwater	SVOCs	Dissolved	Benzyl Alcohol	N/A	N/A	ug/L	3,700	3	3	-	0.0439	0.0479	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	Bis(2-chloroethoxy)methane	N/A	N/A	ug/L	110	8	8	-	0.0177	0.0204	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Bis(2-chloroethyl) Ether	N/A	N/A	ug/L	0.012	8	8	-	0.0317	0.0365	8	0.196	0.225	8
DP Groundwater	SVOCs	Dissolved	Bis(2-chloroisopropyl) Ether	N/A	N/A	ug/L	1,400	8	8	-	0.0420	0.0483	0	0.196	0.225	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
DP Groundwater	SVOCs	Dissolved	Bis(2-ethylhexyl) Phthalate	N/A	N/A	ug/L	1.2	8	8	-	0.373	0.429	0	1.47	1.69	8
DP Groundwater	SVOCs	Dissolved	Butyl Benzyl Phthalate	N/A	N/A	ug/L	35	8	2	6	0.327	0.338	0	0.294	0.363	0
DP Groundwater	SVOCs	Dissolved	Carbazole	N/A	N/A	ug/L	NV	8	8	-	0.0213	0.0244	-	0.196	0.225	-
DP Groundwater	SVOCs	Dissolved	Chrysene	N/A	N/A	ug/L	0.0038	8	8	-	0.00823	0.00946	8	0.0196	0.0225	8
DP Groundwater	SVOCs	Dissolved	Dibenz(a,h)anthracene	N/A	N/A	ug/L	0.0029	8	7	1	0.00304	0.00349	7	0.0196	0.0225	8
DP Groundwater	SVOCs	Dissolved	Dibenzofuran	N/A	N/A	ug/L	37	8	8	-	0.0201	0.0231	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Diethyl Phthalate	N/A	N/A	ug/L	17,000	8	5	3	0.0546	0.0584	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Dimethyl Phthalate	N/A	N/A	ug/L	29,000	8	8	-	0.0382	0.0439	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Di-n-butyl Phthalate	N/A	N/A	ug/L	2,000	8	2	6	0.218	0.275	0	0.196	0.275	0
DP Groundwater	SVOCs	Dissolved	Di-n-octyl Phthalate	N/A	N/A	ug/L	1.2	8	8	-	0.0267	0.0307	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Fluoranthene	N/A	N/A	ug/L	130	8	8	-	0.00558	0.00642	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Fluorene	N/A	N/A	ug/L	1,100	8	3	5	0.00167	0.00191	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Hexachlorobenzene	N/A	N/A	ug/L	0.00028	8	8	-	0.0245	0.0282	8	0.196	0.225	8
DP Groundwater	SVOCs	Dissolved	Hexachlorobutadiene	N/A	N/A	ug/L	0.44	8	8	-	0.0144	0.0166	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Hexachlorocyclopentadiene	N/A	N/A	ug/L	40	8	8	-	0.304	0.349	0	0.979	1.13	0
DP Groundwater	SVOCs	Dissolved	Hexachloroethane	N/A	N/A	ug/L	1.4	8	8	-	0.0373	0.0429	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Indeno(1,2,3-cd)pyrene	N/A	N/A	ug/L	0.0038	8	7	1	0.00274	0.00315	0	0.0196	0.0225	8
DP Groundwater	SVOCs	Dissolved	Isophorone	N/A	N/A	ug/L	35	8	6	2	0.0277	0.0297	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Naphthalene	N/A	N/A	ug/L	0.14	8	2	3	0.0190	0.0196	0	0.0502	0.0605	0
DP Groundwater	SVOCs	Dissolved	Nitrobenzene	N/A	N/A	ug/L	0.12	8	8	-	0.0509	0.0586	0	0.196	0.225	8
DP Groundwater	SVOCs	Dissolved	N-Nitrosodimethylamine	N/A	N/A	ug/L	0.00042	8	8	-	0.979	1.13	8	0.979	1.13	8
DP Groundwater	SVOCs	Dissolved	N-Nitrosodi-n-propylamine	N/A	N/A	ug/L	0.005	8	8	-	0.0361	0.0416	8	0.196	0.225	8
DP Groundwater	SVOCs	Dissolved	N-Nitrosodiphenylamine	N/A	N/A	ug/L	3.3	8	8	-	0.00833	0.00957	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	p-cresol (4-Methylphenol)	N/A	N/A	ug/L	180	3	3	-	0.0455	0.0497	0	0.413	0.450	0
DP Groundwater	SVOCs	Dissolved	Pentachlorophenol	N/A	N/A	ug/L	0.27	3	3	-	0.206	0.225	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	Phenanthrene	N/A	N/A	ug/L	8,300	8	2	6	0.00403	0.00417	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Phenol	N/A	N/A	ug/L	10,000	4	1	3	0.00483	0.00483	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Pyrene	N/A	N/A	ug/L	830	8	8	-	0.00284	0.00327	0	0.0196	0.0225	0
DP Groundwater	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	N/A	ug/L	0.52	10	10	-	0.0528	0.0528	0	1.00	1.00	10
DP Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/L	9,100	10	3	6	0.0477	0.0477	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	N/A	ug/L	0.067	10	10	-	0.0680	0.0680	10	1.00	1.00	10
DP Groundwater	VOCs	Total	1,1,2-Trichloroethane	N/A	N/A	ug/L	0.23	10	10	-	0.0627	0.0627	0	1.00	1.00	10
DP Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	N/A	ug/L	2.3	10	5	4	0.0360	0.0360	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	N/A	ug/L	330	10	8	1	0.0595	0.0595	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,1-Dichloropropene	N/A	N/A	ug/L	0.43	10	10	-	0.0695	0.0695	0	1.00	1.00	10
DP Groundwater	VOCs	Total	1,2,3-Trichlorobenzene	N/A	N/A	ug/L	29	10	10	-	0.0605	0.0605	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,2,3-Trichloropropane	N/A	N/A	ug/L	0.00072	10	10	-	0.123	0.123	10	1.00	1.00	10
DP Groundwater	VOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	2.3	10	10	-	0.0513	1.00	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	N/A	ug/L	15	10	7	3	0.0283	0.0283	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	N/A	ug/L	0.00032	10	10	-	0.222	0.222	10	1.00	1.00	10
DP Groundwater	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	N/A	ug/L	0.0063	10	10	-	0.0637	0.0637	10	1.00	1.00	10
DP Groundwater	VOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	370	10	10	-	0.0383	0.0383	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	N/A	ug/L	0.14	10	10	-	0.0533	0.0533	0	1.00	1.00	10
DP Groundwater	VOCs	Total	1,2-Dichloropropane	N/A	N/A	ug/L	0.39	10	10	-	0.0380	0.0380	0	1.00	1.00	10
DP Groundwater	VOCs	Total	1,3,5-Trimethylbenzene	N/A	N/A	ug/L	12	10	9	1	0.0249	0.0249	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	0.42	10	10	-	0.0599	0.0599	0	1.00	1.00	10
DP Groundwater	VOCs	Total	1,3-Dichloropropane	N/A	N/A	ug/L	730	10	10	-	0.0738	0.0738	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	0.42	10	10	-	0.0180	0.0180	0	1.00	1.00	10
DP Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	N/A	ug/L	0.39	10	7	3	0.0487	0.0487	0	1.00	1.00	10
DP Groundwater	VOCs	Total	2-Butanone (MEK)	N/A	N/A	ug/L	7,100	10	10	-	1.71	1.71	0	5.00	5.00	0
DP Groundwater	VOCs	Total	2-Chlorotoluene	N/A	N/A	ug/L	730	10	10	-	0.0857	0.0857	0	1.00	1.00	0
DP Groundwater	VOCs	Total	2-Hexanone	N/A	N/A	ug/L	47	10	10	-	0.993	0.993	0	5.00	5.00	0
DP Groundwater	VOCs	Total	4-Chlorotoluene	N/A	N/A	ug/L	2,600	10	10	-	0.0491	0.0491	0	1.00	1.00	0

Table K-2
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
DP Groundwater	VOCs	Total	4-Isopropyltoluene	N/A	N/A	ug/L	NV	10	10	-	0.0397	0.0397	-	1.00	1.00	-
DP Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	N/A	ug/L	2,000	10	10	-	0.309	0.309	0	5.00	5.00	0
DP Groundwater	VOCs	Total	Acetone	N/A	N/A	ug/L	22,000	10	7	3	1.20	1.20	0	5.00	5.00	0
DP Groundwater	VOCs	Total	Benzene	N/A	N/A	ug/L	0.39	10	4	6	0.0417	0.0417	0	1.00	1.00	10
DP Groundwater	VOCs	Total	Bromobenzene	N/A	N/A	ug/L	88	10	10	-	0.0475	0.0475	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Bromochloromethane	N/A	N/A	ug/L	0.12	10	10	-	0.0573	0.0573	0	1.00	1.00	10
DP Groundwater	VOCs	Total	Bromodichloromethane	N/A	N/A	ug/L	0.12	10	10	-	0.0785	0.0785	0	1.00	1.00	10
DP Groundwater	VOCs	Total	Bromoform	N/A	N/A	ug/L	4.3	10	9	1	0.0830	0.0830	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Bromomethane	N/A	N/A	ug/L	8.7	10	10	-	0.0748	1.00	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Carbon Disulfide	N/A	N/A	ug/L	1,000	10	9	1	0.0494	1.00	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	N/A	ug/L	0.19	10	10	-	0.0970	0.0970	0	1.00	1.00	10
DP Groundwater	VOCs	Total	Chlorobenzene	N/A	N/A	ug/L	91	10	10	-	0.0376	0.0376	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Chloroethane	N/A	N/A	ug/L	21,000	10	10	-	0.187	0.187	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Chloroform	N/A	N/A	ug/L	0.19	10	8	2	0.0717	0.0717	0	1.00	1.00	10
DP Groundwater	VOCs	Total	Chloromethane	N/A	N/A	ug/L	190	10	10	-	0.110	0.110	0	1.00	1.00	0
DP Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/L	360	10	1	3	0.0433	0.0433	0	1.00	1.00	0
DP Groundwater	VOCs	Total	cis-1,3-Dichloropropene	N/A	N/A	ug/L	0.43	10	10	-	0.0301	0.0301	0	1.00	1.00	10
DP Groundwater	VOCs	Total	Dibromochloromethane	N/A	N/A	ug/L	0.4	10	10	-	0.0539	0.0539	0	1.00	1.00	10
DP Groundwater	VOCs	Total	Dibromomethane	N/A	N/A	ug/L	8.2	10	10	-	0.0864	0.0864	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Dichlorodifluoromethane	N/A	N/A	ug/L	390	10	10	-	0.0575	0.0575	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	N/A	ug/L	4.4	10	10	-	0.0752	1.00	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Ethylbenzene	N/A	N/A	ug/L	1.4	10	6	4	0.0226	1.00	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	0.44	10	10	-	0.152	0.152	0	1.00	1.00	10
DP Groundwater	VOCs	Total	Isopropylbenzene	N/A	N/A	ug/L	680	10	9	1	0.0165	0.0165	0	1.00	1.00	0
DP Groundwater	VOCs	Total	m,p-Xylenes	N/A	N/A	ug/L	200	10	6	4	0.0718	0.0718	0	2.00	2.00	0
DP Groundwater	VOCs	Total	Naphthalene	N/A	N/A	ug/L	0.14	10	8	2	0.0317	1.00	4	1.00	1.00	10
DP Groundwater	VOCs	Total	n-Butylbenzene	N/A	N/A	ug/L	NV	10	10	-	0.0603	0.0603	-	1.00	1.00	-
DP Groundwater	VOCs	Total	n-Propylbenzene	N/A	N/A	ug/L	1,300	10	10	-	0.0356	0.0356	0	1.00	1.00	0
DP Groundwater	VOCs	Total	o-Xylene	N/A	N/A	ug/L	1,200	10	6	4	0.0265	0.0265	0	1.00	1.00	0
DP Groundwater	VOCs	Total	sec-Butylbenzene	N/A	N/A	ug/L	NV	10	10	-	0.0358	0.0358	-	1.00	1.00	-
DP Groundwater	VOCs	Total	Styrene	N/A	N/A	ug/L	1,600	10	10	-	0.0279	0.0279	0	1.00	1.00	0
DP Groundwater	VOCs	Total	tert-Butylbenzene	N/A	N/A	ug/L	NV	10	10	-	0.0535	0.0535	-	1.00	1.00	-
DP Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	N/A	ug/L	0.093	10	0	3	-	-	-	1.00	1.00	3
DP Groundwater	VOCs	Total	Toluene	N/A	N/A	ug/L	1,300	10	4	6	0.0588	1.00	0	1.00	1.00	0
DP Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	N/A	ug/L	110	10	7	1	0.0584	0.0584	0	1.00	1.00	0
DP Groundwater	VOCs	Total	trans-1,3-Dichloropropene	N/A	N/A	ug/L	0.43	10	10	-	0.0539	0.0539	0	1.00	1.00	10
DP Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/L	0.039	10	1	5	0.0641	0.0641	1	1.00	1.00	6
DP Groundwater	VOCs	Total	Trichlorofluoromethane	N/A	N/A	ug/L	1,300	10	10	-	0.0620	0.0620	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Vinyl Acetate	N/A	N/A	ug/L	410	10	10	-	0.320	1.01	0	5.00	5.00	0
DP Groundwater	VOCs	Total	Vinyl Chloride	N/A	N/A	ug/L	0.025	10	8	2	0.0604	0.0604	8	1.00	1.00	10
Soil Gas	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/m^3	22,000,000	5	0	4	-	-	-	8.30	690	0
Soil Gas	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	N/A	ug/m^3	210	5	5	-	1.90	110	0	10.0	590	1
Soil Gas	VOCs	Total	1,1,2-Trichloroethane	N/A	N/A	ug/m^3	770	5	5	-	2.00	110	0	8.30	470	0
Soil Gas	VOCs	Total	1,1-Dichloroethane	N/A	N/A	ug/m^3	7,700	5	5	-	0.980	56.0	0	6.10	350	0
Soil Gas	VOCs	Total	1,1-Dichloroethene	N/A	N/A	ug/m^3	880,000	5	5	-	0.840	48.0	0	6.00	340	0
Soil Gas	VOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/m^3	8,800	5	5	-	12.0	660	0	45.0	2,600	0
Soil Gas	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	N/A	ug/m^3	20	5	5	-	1.20	66.0	1	12.0	660	3
Soil Gas	VOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/m^3	880,000	5	5	-	1.60	93.0	0	9.10	520	0
Soil Gas	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	N/A	ug/m^3	470	5	5	-	0.860	49.0	0	6.10	350	0
Soil Gas	VOCs	Total	1,2-Dichloropropane	N/A	N/A	ug/m^3	1,200	5	5	-	0.980	56.0	0	7.00	400	0
Soil Gas	VOCs	Total	1,3-Butadiene	N/A	N/A	ug/m^3	410	5	1	1	23.0	23.0	0	4.90	190	0
Soil Gas	VOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/m^3	1,100	5	5	-	1.80	100	0	9.10	520	0
Soil Gas	VOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/m^3	1,100	5	5	-	1.80	100	0	9.10	520	0

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(18 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil Gas	VOCs	Total	1,4-Dioxane	N/A	N/A	ug/m^3	1,600	5	4	1	1.10	43.0	0	22.0	1,200	0
Soil Gas	VOCs	Total	2,2,4-Trimethylpentane	N/A	N/A	ug/m^3	31,000	5	4	1	1.20	48.0	0	7.10	400	0
Soil Gas	VOCs	Total	2-Butanone (MEK)	N/A	N/A	ug/m^3	22,000,000	5	3	-	1.70	66.0	0	6.50	250	0
Soil Gas	VOCs	Total	2-Hexanone	N/A	N/A	ug/m^3	130,000	5	5	-	2.40	130	0	25.0	1,400	0
Soil Gas	VOCs	Total	2-Propanol	N/A	N/A	ug/m^3	31,000,000	5	5	-	1.50	84.0	0	15.0	840	0
Soil Gas	VOCs	Total	3-Chloropropene	N/A	N/A	ug/m^3	2,000	5	5	-	2.60	150	0	19.0	1,100	0
Soil Gas	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	N/A	ug/m^3	13,000,000	5	4	1	1.10	42.0	0	6.20	350	0
Soil Gas	VOCs	Total	Acetone	N/A	N/A	ug/m^3	140,000,000	5	3	-	4.70	86.0	0	21.0	820	0
Soil Gas	VOCs	Total	alpha-Chlorotoluene	N/A	N/A	ug/m^3	250	5	5	-	1.60	89.0	0	7.80	440	1
Soil Gas	VOCs	Total	Benzene	N/A	N/A	ug/m^3	1,600	5	1	2	27.0	27.0	0	7.10	270	0
Soil Gas	VOCs	Total	Bromodichloromethane	N/A	N/A	ug/m^3	330	5	5	-	0.610	34.0	0	10.0	580	1
Soil Gas	VOCs	Total	Bromoform	N/A	N/A	ug/m^3	11,000	5	5	-	3.10	180	0	16.0	890	0
Soil Gas	VOCs	Total	Bromomethane	N/A	N/A	ug/m^3	22,000	5	5	-	1.40	80.0	0	5.90	330	0
Soil Gas	VOCs	Total	Carbon Disulfide	N/A	N/A	ug/m^3	3,100,000	5	2	2	4.70	27.0	0	4.70	270	0
Soil Gas	VOCs	Total	Carbon Tetrachloride	N/A	N/A	ug/m^3	820	5	5	-	1.10	65.0	0	9.50	540	0
Soil Gas	VOCs	Total	Chlorobenzene	N/A	N/A	ug/m^3	220,000	5	5	-	1.10	63.0	0	7.00	400	0
Soil Gas	VOCs	Total	Chloroethane	N/A	N/A	ug/m^3	44,000,000	5	5	-	0.640	36.0	0	4.00	230	0
Soil Gas	VOCs	Total	Chloroform	N/A	N/A	ug/m^3	530	5	4	1	1.10	42.0	0	7.40	420	0
Soil Gas	VOCs	Total	Chloromethane	N/A	N/A	ug/m^3	390,000	5	5	-	0.940	53.0	0	12.0	710	0
Soil Gas	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/m^3	260,000	5	0	2	-	-	-	19.0	500	0
Soil Gas	VOCs	Total	cis-1,3-Dichloropropene	N/A	N/A	ug/m^3	3,100	5	5	-	0.550	31.0	0	6.90	390	0
Soil Gas	VOCs	Total	Cyclohexane	N/A	N/A	ug/m^3	26,000,000	5	2	2	0.760	30.0	0	5.20	300	0
Soil Gas	VOCs	Total	Dibromochloromethane	N/A	N/A	ug/m^3	450	5	5	-	1.80	100	0	13.0	730	1
Soil Gas	VOCs	Total	Dichlorodifluoromethane	N/A	N/A	ug/m^3	880,000	5	3	2	4.20	76.0	0	7.50	420	0
Soil Gas	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	N/A	ug/m^3	26,000	5	4	1	1.50	60.0	0	5.30	300	0
Soil Gas	VOCs	Total	Ethanol	N/A	N/A	ug/m^3	NV	5	3	1	5.70	100	-	17.0	650	-
Soil Gas	VOCs	Total	Freon 113	N/A	N/A	ug/m^3	130,000,000	5	5	-	1.20	66.0	0	12.0	660	0
Soil Gas	VOCs	Total	Freon 114	N/A	N/A	ug/m^3	130,000,000	5	5	-	1.50	84.0	0	10.0	600	0
Soil Gas	VOCs	Total	Heptane	N/A	N/A	ug/m^3	3,100,000	5	1	2	9.00	9.00	0	9.00	520	0
Soil Gas	VOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/m^3	560	5	5	-	17.0	970	1	65.0	3,700	1
Soil Gas	VOCs	Total	Hexane	N/A	N/A	ug/m^3	3,100,000	5	1	2	42.0	42.0	0	7.80	300	0
Soil Gas	VOCs	Total	Isopropylbenzene	N/A	N/A	ug/m^3	1,800,000	5	0	2	-	-	-	7.40	24.0	0
Soil Gas	VOCs	Total	Methyl tert-butyl ether	N/A	N/A	ug/m^3	47,000	5	5	-	1.40	81.0	0	5.50	310	0
Soil Gas	VOCs	Total	n-Propylbenzene	N/A	N/A	ug/m^3	4,400,000	5	0	1	-	-	-	24.0	24.0	0
Soil Gas	VOCs	Total	Styrene	N/A	N/A	ug/m^3	4,400,000	5	5	-	1.30	73.0	0	6.40	370	0
Soil Gas	VOCs	Total	Tetrahydrofuran	N/A	N/A	ug/m^3	NV	5	5	-	1.10	61.0	-	4.50	250	-
Soil Gas	VOCs	Total	trans-1,2-Dichloroethene	N/A	N/A	ug/m^3	260,000	5	4	1	2.60	100	0	6.00	340	0
Soil Gas	VOCs	Total	trans-1,3-Dichloropropene	N/A	N/A	ug/m^3	3,100	5	5	-	0.960	55.0	0	6.90	390	0
Soil Gas	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/m^3	140	5	0	1	-	-	-	680	680	1
Soil Gas	VOCs	Total	Trichlorofluoromethane	N/A	N/A	ug/m^3	3,100,000	5	4	1	1.70	68.0	0	8.50	480	0
Soil Gas	VOCs	Total	Vinyl Chloride	N/A	N/A	ug/m^3	2,800	5	5	-	0.930	53.0	0	3.90	220	0

Notes
The erodible soil subset is comprised of the following samples: SB-EUA, SB-EUB, SB-EUA-02, SB-EUA-04, SB-EUA-06, SB-EUA-08, SB-EUB-02, SB-EUB-03, SB-EUB-12, SB-EUB-15, and SB-04.
= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.
= When the number of applicable MRLs > SLV is higher than the number of applicable MDLs > SLV, they are highlited pink when the number of MDLs > SLV is zero or difference is more than 1.

HH = human health
DP = Direct Push
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit

Table K-2
Human Health Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(19 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest HH SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV

N/A = not applicable
ND = non-detect
NV = No value
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SLV = screening level value
SVOC = semi-volatile organic carbon
VOC = volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
ug/m^3 = micrograms per cubic meter

Table K-3
Human Health Data Sensitivity Analysis for Pistol Range AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 1)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	Metals	Total	Antimony	0-1 ft	mg/kg	410	5	5	-	5.00	6.00	0	5.00	6.00	0
Soil	Metals	Total	Arsenic	0-1 ft	mg/kg	5.4	5	5	-	5.00	6.00	1	5.00	6.00	1
Soil	Metals	Total	Mercury	0-1 ft	mg/kg	93	14	14	-	0.0400	0.0600	0	0.0400	0.0600	0
DP Groun	Metals	Dissolved	Lead	N/A	ug/L	15	2	2	-	0.0200	0.0200	0	0.0200	0.0200	0
DP Groun	Metals	Dissolved	Nickel	N/A	ug/L	730	2	1	1	2.00	2.00	0	20.0	20.0	0

Notes

= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

HH = human health
DP = Direct Push
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit
N/A = not applicable
ND = non-detect
SLV = screening level value
ug/L = micrograms per liter

Table K-4
Human Health Data Sensitivity Analysis for Bulb Slope AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 1)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest HH SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MDLs > SLV
Soil	PCB Aroclors	Total	Aroclor 1016	0-1 ft	ug/kg	21,000	12	12	-	19.0	67.0	0	19.0	67.0	0
Soil	PCB Aroclors	Total	Aroclor 1221	0-1 ft	ug/kg	540	12	12	-	38.0	134	0	38.0	134	0
Soil	PCB Aroclors	Total	Aroclor 1232	0-1 ft	ug/kg	540	12	12	-	19.0	67.0	0	19.0	67.0	0
Soil	PCB Aroclors	Total	Aroclor 1242	0-1 ft	ug/kg	740	12	12	-	19.0	67.0	0	19.0	67.0	0
Soil	PCB Aroclors	Total	Aroclor 1248	0-1 ft	ug/kg	740	12	12	-	19.0	67.0	0	19.0	67.0	0
Soil	PCB Aroclors	Total	Aroclor 1254	0-1 ft	ug/kg	740	12	12	-	19.0	67.0	0	19.0	67.0	0
Soil	PCB Aroclors	Total	Aroclor 1260	0-1 ft	ug/kg	740	12	4	-	19.0	67.0	0	19.0	67.0	0
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	ug/kg	740	12	4	-	19.0	67.0	0	19.0	67.0	0

Notes

HH = human health
MDL = method detection limit
MRL = methode reporting limit
ND = non-detect
PCB = polychlorinated biphenyl
SLV = screening level value
ug/kg = micrograms per kilogram

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 22)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	Metals	Total	Antimony	0-1 ft	mg/kg	0.27	20	16	1	0.200	2.90	11	0.200	2.90	12
Soil	Metals	Total	Antimony	0-3 ft	mg/kg	0.27	22	16	2	0.200	2.90	11	0.200	3.04	13
Soil	Metals	Total	Beryllium	0-1 ft	mg/kg	21	21	4	-	0.189	0.280	0	0.270	0.467	0
Soil	Metals	Total	Beryllium	0-3 ft	mg/kg	21	23	6	-	0.157	0.280	0	0.270	0.467	0
Soil	Metals	Total	Cadmium	0-1 ft	mg/kg	0.36	21	6	-	0.260	0.290	0	0.260	0.290	0
Soil	Metals	Total	Cadmium	0-3 ft	mg/kg	0.36	23	6	-	0.260	0.290	0	0.260	0.290	0
Soil	Metals	Total	Mercury	0-1 ft	mg/kg	0.066	23	5	-	0.100	0.110	5	0.100	0.110	5
Soil	Metals	Total	Mercury	0-3 ft	mg/kg	0.066	25	5	-	0.100	0.110	5	0.100	0.110	5
Soil	Metals	Total	Selenium	0-1 ft	mg/kg	0.52	21	18	1	0.200	1.50	3	0.200	1.50	3
Soil	Metals	Total	Selenium	0-3 ft	mg/kg	0.52	23	18	3	0.200	1.50	3	0.200	2.02	4
Soil	Metals	Total	Silver	0-1 ft	mg/kg	4.2	21	14	-	0.200	0.570	0	0.200	0.570	0
Soil	Metals	Total	Silver	0-3 ft	mg/kg	4.2	23	14	2	0.200	0.570	0	0.200	2.02	0
Soil	Metals	Total	Thallium	0-1 ft	mg/kg	1	21	19	1	0.200	0.300	0	0.117	0.300	0
Soil	Metals	Total	Thallium	0-3 ft	mg/kg	1	23	19	3	0.200	0.300	0	0.0970	0.506	0
Soil	Butyltins	Total	Dibutyltin	0-1 ft	ug/kg	28,000	7	5	-	0.730	0.899	0	2.27	2.79	0
Soil	Butyltins	Total	Dibutyltin	0-3 ft	ug/kg	28,000	9	7	-	0.685	0.899	0	2.13	2.79	0
Soil	Butyltins	Total	Monobutyltin	0-1 ft	ug/kg	28,000	7	5	-	1.61	1.98	0	3.03	3.73	0
Soil	Butyltins	Total	Monobutyltin	0-3 ft	ug/kg	28,000	9	7	-	1.51	1.98	0	2.84	3.73	0
Soil	Butyltins	Total	Tetrabutyltin	0-1 ft	ug/kg	28,000	7	7	-	0.564	0.694	0	1.51	1.86	0
Soil	Butyltins	Total	Tetrabutyltin	0-3 ft	ug/kg	28,000	9	9	-	0.529	0.694	0	1.42	1.86	0
Soil	Butyltins	Total	Tributyltin	0-1 ft	ug/kg	28,000	7	4	-	1.20	1.43	0	3.13	3.73	0
Soil	Butyltins	Total	Tributyltin	0-3 ft	ug/kg	28,000	9	5	-	1.18	1.43	0	3.07	3.73	0
Soil	Herbicides	Total	2,4,5-T	0-1 ft	ug/kg	21	12	10	-	1.79	50.0	1	3.10	50.0	1
Soil	Herbicides	Total	2,4,5-T	0-3 ft	ug/kg	21	14	12	-	1.54	50.0	1	3.10	50.0	1
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-1 ft	ug/kg	21	12	12	-	2.50	50.0	1	2.50	50.0	1
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-3 ft	ug/kg	21	14	14	-	2.25	50.0	1	2.50	50.0	1
Soil	Herbicides	Total	2,4-D	0-1 ft	ug/kg	21	12	12	-	0.675	50.0	4	8.18	50.0	4
Soil	Herbicides	Total	2,4-D	0-3 ft	ug/kg	21	14	14	-	0.581	50.0	4	7.04	50.0	4
Soil	Herbicides	Total	2,4-DB	0-1 ft	ug/kg	21	12	12	-	1.15	50.0	2	5.00	50.0	2
Soil	Herbicides	Total	2,4-DB	0-3 ft	ug/kg	21	14	14	-	0.988	50.0	2	5.00	50.0	2
Soil	Herbicides	Total	4-Nitrophenol	0-1 ft	ug/kg	7,000	1	1	-	1.81	1.81	0	8.18	8.18	0
Soil	Herbicides	Total	4-Nitrophenol	0-3 ft	ug/kg	7,000	3	3	-	1.56	1.81	0	7.04	8.18	0
Soil	Herbicides	Total	Dalapon	0-1 ft	ug/kg	NV	12	12	-	2.50	50.0	-	8.18	50.0	-
Soil	Herbicides	Total	Dalapon	0-3 ft	ug/kg	NV	14	14	-	2.15	50.0	-	7.04	50.0	-
Soil	Herbicides	Total	Dicamba	0-1 ft	ug/kg	NV	12	12	-	1.99	50.0	-	2.10	50.0	-
Soil	Herbicides	Total	Dicamba	0-3 ft	ug/kg	NV	14	14	-	1.71	50.0	-	2.10	50.0	-
Soil	Herbicides	Total	Dichloroprop	0-1 ft	ug/kg	21	12	10	-	0.871	400	9	8.18	400	9
Soil	Herbicides	Total	Dichloroprop	0-3 ft	ug/kg	21	14	12	-	0.750	400	9	7.04	400	9
Soil	Herbicides	Total	Dinoseb	0-1 ft	ug/kg	NV	12	12	-	0.675	50.0	-	8.18	50.0	-
Soil	Herbicides	Total	Dinoseb	0-3 ft	ug/kg	NV	14	14	-	0.581	50.0	-	7.04	50.0	-
Soil	Herbicides	Total	MCPA	0-1 ft	ug/kg	21	12	12	-	1.23	25,000	11	8.18	25,000	11
Soil	Herbicides	Total	MCPA	0-3 ft	ug/kg	21	14	14	-	1.06	25,000	11	7.04	25,000	11
Soil	Herbicides	Total	MCPP	0-1 ft	ug/kg	21	12	10	-	2.24	38,000	9	8.18	38,000	9
Soil	Herbicides	Total	MCPP	0-3 ft	ug/kg	21	14	12	-	1.93	38,000	9	7.04	38,000	9
Soil	Herbicides	Total	Pentachlorophenol	0-1 ft	ug/kg	2,100	1	1	-	0.955	0.955	0	8.18	8.18	0
Soil	Herbicides	Total	Pentachlorophenol	0-3 ft	ug/kg	2,100	3	3	-	0.822	0.955	0	7.04	8.18	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	Pesticides	Total	4,4'-DDD	0-1 ft	ug/kg	21	21	21	-	1.00	25.0	1	1.00	25.0	1
Soil	Pesticides	Total	4,4'-DDD	0-3 ft	ug/kg	21	23	23	-	1.00	25.0	1	1.00	25.0	1
Soil	Pesticides	Total	4,4'-DDE	0-1 ft	ug/kg	21	21	20	-	1.00	9.40	0	1.00	9.40	0
Soil	Pesticides	Total	4,4'-DDE	0-3 ft	ug/kg	21	23	22	-	1.00	9.40	0	1.00	9.40	0
Soil	Pesticides	Total	4,4'-DDT	0-1 ft	ug/kg	21	21	14	-	1.00	13.0	0	1.00	13.0	0
Soil	Pesticides	Total	4,4'-DDT	0-3 ft	ug/kg	21	23	16	-	1.00	13.0	0	1.00	13.0	0
Soil	Pesticides	Total	Aldrin	0-1 ft	ug/kg	4.9	21	21	-	0.970	1.90	0	0.970	1.90	0
Soil	Pesticides	Total	Aldrin	0-3 ft	ug/kg	4.9	23	23	-	0.970	1.90	0	0.970	1.90	0
Soil	Pesticides	Total	BHC (alpha)	0-1 ft	ug/kg	8,000	21	21	-	0.500	1.90	0	0.500	1.90	0
Soil	Pesticides	Total	BHC (alpha)	0-3 ft	ug/kg	8,000	23	22	-	0.500	1.90	0	0.500	1.90	0
Soil	Pesticides	Total	BHC (beta)	0-1 ft	ug/kg	8,000	21	20	-	0.900	12.0	0	0.900	12.0	0
Soil	Pesticides	Total	BHC (beta)	0-3 ft	ug/kg	8,000	23	22	-	0.900	12.0	0	0.900	12.0	0
Soil	Pesticides	Total	BHC (delta)	0-1 ft	ug/kg	8,000	21	21	-	0.600	1.90	0	0.600	1.90	0
Soil	Pesticides	Total	BHC (delta)	0-3 ft	ug/kg	8,000	23	23	-	0.600	1.90	0	0.600	1.90	0
Soil	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	ug/kg	8,000	21	21	-	0.970	1.90	0	0.970	1.90	0
Soil	Pesticides	Total	BHC (gamma) Lindane	0-3 ft	ug/kg	8,000	23	23	-	0.970	1.90	0	0.970	1.90	0
Soil	Pesticides	Total	Chlordane (alpha)	0-1 ft	ug/kg	9,000	20	19	-	0.800	19.0	0	0.800	19.0	0
Soil	Pesticides	Total	Chlordane (alpha)	0-3 ft	ug/kg	9,000	20	19	-	0.800	19.0	0	0.800	19.0	0
Soil	Pesticides	Total	Chlordane (gamma)	0-1 ft	ug/kg	9,000	20	20	-	0.700	14.0	0	0.700	14.0	0
Soil	Pesticides	Total	Chlordane (gamma)	0-3 ft	ug/kg	9,000	20	20	-	0.700	14.0	0	0.700	14.0	0
Soil	Pesticides	Total	Dieldrin	0-1 ft	ug/kg	4.9	21	20	-	1.90	8.00	1	1.90	8.00	1
Soil	Pesticides	Total	Dieldrin	0-3 ft	ug/kg	4.9	23	22	-	1.90	8.00	1	1.90	8.00	1
Soil	Pesticides	Total	Endosulfan I	0-1 ft	ug/kg	20,000	21	21	-	0.970	3.50	0	0.970	3.50	0
Soil	Pesticides	Total	Endosulfan I	0-3 ft	ug/kg	20,000	23	23	-	0.970	3.50	0	0.970	3.50	0
Soil	Pesticides	Total	Endosulfan II	0-1 ft	ug/kg	20,000	21	20	-	1.90	4.90	0	1.90	4.90	0
Soil	Pesticides	Total	Endosulfan II	0-3 ft	ug/kg	20,000	23	22	-	1.90	4.90	0	1.90	4.90	0
Soil	Pesticides	Total	Endosulfan Sulfate	0-1 ft	ug/kg	20,000	21	20	-	1.00	8.00	0	1.00	8.00	0
Soil	Pesticides	Total	Endosulfan Sulfate	0-3 ft	ug/kg	20,000	23	22	-	1.00	8.00	0	1.00	8.00	0
Soil	Pesticides	Total	Endrin Aldehyde	0-1 ft	ug/kg	4.9	21	21	-	1.90	13.0	6	1.90	13.0	6
Soil	Pesticides	Total	Endrin Aldehyde	0-3 ft	ug/kg	4.9	23	23	-	1.90	13.0	6	1.90	13.0	6
Soil	Pesticides	Total	Endrin Ketone	0-1 ft	ug/kg	4.9	20	20	-	1.90	17.0	2	1.90	17.0	2
Soil	Pesticides	Total	Endrin Ketone	0-3 ft	ug/kg	4.9	22	22	-	1.90	17.0	2	1.90	17.0	2
Soil	Pesticides	Total	Endrin	0-1 ft	ug/kg	4.9	21	21	-	1.90	10.0	1	1.90	10.0	1
Soil	Pesticides	Total	Endrin	0-3 ft	ug/kg	4.9	23	23	-	1.90	10.0	1	1.90	10.0	1
Soil	Pesticides	Total	Heptachlor Epoxide	0-1 ft	ug/kg	15,000	21	20	-	0.970	7.10	0	0.970	7.10	0
Soil	Pesticides	Total	Heptachlor Epoxide	0-3 ft	ug/kg	15,000	23	22	-	0.970	7.10	0	0.970	7.10	0
Soil	Pesticides	Total	Heptachlor	0-1 ft	ug/kg	15,000	21	20	-	0.970	1.90	0	0.970	1.90	0
Soil	Pesticides	Total	Heptachlor	0-3 ft	ug/kg	15,000	23	21	-	0.970	1.90	0	0.970	1.90	0
Soil	Pesticides	Total	Methoxychlor	0-1 ft	ug/kg	500,000	21	21	-	4.00	19.0	0	4.00	19.0	0
Soil	Pesticides	Total	Methoxychlor	0-3 ft	ug/kg	500,000	23	23	-	4.00	19.0	0	4.00	19.0	0
Soil	Pesticides	Total	Toxaphene	0-1 ft	ug/kg	1,000,000	21	21	-	34.0	190	0	34.0	190	0
Soil	Pesticides	Total	Toxaphene	0-3 ft	ug/kg	1,000,000	23	23	-	34.0	190	0	34.0	190	0
Soil	PCB Aroclors	Total	Aroclor 1016	0-1 ft	ug/kg	371	27	27	-	1.25	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1016	0-3 ft	ug/kg	371	29	29	-	1.14	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1221	0-1 ft	ug/kg	371	27	27	-	3.80	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1221	0-3 ft	ug/kg	371	29	29	-	3.80	50.0	0	3.80	50.0	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	PCB Aroclors	Total	Aroclor 1232	0-1 ft	ug/kg	371	27	27	-	3.80	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1232	0-3 ft	ug/kg	371	29	29	-	3.80	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1242	0-1 ft	ug/kg	371	27	27	-	2.28	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1242	0-3 ft	ug/kg	371	29	29	-	2.09	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1248	0-1 ft	ug/kg	371	27	25	-	3.80	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1248	0-3 ft	ug/kg	371	29	27	-	3.80	50.0	0	3.80	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1254	0-1 ft	ug/kg	371	27	18	-	1.77	50.0	0	4.00	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1254	0-3 ft	ug/kg	371	29	18	-	1.77	50.0	0	4.00	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1260	0-1 ft	ug/kg	371	27	5	-	35.0	50.0	0	35.0	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1260	0-3 ft	ug/kg	371	29	5	-	35.0	50.0	0	35.0	50.0	0
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	ug/kg	371	27	5	-	105	150	0	105	150	0
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-3 ft	ug/kg	371	29	5	-	105	150	0	105	150	0
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	mg/kg	NV	18	1	-	25.0	25.0	-	25.0	25.0	-
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-3 ft	mg/kg	NV	20	1	-	25.0	25.0	-	25.0	25.0	-
Soil	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	mg/kg	NV	18	1	-	100	100	-	100	100	-
Soil	NWTPH-Dx	Total	Residual Range Organics	0-3 ft	mg/kg	NV	20	1	-	100	100	-	100	100	-
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	mg/kg	NV	13	10	-	4.78	20.0	-	4.78	20.0	-
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-3 ft	mg/kg	NV	15	11	1	4.31	20.0	-	4.31	20.0	-
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	ug/kg	20,000	26	26	-	13.0	190	0	20.0	1,680	0
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	ug/kg	20,000	28	28	-	11.8	190	0	20.0	1,680	0
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-1 ft	ug/kg	2,260	26	26	-	16.1	190	0	20.0	1,680	0
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-3 ft	ug/kg	2,260	28	28	-	14.6	190	0	20.0	1,680	0
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-1 ft	ug/kg	2,260	26	26	-	20.0	236	0	20.0	1,680	0
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-3 ft	ug/kg	2,260	28	28	-	19.9	236	0	20.0	1,680	0
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-1 ft	ug/kg	20,000	26	26	-	20.0	269	0	20.0	1,680	0
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-3 ft	ug/kg	20,000	28	28	-	20.0	269	0	20.0	1,680	0
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-1 ft	ug/kg	4,000	27	27	-	28.1	930	0	49.8	1,680	0
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-3 ft	ug/kg	4,000	29	29	-	19.5	930	0	49.8	1,680	0
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-1 ft	ug/kg	10,000	27	27	-	20.8	300	0	49.8	1,680	0
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-3 ft	ug/kg	10,000	29	29	-	18.9	300	0	49.8	1,680	0
Soil	SVOCs	Total	2,4-Dichlorophenol	0-1 ft	ug/kg	20,000	27	27	-	17.2	300	0	49.8	1,680	0
Soil	SVOCs	Total	2,4-Dichlorophenol	0-3 ft	ug/kg	20,000	29	29	-	15.6	300	0	49.8	1,680	0
Soil	SVOCs	Total	2,4-Dimethylphenol	0-1 ft	ug/kg	20,000	27	27	-	17.2	190	0	20.0	1,680	0
Soil	SVOCs	Total	2,4-Dimethylphenol	0-3 ft	ug/kg	20,000	29	29	-	15.6	190	0	20.0	1,680	0
Soil	SVOCs	Total	2,4-Dinitrophenol	0-1 ft	ug/kg	20,000	23	23	-	37.5	930	0	200	4,210	0
Soil	SVOCs	Total	2,4-Dinitrophenol	0-3 ft	ug/kg	20,000	25	25	-	34.1	930	0	200	4,210	0
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-1 ft	ug/kg	NV	26	26	-	20.3	366	-	98.0	1,680	-
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-3 ft	ug/kg	NV	28	28	-	18.5	366	-	98.0	1,680	-
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-1 ft	ug/kg	NV	26	26	-	28.1	303	-	98.0	1,680	-
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-3 ft	ug/kg	NV	28	28	-	25.6	303	-	98.0	1,680	-
Soil	SVOCs	Total	2-Chloronaphthalene	0-1 ft	ug/kg	NV	26	26	-	4.68	190	-	15.6	190	-
Soil	SVOCs	Total	2-Chloronaphthalene	0-3 ft	ug/kg	NV	28	28	-	4.27	190	-	14.2	190	-
Soil	SVOCs	Total	2-Chlorophenol	0-1 ft	ug/kg	60,000	27	27	-	20.0	252	0	20.0	1,680	0
Soil	SVOCs	Total	2-Chlorophenol	0-3 ft	ug/kg	60,000	29	29	-	20.0	252	0	20.0	1,680	0
Soil	SVOCs	Total	2-Methylphenol	0-1 ft	ug/kg	50,000	27	27	-	18.7	202	0	20.0	1,680	0
Soil	SVOCs	Total	2-Methylphenol	0-3 ft	ug/kg	50,000	29	29	-	17.1	202	0	20.0	1,680	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(4 of 22)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	SVOCs	Total	2-Nitroaniline	0-1 ft	ug/kg	NV	26	26	-	20.3	930	-	98.0	1,680	-
Soil	SVOCs	Total	2-Nitroaniline	0-3 ft	ug/kg	NV	28	28	-	18.5	930	-	98.0	1,680	-
Soil	SVOCs	Total	2-Nitrophenol	0-1 ft	ug/kg	NV	27	27	-	21.9	300	-	49.8	1,680	-
Soil	SVOCs	Total	2-Nitrophenol	0-3 ft	ug/kg	NV	29	29	-	19.9	300	-	49.8	1,680	-
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-1 ft	ug/kg	NV	26	26	-	17.2	2,490	-	98.0	2,490	-
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-3 ft	ug/kg	NV	28	28	-	15.6	2,490	-	98.0	2,490	-
Soil	SVOCs	Total	3-Nitroaniline	0-1 ft	ug/kg	70,000	26	26	-	26.5	930	0	98.0	1,680	0
Soil	SVOCs	Total	3-Nitroaniline	0-3 ft	ug/kg	70,000	28	28	-	24.2	930	0	98.0	1,680	0
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-1 ft	ug/kg	NV	23	23	-	57.8	930	-	200	4,210	-
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-3 ft	ug/kg	NV	25	25	-	52.6	930	-	200	4,210	-
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-1 ft	ug/kg	NV	26	26	-	20.0	224	-	20.0	1,680	-
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-3 ft	ug/kg	NV	28	28	-	18.9	224	-	20.0	1,680	-
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-1 ft	ug/kg	NV	27	27	-	17.2	300	-	49.8	1,680	-
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-3 ft	ug/kg	NV	29	29	-	15.6	300	-	49.8	1,680	-
Soil	SVOCs	Total	4-Chloroaniline	0-1 ft	ug/kg	40,000	26	26	-	14.5	300	0	98.0	1,680	0
Soil	SVOCs	Total	4-Chloroaniline	0-3 ft	ug/kg	40,000	28	28	-	13.2	300	0	98.0	1,680	0
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-1 ft	ug/kg	NV	26	26	-	20.0	283	-	20.0	1,680	-
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-3 ft	ug/kg	NV	28	28	-	20.0	283	-	20.0	1,680	-
Soil	SVOCs	Total	4-Nitroaniline	0-1 ft	ug/kg	40,000	26	26	-	26.5	930	0	98.0	1,680	0
Soil	SVOCs	Total	4-Nitroaniline	0-3 ft	ug/kg	40,000	28	28	-	24.2	930	0	98.0	1,680	0
Soil	SVOCs	Total	4-Nitrophenol	0-1 ft	ug/kg	7,000	27	27	-	29.7	930	0	98.0	4,210	0
Soil	SVOCs	Total	4-Nitrophenol	0-3 ft	ug/kg	7,000	29	29	-	27.0	930	0	98.0	4,210	0
Soil	SVOCs	Total	Aniline	0-1 ft	ug/kg	200,000	17	17	-	42.2	454	0	49.8	1,680	0
Soil	SVOCs	Total	Aniline	0-3 ft	ug/kg	200,000	19	19	-	38.4	454	0	49.8	1,680	0
Soil	SVOCs	Total	Benzidine	0-1 ft	ug/kg	NV	16	16	-	29.5	1,800	-	390	4,210	-
Soil	SVOCs	Total	Benzidine	0-3 ft	ug/kg	NV	18	18	-	26.9	1,800	-	355	4,210	-
Soil	SVOCs	Total	Benzoic Acid	0-1 ft	ug/kg	200,000	23	16	2	200	930	0	200	4,210	0
Soil	SVOCs	Total	Benzoic Acid	0-3 ft	ug/kg	200,000	25	16	4	200	930	0	200	4,210	0
Soil	SVOCs	Total	Benzyl Alcohol	0-1 ft	ug/kg	2,260	27	26	1	20.0	353	0	20.0	1,680	0
Soil	SVOCs	Total	Benzyl Alcohol	0-3 ft	ug/kg	2,260	29	28	1	20.0	353	0	20.0	1,680	0
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-1 ft	ug/kg	730,000	26	26	-	18.7	202	0	20.0	1,680	0
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-3 ft	ug/kg	730,000	28	28	-	17.1	202	0	20.0	1,680	0
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-1 ft	ug/kg	NV	26	26	-	20.0	321	-	20.0	1,680	-
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-3 ft	ug/kg	NV	28	28	-	20.0	321	-	20.0	1,680	-
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-1 ft	ug/kg	NV	26	26	-	20.0	438	-	20.0	1,680	-
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-3 ft	ug/kg	NV	28	28	-	20.0	438	-	20.0	1,680	-
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	ug/kg	4,500	27	3	-	50.0	690	0	50.0	4,210	0
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-3 ft	ug/kg	4,500	29	3	-	50.0	690	0	50.0	4,210	0
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	ug/kg	450	26	23	2	20.0	320	0	20.0	1,680	2
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-3 ft	ug/kg	450	28	25	2	20.0	320	0	20.0	1,680	2
Soil	SVOCs	Total	Carbazole	0-1 ft	ug/kg	2,260	27	8	3	20.0	180	0	20.0	180	0
Soil	SVOCs	Total	Carbazole	0-3 ft	ug/kg	2,260	29	8	3	20.0	180	0	20.0	180	0
Soil	SVOCs	Total	Dibenzofuran	0-1 ft	ug/kg	2	27	16	5	20.0	195	16	20.0	1,680	21
Soil	SVOCs	Total	Dibenzofuran	0-3 ft	ug/kg	2	29	16	6	20.0	195	16	20.0	1,680	22
Soil	SVOCs	Total	Diethyl Phthalate	0-1 ft	ug/kg	100,000	26	23	1	20.0	286	0	20.0	1,680	0
Soil	SVOCs	Total	Diethyl Phthalate	0-3 ft	ug/kg	100,000	28	23	3	20.0	286	0	20.0	1,680	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	SVOCs	Total	Dimethyl Phthalate	0-1 ft	ug/kg	200,000	26	26	-	17.2	190	0	20.0	1,680	0
Soil	SVOCs	Total	Dimethyl Phthalate	0-3 ft	ug/kg	200,000	28	28	-	15.6	190	0	20.0	1,680	0
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	ug/kg	450	26	22	1	20.0	1,460	2	20.0	8,420	5
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-3 ft	ug/kg	450	28	24	1	20.0	1,460	2	20.0	8,420	7
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	ug/kg	450	26	26	-	20.0	730	1	20.0	1,680	3
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-3 ft	ug/kg	450	28	28	-	20.0	730	1	20.0	1,680	3
Soil	SVOCs	Total	Hexachlorobenzene	0-1 ft	ug/kg	1,000,000	26	26	-	17.2	190	0	20.0	1,680	0
Soil	SVOCs	Total	Hexachlorobenzene	0-3 ft	ug/kg	1,000,000	28	28	-	15.6	190	0	20.0	1,680	0
Soil	SVOCs	Total	Hexachlorobutadiene	0-1 ft	ug/kg	NV	26	26	-	14.1	190	-	20.0	1,680	-
Soil	SVOCs	Total	Hexachlorobutadiene	0-3 ft	ug/kg	NV	28	28	-	12.8	190	-	20.0	1,680	-
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-1 ft	ug/kg	10,000	26	26	-	22.0	300	0	98.0	1,680	0
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-3 ft	ug/kg	10,000	28	28	-	20.0	300	0	98.0	1,680	0
Soil	SVOCs	Total	Hexachloroethane	0-1 ft	ug/kg	NV	26	26	-	20.0	320	-	20.0	1,680	-
Soil	SVOCs	Total	Hexachloroethane	0-3 ft	ug/kg	NV	28	28	-	20.0	320	-	20.0	1,680	-
Soil	SVOCs	Total	Isophorone	0-1 ft	ug/kg	NV	26	26	-	20.0	236	-	20.0	1,680	-
Soil	SVOCs	Total	Isophorone	0-3 ft	ug/kg	NV	28	28	-	19.9	236	-	20.0	1,680	-
Soil	SVOCs	Total	Nitrobenzene	0-1 ft	ug/kg	8,000	26	26	-	20.0	231	0	20.0	1,680	0
Soil	SVOCs	Total	Nitrobenzene	0-3 ft	ug/kg	8,000	28	28	-	19.5	231	0	20.0	1,680	0
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-1 ft	ug/kg	NV	22	22	-	17.2	300	-	98.0	4,210	-
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-3 ft	ug/kg	NV	24	24	-	15.6	300	-	98.0	4,210	-
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-1 ft	ug/kg	NV	26	26	-	17.2	300	-	49.8	1,680	-
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-3 ft	ug/kg	NV	28	28	-	15.6	300	-	49.8	1,680	-
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-1 ft	ug/kg	20,000	23	23	-	12.5	190	0	20.0	1,680	0
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-3 ft	ug/kg	20,000	25	25	-	11.4	190	0	20.0	1,680	0
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	ug/kg	50,000	27	26	1	20.0	249	0	20.0	1,680	0
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-3 ft	ug/kg	50,000	29	28	1	20.0	249	0	20.0	1,680	0
Soil	SVOCs	Total	Pentachlorophenol	0-1 ft	ug/kg	2,100	27	25	-	32.8	900	0	98.0	1,680	0
Soil	SVOCs	Total	Pentachlorophenol	0-3 ft	ug/kg	2,100	29	27	-	29.9	900	0	98.0	1,680	0
Soil	SVOCs	Total	Phenol	0-1 ft	ug/kg	30,000	27	27	-	20.0	337	0	20.0	1,680	0
Soil	SVOCs	Total	Phenol	0-3 ft	ug/kg	30,000	29	29	-	20.0	337	0	20.0	1,680	0
Soil	SVOCs	Total	2-Methylnaphthalene	0-1 ft	ug/kg	NV [(1)]	27	19	1	2.45	190	0	15.7	190	0
Soil	SVOCs	Total	2-Methylnaphthalene	0-3 ft	ug/kg	NV [(1)]	29	20	1	2.22	190	0	14.2	190	0
Soil	SVOCs	Total	Acenaphthene	0-1 ft	ug/kg	NV [(1)]	27	8	2	20.0	180	0	20.0	180	0
Soil	SVOCs	Total	Acenaphthene	0-3 ft	ug/kg	NV [(1)]	33	8	2	20.0	180	0	20.0	180	0
Soil	SVOCs	Total	Acenaphthylene	0-1 ft	ug/kg	NV [(1)]	27	20	-	20.0	190	0	20.0	190	0
Soil	SVOCs	Total	Acenaphthylene	0-3 ft	ug/kg	NV [(1)]	33	20	-	20.0	190	0	20.0	190	0
Soil	SVOCs	Total	Anthracene	0-1 ft	ug/kg	NV [(1)]	27	4	1	49.8	180	0	20.0	180	0
Soil	SVOCs	Total	Anthracene	0-3 ft	ug/kg	NV [(1)]	33	4	1	49.8	180	0	20.0	180	0
Soil	SVOCs	Total	Fluorene	0-1 ft	ug/kg	NV [(1)]	27	11	3	20.0	180	0	20.0	180	0
Soil	SVOCs	Total	Fluorene	0-3 ft	ug/kg	NV [(1)]	33	11	3	20.0	180	0	20.0	180	0
Soil	SVOCs	Total	Naphthalene	0-1 ft	ug/kg	NV [(1)]	27	16	-	20.0	190	0	20.0	190	0
Soil	SVOCs	Total	Naphthalene	0-3 ft	ug/kg	NV [(1)]	33	16	-	20.0	190	0	20.0	190	0
Soil	SVOCs	Total	Phenanthrene	0-1 ft	ug/kg	NV [(1)]	27	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Phenanthrene	0-3 ft	ug/kg	NV [(1)]	33	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	29,000	27	1	-	299	299	0	299	299	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	ug/kg	29,000	33	1	-	299	299	0	299	299	0
Soil	SVOCs	Total	Benzo(a)anthracene	0-1 ft	ug/kg	NV (2)	27	2	-	49.8	92.9	0	49.8	305	0
Soil	SVOCs	Total	Benzo(a)anthracene	0-3 ft	ug/kg	NV (2)	33	2	-	49.8	92.9	0	49.8	305	0
Soil	SVOCs	Total	Benzo(a)pyrene	0-1 ft	ug/kg	NV (2)	27	2	-	35.5	49.8	0	49.8	152	0
Soil	SVOCs	Total	Benzo(a)pyrene	0-3 ft	ug/kg	NV (2)	33	2	-	35.5	49.8	0	49.8	152	0
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	ug/kg	NV (2)	24	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-3 ft	ug/kg	NV (2)	28	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	ug/kg	NV (2)	27	3	-	25.1	49.8	0	49.8	168	0
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-3 ft	ug/kg	NV (2)	33	3	-	25.1	49.8	0	49.8	168	0
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	ug/kg	NV (2)	24	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-3 ft	ug/kg	NV (2)	28	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Chrysene	0-1 ft	ug/kg	NV (2)	27	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Chrysene	0-3 ft	ug/kg	NV (2)	33	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	ug/kg	NV (2)	27	5	1	35.5	1,800	1	20.0	1,800	1
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-3 ft	ug/kg	NV (2)	33	5	1	35.5	1,800	1	20.0	1,800	1
Soil	SVOCs	Total	Fluoranthene	0-1 ft	ug/kg	NV (2)	27	2	-	49.8	71.1	0	49.8	152	0
Soil	SVOCs	Total	Fluoranthene	0-3 ft	ug/kg	NV (2)	33	2	-	49.8	71.1	0	49.8	152	0
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	ug/kg	NV (2)	27	3	-	35.5	49.8	0	49.8	168	0
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-3 ft	ug/kg	NV (2)	33	3	-	35.5	49.8	0	49.8	168	0
Soil	SVOCs	Total	Pyrene	0-1 ft	ug/kg	NV (2)	27	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Pyrene	0-3 ft	ug/kg	NV (2)	33	1	-	49.8	49.8	0	49.8	49.8	0
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	1,100	27	1	-	498	498	0	498	498	0
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	ug/kg	1,100	33	1	-	498	498	0	498	498	0
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	ug/kg	55,550,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-3 ft	ug/kg	55,550,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	1,1,2-Trichloroethane	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	1,1,2-Trichloroethane	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	1,1-Dichloroethane	0-1 ft	ug/kg	70,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	1,1-Dichloroethane	0-3 ft	ug/kg	70,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,1-Dichloroethene	0-1 ft	ug/kg	3,750,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	1,1-Dichloroethene	0-3 ft	ug/kg	3,750,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,1-Dichloropropene	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	1,1-Dichloropropene	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-1 ft	ug/kg	20,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-3 ft	ug/kg	20,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,2,3-Trichloropropane	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	1,2,3-Trichloropropane	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	ug/kg	20,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	ug/kg	20,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	ug/kg	200,000	18	15	-	0.218	100	0	0.437	100	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-3 ft	ug/kg	200,000	20	17	-	0.212	100	0	0.424	100	0
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	1,2-Dichlorobenzene	0-1 ft	ug/kg	2,260	18	18	-	0.218	2,300	1	0.437	4,600	1
Soil	VOCs	Total	1,2-Dichlorobenzene	0-3 ft	ug/kg	2,260	20	20	-	0.212	2,300	1	0.424	4,600	1
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-1 ft	ug/kg	70,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-3 ft	ug/kg	70,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,2-Dichloropropane	0-1 ft	ug/kg	700,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	1,2-Dichloropropane	0-3 ft	ug/kg	700,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	ug/kg	200,000	18	15	2	0.218	100	0	0.437	509	0
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-3 ft	ug/kg	200,000	20	17	2	0.212	100	0	0.424	509	0
Soil	VOCs	Total	1,3-Dichlorobenzene	0-1 ft	ug/kg	2,260	18	18	-	0.218	2,300	1	0.437	4,600	1
Soil	VOCs	Total	1,3-Dichlorobenzene	0-3 ft	ug/kg	2,260	20	20	-	0.212	2,300	1	0.424	4,600	1
Soil	VOCs	Total	1,3-Dichloropropane	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	1,3-Dichloropropane	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	ug/kg	20,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	1,4-Dichlorobenzene	0-3 ft	ug/kg	20,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	2,2-Dichloropropane	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	2,2-Dichloropropane	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	2-Butanone (MEK)	0-1 ft	ug/kg	#########	18	18	-	1.09	11,500	0	2.18	23,000	0
Soil	VOCs	Total	2-Butanone (MEK)	0-3 ft	ug/kg	#########	20	20	-	1.06	11,500	0	2.12	23,000	0
Soil	VOCs	Total	2-Chlorotoluene	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	2-Chlorotoluene	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	2-Hexanone	0-1 ft	ug/kg	1,250,000	18	18	-	1.09	11,500	0	2.18	23,000	0
Soil	VOCs	Total	2-Hexanone	0-3 ft	ug/kg	1,250,000	20	20	-	1.06	11,500	0	2.12	23,000	0
Soil	VOCs	Total	4-Chlorotoluene	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	4-Chlorotoluene	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	4-Isopropyltoluene	0-1 ft	ug/kg	200,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	4-Isopropyltoluene	0-3 ft	ug/kg	200,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	ug/kg	1,250,000	18	18	-	1.09	11,500	0	2.18	23,000	0
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-3 ft	ug/kg	1,250,000	20	20	-	1.06	11,500	0	2.12	23,000	0
Soil	VOCs	Total	Acetone	0-1 ft	ug/kg	1,250,000	18	18	-	1.09	11,500	0	2.18	23,000	0
Soil	VOCs	Total	Acetone	0-3 ft	ug/kg	1,250,000	20	20	-	1.06	11,500	0	2.12	23,000	0
Soil	VOCs	Total	Benzene	0-1 ft	ug/kg	3,300,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Benzene	0-3 ft	ug/kg	3,300,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Bromobenzene	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	Bromobenzene	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	Bromochloromethane	0-1 ft	ug/kg	730,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Bromochloromethane	0-3 ft	ug/kg	730,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Bromodichloromethane	0-1 ft	ug/kg	730,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Bromodichloromethane	0-3 ft	ug/kg	730,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Bromoform	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	Bromoform	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	Bromomethane	0-1 ft	ug/kg	730,000	18	18	-	0.218	2,300	0	0.437	4,600	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	VOCs	Total	Bromomethane	0-3 ft	ug/kg	730,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Carbon Disulfide	0-1 ft	ug/kg	1,000,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Carbon Disulfide	0-3 ft	ug/kg	1,000,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Carbon Tetrachloride	0-1 ft	ug/kg	1,000,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Carbon Tetrachloride	0-3 ft	ug/kg	1,000,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Chlorobenzene	0-1 ft	ug/kg	40,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Chlorobenzene	0-3 ft	ug/kg	40,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Chloroethane	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	Chloroethane	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	Chloroform	0-1 ft	ug/kg	1,875,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Chloroform	0-3 ft	ug/kg	1,875,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Chloromethane	0-1 ft	ug/kg	730,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Chloromethane	0-3 ft	ug/kg	730,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	ug/kg	2,500,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-3 ft	ug/kg	2,500,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	Dibromochloromethane	0-1 ft	ug/kg	730,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Dibromochloromethane	0-3 ft	ug/kg	730,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Dibromomethane	0-1 ft	ug/kg	730,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Dibromomethane	0-3 ft	ug/kg	730,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Dichlorodifluoromethane	0-1 ft	ug/kg	730,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Dichlorodifluoromethane	0-3 ft	ug/kg	730,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	ug/kg	730,000	18	17	-	0.218	2,300	0	0.674	4,600	0
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-3 ft	ug/kg	730,000	20	19	-	0.212	2,300	0	0.674	4,600	0
Soil	VOCs	Total	Ethylbenzene	0-1 ft	ug/kg	2,260	18	17	1	0.218	255	0	0.437	4,600	1
Soil	VOCs	Total	Ethylbenzene	0-3 ft	ug/kg	2,260	20	19	1	0.212	255	0	0.424	4,600	1
Soil	VOCs	Total	Hexachlorobutadiene	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	Hexachlorobutadiene	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	Isopropylbenzene	0-1 ft	ug/kg	2,260	18	18	-	0.218	2,300	1	0.437	4,600	1
Soil	VOCs	Total	Isopropylbenzene	0-3 ft	ug/kg	2,260	20	20	-	0.212	2,300	1	0.424	4,600	1
Soil	VOCs	Total	m,p-Xylenes	0-1 ft	ug/kg	120,000	18	17	-	0.437	509	0	0.873	1,020	0
Soil	VOCs	Total	m,p-Xylenes	0-3 ft	ug/kg	120,000	20	19	-	0.424	509	0	0.849	1,020	0
Soil	VOCs	Total	Naphthalene	0-1 ft	ug/kg	NV [(1)]	18	15	-	0.218	100	0	0.437	100	0
Soil	VOCs	Total	Naphthalene	0-3 ft	ug/kg	NV [(1)]	20	17	-	0.212	100	0	0.424	100	0
Soil	VOCs	Total	n-Butylbenzene	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	n-Butylbenzene	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	n-Propylbenzene	0-1 ft	ug/kg	2,260	18	18	-	0.218	2,300	1	0.437	4,600	1
Soil	VOCs	Total	n-Propylbenzene	0-3 ft	ug/kg	2,260	20	20	-	0.212	2,300	1	0.424	4,600	1
Soil	VOCs	Total	o-Xylene	0-1 ft	ug/kg	1,000	18	18	-	0.0590	255	0	0.437	509	0
Soil	VOCs	Total	o-Xylene	0-3 ft	ug/kg	1,000	24	24	-	0.0590	255	0	0.424	509	0
Soil	VOCs	Total	sec-Butylbenzene	0-1 ft	ug/kg	2,260	18	18	-	0.218	2,300	1	0.437	4,600	1
Soil	VOCs	Total	sec-Butylbenzene	0-3 ft	ug/kg	2,260	20	20	-	0.212	2,300	1	0.424	4,600	1
Soil	VOCs	Total	Styrene	0-1 ft	ug/kg	300,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Styrene	0-3 ft	ug/kg	300,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	tert-Butylbenzene	0-1 ft	ug/kg	2,260	18	18	-	0.218	2,300	1	0.437	4,600	1

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	VOCs	Total	tert-Butylbenzene	0-3 ft	ug/kg	2,260	20	20	-	0.212	2,300	1	0.424	4,600	1
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	ug/kg	10,000	18	10	2	2.10	255	0	2.10	509	0
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-3 ft	ug/kg	10,000	24	10	3	2.10	255	0	2.10	509	0
Soil	VOCs	Total	Toluene	0-1 ft	ug/kg	200,000	18	13	4	0.218	255	0	0.437	509	0
Soil	VOCs	Total	Toluene	0-3 ft	ug/kg	200,000	24	14	9	0.212	255	0	0.424	509	0
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-1 ft	ug/kg	2,500,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-3 ft	ug/kg	2,500,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-1 ft	ug/kg	NV	18	18	-	0.218	2,300	-	0.437	4,600	-
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-3 ft	ug/kg	NV	20	20	-	0.212	2,300	-	0.424	4,600	-
Soil	VOCs	Total	Trichloroethene (TCE)	0-1 ft	ug/kg	40,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Trichloroethene (TCE)	0-3 ft	ug/kg	40,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Trichlorofluoromethane	0-1 ft	ug/kg	730,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Trichlorofluoromethane	0-3 ft	ug/kg	730,000	20	20	-	0.212	2,300	0	0.424	4,600	0
Soil	VOCs	Total	Vinyl Acetate	0-1 ft	ug/kg	NV	17	17	-	1.09	11,500	-	2.18	23,000	-
Soil	VOCs	Total	Vinyl Acetate	0-3 ft	ug/kg	NV	19	19	-	1.06	11,500	-	2.12	23,000	-
Soil	VOCs	Total	Vinyl Chloride	0-1 ft	ug/kg	20,000	18	18	-	0.218	2,300	0	0.437	4,600	0
Soil	VOCs	Total	Vinyl Chloride	0-3 ft	ug/kg	20,000	20	20	-	0.212	2,300	0	0.424	4,600	0
MW Soil Subset	Metals	Total	Antimony	0-1 ft	mg/kg	0.27	9	9	-	0.200	0.300	4	0.200	0.300	4
MW Soil Subset	Metals	Total	Selenium	0-1 ft	mg/kg	0.52	10	8	-	0.200	0.300	0	0.200	0.300	0
MW Soil Subset	Metals	Total	Silver	0-1 ft	mg/kg	4.2	10	5	-	0.200	0.300	0	0.200	0.300	0
MW Soil Subset	Metals	Total	Thallium	0-1 ft	mg/kg	1	10	9	-	0.200	0.300	0	0.200	0.300	0
MW Soil Subset	Herbicides	Total	2,4,5-T	0-1 ft	ug/kg	21	1	1	-	50.0	50.0	1	50.0	50.0	1
MW Soil Subset	Herbicides	Total	2,4,5-TP (Silvex)	0-1 ft	ug/kg	21	1	1	-	50.0	50.0	1	50.0	50.0	1
MW Soil Subset	Herbicides	Total	2,4-D	0-1 ft	ug/kg	21	1	1	-	50.0	50.0	1	50.0	50.0	1
MW Soil Subset	Herbicides	Total	2,4-DB	0-1 ft	ug/kg	21	1	1	-	50.0	50.0	1	50.0	50.0	1
MW Soil Subset	Herbicides	Total	Dalapon	0-1 ft	ug/kg	NV	1	1	-	50.0	50.0	-	50.0	50.0	-
MW Soil Subset	Herbicides	Total	Dicamba	0-1 ft	ug/kg	NV	1	1	-	50.0	50.0	-	50.0	50.0	-
MW Soil Subset	Herbicides	Total	Dichloroprop	0-1 ft	ug/kg	21	1	1	-	50.0	50.0	1	50.0	50.0	1
MW Soil Subset	Herbicides	Total	Dinoseb	0-1 ft	ug/kg	NV	1	1	-	50.0	50.0	-	50.0	50.0	-
MW Soil Subset	Herbicides	Total	MCPA	0-1 ft	ug/kg	21	1	1	-	25,000	25,000	1	25,000	25,000	1
MW Soil Subset	Herbicides	Total	MCPP	0-1 ft	ug/kg	21	1	1	-	25,000	25,000	1	25,000	25,000	1
MW Soil Subset	Pesticides	Total	4,4'-DDD	0-1 ft	ug/kg	21	10	10	-	1.00	3.80	0	1.00	3.80	0
MW Soil Subset	Pesticides	Total	4,4'-DDE	0-1 ft	ug/kg	21	10	10	-	1.00	3.80	0	1.00	3.80	0
MW Soil Subset	Pesticides	Total	4,4'-DDT	0-1 ft	ug/kg	21	10	3	-	1.00	5.00	0	1.00	5.00	0
MW Soil Subset	Pesticides	Total	Aldrin	0-1 ft	ug/kg	4.9	10	10	-	0.970	1.90	0	0.970	1.90	0
MW Soil Subset	Pesticides	Total	BHC (alpha)	0-1 ft	ug/kg	8,000	10	10	-	0.500	1.90	0	0.500	1.90	0
MW Soil Subset	Pesticides	Total	BHC (beta)	0-1 ft	ug/kg	8,000	10	10	-	0.900	12.0	0	0.900	12.0	0
MW Soil Subset	Pesticides	Total	BHC (delta)	0-1 ft	ug/kg	8,000	10	10	-	0.600	1.90	0	0.600	1.90	0
MW Soil Subset	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	ug/kg	8,000	10	10	-	0.970	1.90	0	0.970	1.90	0
MW Soil Subset	Pesticides	Total	Chlordane (alpha)	0-1 ft	ug/kg	9,000	10	10	-	0.800	5.50	0	0.800	5.50	0
MW Soil Subset	Pesticides	Total	Chlordane (gamma)	0-1 ft	ug/kg	9,000	10	10	-	0.700	14.0	0	0.700	14.0	0
MW Soil Subset	Pesticides	Total	Dieldrin	0-1 ft	ug/kg	4.9	10	9	-	1.90	8.00	1	1.90	8.00	1
MW Soil Subset	Pesticides	Total	Endosulfan I	0-1 ft	ug/kg	20,000	10	10	-	0.970	1.90	0	0.970	1.90	0
MW Soil Subset	Pesticides	Total	Endosulfan II	0-1 ft	ug/kg	20,000	10	10	-	1.90	3.80	0	1.90	3.80	0
MW Soil Subset	Pesticides	Total	Endosulfan Sulfate	0-1 ft	ug/kg	20,000	10	10	-	1.00	8.00	0	1.00	8.00	0
MW Soil Subset	Pesticides	Total	Endrin Aldehyde	0-1 ft	ug/kg	4.9	10	10	-	1.90	10.0	5	1.90	10.0	5

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
MW Soil Subset	Pesticides	Total	Endrin Ketone	0-1 ft	ug/kg	4.9	9	9	-	1.90	17.0	2	1.90	17.0	2
MW Soil Subset	Pesticides	Total	Endrin	0-1 ft	ug/kg	4.9	10	10	-	1.90	10.0	1	1.90	10.0	1
MW Soil Subset	Pesticides	Total	Heptachlor Epoxide	0-1 ft	ug/kg	15,000	10	10	-	0.970	1.90	0	0.970	1.90	0
MW Soil Subset	Pesticides	Total	Heptachlor	0-1 ft	ug/kg	15,000	10	10	-	0.970	1.90	0	0.970	1.90	0
MW Soil Subset	Pesticides	Total	Methoxychlor	0-1 ft	ug/kg	500,000	10	10	-	4.00	19.0	0	4.00	19.0	0
MW Soil Subset	Pesticides	Total	Toxaphene	0-1 ft	ug/kg	1,000,000	10	10	-	50.0	190	0	50.0	190	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1016	0-1 ft	ug/kg	371	10	10	-	3.80	50.0	0	3.80	50.0	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1221	0-1 ft	ug/kg	371	10	10	-	3.80	50.0	0	3.80	50.0	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1232	0-1 ft	ug/kg	371	10	10	-	3.80	50.0	0	3.80	50.0	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1242	0-1 ft	ug/kg	371	10	10	-	3.80	50.0	0	3.80	50.0	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1248	0-1 ft	ug/kg	371	10	10	-	3.80	50.0	0	3.80	50.0	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1254	0-1 ft	ug/kg	371	10	3	-	4.00	50.0	0	4.00	50.0	0
MW Soil Subset	PCB Aroclors	Total	Aroclor 1260	0-1 ft	ug/kg	371	10	1	-	50.0	50.0	0	50.0	50.0	0
MW Soil Subset	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	ug/kg	371	10	1	-	150	150	0	150	150	0
MW Soil Subset	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	mg/kg	NV	1	1	-	25.0	25.0	-	25.0	25.0	-
MW Soil Subset	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	mg/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	mg/kg	NV	1	1	-	20.0	20.0	-	20.0	20.0	-
MW Soil Subset	SVOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	ug/kg	20,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	1,2-Dichlorobenzene	0-1 ft	ug/kg	2,260	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	1,3-Dichlorobenzene	0-1 ft	ug/kg	2,260	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	1,4-Dichlorobenzene	0-1 ft	ug/kg	20,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	2,4,5-Trichlorophenol	0-1 ft	ug/kg	4,000	10	10	-	49.8	300	0	49.8	300	0
MW Soil Subset	SVOCs	Total	2,4,6-Trichlorophenol	0-1 ft	ug/kg	10,000	10	10	-	49.8	300	0	49.8	300	0
MW Soil Subset	SVOCs	Total	2,4-Dichlorophenol	0-1 ft	ug/kg	20,000	10	10	-	49.8	300	0	49.8	300	0
MW Soil Subset	SVOCs	Total	2,4-Dimethylphenol	0-1 ft	ug/kg	20,000	10	10	-	20.0	99.7	0	20.0	99.7	0
MW Soil Subset	SVOCs	Total	2,4-Dinitrophenol	0-1 ft	ug/kg	20,000	10	10	-	200	590	0	200	590	0
MW Soil Subset	SVOCs	Total	2,4-Dinitrotoluene	0-1 ft	ug/kg	NV	10	10	-	98.0	300	-	98.0	300	-
MW Soil Subset	SVOCs	Total	2,6-Dinitrotoluene	0-1 ft	ug/kg	NV	10	10	-	98.0	300	-	98.0	300	-
MW Soil Subset	SVOCs	Total	2-Chloronaphthalene	0-1 ft	ug/kg	NV	10	10	-	20.0	59.0	-	20.0	59.0	-
MW Soil Subset	SVOCs	Total	2-Chlorophenol	0-1 ft	ug/kg	60,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	2-Methylphenol	0-1 ft	ug/kg	50,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	2-Nitroaniline	0-1 ft	ug/kg	NV	10	10	-	98.0	300	-	98.0	300	-
MW Soil Subset	SVOCs	Total	2-Nitrophenol	0-1 ft	ug/kg	NV	10	10	-	49.8	300	-	49.8	300	-
MW Soil Subset	SVOCs	Total	3,3'-Dichlorobenzidine	0-1 ft	ug/kg	NV	10	10	-	98.0	2,490	-	98.0	2,490	-
MW Soil Subset	SVOCs	Total	3-Nitroaniline	0-1 ft	ug/kg	70,000	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-1 ft	ug/kg	NV	10	10	-	200	590	-	200	590	-
MW Soil Subset	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-1 ft	ug/kg	NV	10	10	-	20.0	59.0	-	20.0	59.0	-
MW Soil Subset	SVOCs	Total	4-Chloro-3-methylphenol	0-1 ft	ug/kg	NV	10	10	-	49.8	300	-	49.8	300	-
MW Soil Subset	SVOCs	Total	4-Chloroaniline	0-1 ft	ug/kg	40,000	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-1 ft	ug/kg	NV	10	10	-	20.0	59.0	-	20.0	59.0	-
MW Soil Subset	SVOCs	Total	4-Nitroaniline	0-1 ft	ug/kg	40,000	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	4-Nitrophenol	0-1 ft	ug/kg	7,000	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	Aniline	0-1 ft	ug/kg	200,000	1	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Benzoic Acid	0-1 ft	ug/kg	200,000	10	7	2	200	590	0	200	590	0
MW Soil Subset	SVOCs	Total	Benzyl Alcohol	0-1 ft	ug/kg	2,260	10	9	1	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Bis(2-chloroethoxy)methane	0-1 ft	ug/kg	730,000	10	10	-	20.0	59.0	0	20.0	59.0	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
MW Soil Subset	SVOCs	Total	Bis(2-chloroethyl) Ether	0-1 ft	ug/kg	NV	10	10	-	20.0	59.0	-	20.0	59.0	-
MW Soil Subset	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-1 ft	ug/kg	NV	10	10	-	20.0	59.0	-	20.0	59.0	-
MW Soil Subset	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	ug/kg	4,500	10	1	-	50.0	50.0	0	50.0	50.0	0
MW Soil Subset	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	ug/kg	450	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Carbazole	0-1 ft	ug/kg	2,260	10	2	3	20.0	49.8	0	20.0	49.8	0
MW Soil Subset	SVOCs	Total	Dibenzofuran	0-1 ft	ug/kg	2	10	8	1	20.0	49.8	8	20.0	59.0	9
MW Soil Subset	SVOCs	Total	Diethyl Phthalate	0-1 ft	ug/kg	100,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Dimethyl Phthalate	0-1 ft	ug/kg	200,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	ug/kg	450	10	6	1	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	ug/kg	450	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Hexachlorobenzene	0-1 ft	ug/kg	1,000,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Hexachlorobutadiene	0-1 ft	ug/kg	NV	10	10	-	20.0	59.0	-	20.0	59.0	-
MW Soil Subset	SVOCs	Total	Hexachlorocyclopentadiene	0-1 ft	ug/kg	10,000	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	Hexachloroethane	0-1 ft	ug/kg	NV	10	10	-	20.0	59.0	-	20.0	59.0	-
MW Soil Subset	SVOCs	Total	Isophorone	0-1 ft	ug/kg	NV	10	10	-	20.0	59.0	-	20.0	59.0	-
MW Soil Subset	SVOCs	Total	Nitrobenzene	0-1 ft	ug/kg	8,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	N-Nitrosodimethylamine	0-1 ft	ug/kg	NV	9	9	-	98.0	300	-	98.0	300	-
MW Soil Subset	SVOCs	Total	N-Nitrosodi-n-propylamine	0-1 ft	ug/kg	NV	10	10	-	49.8	300	-	49.8	300	-
MW Soil Subset	SVOCs	Total	N-Nitrosodiphenylamine	0-1 ft	ug/kg	20,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	ug/kg	50,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Pentachlorophenol	0-1 ft	ug/kg	2,100	10	10	-	98.0	300	0	98.0	300	0
MW Soil Subset	SVOCs	Total	Phenol	0-1 ft	ug/kg	30,000	10	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	2-Methylnaphthalene	0-1 ft	ug/kg	NV [1]	10	9	1	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Acenaphthene	0-1 ft	ug/kg	NV [1]	14	3	2	20.0	49.8	0	20.0	49.8	0
MW Soil Subset	SVOCs	Total	Acenaphthylene	0-1 ft	ug/kg	NV [1]	14	10	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Anthracene	0-1 ft	ug/kg	NV [1]	14	1	1	49.8	49.8	0	20.0	49.8	0
MW Soil Subset	SVOCs	Total	Fluorene	0-1 ft	ug/kg	NV [1]	14	4	3	20.0	49.8	0	20.0	49.8	0
MW Soil Subset	SVOCs	Total	Naphthalene	0-1 ft	ug/kg	NV [1]	14	9	-	20.0	59.0	0	20.0	59.0	0
MW Soil Subset	SVOCs	Total	Phenanthrene	0-1 ft	ug/kg	NV [1]	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	29,000	14	1	-	299	299	0	299	299	0
MW Soil Subset	SVOCs	Total	Benzo(a)anthracene	0-1 ft	ug/kg	NV [2]	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Benzo(a)pyrene	0-1 ft	ug/kg	NV [2]	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Benzo(b)fluoranthene	0-1 ft	ug/kg	NV [2]	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	ug/kg	NV [2]	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	ug/kg	NV [2]	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Chrysene	0-1 ft	ug/kg	NV [2]	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	ug/kg	NV [2]	14	1	1	49.8	49.8	0	20.0	49.8	0
MW Soil Subset	SVOCs	Total	Fluoranthene	0-1 ft	ug/kg	NV [2]	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	ug/kg	NV [2]	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Pyrene	0-1 ft	ug/kg	NV [2]	14	1	-	49.8	49.8	0	49.8	49.8	0
MW Soil Subset	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	ug/kg	1,100	14	1	-	498	498	0	498	498	0
MW Soil Subset	VOCs	Total	1,1,1,2-Tetrachloroethane	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	ug/kg	55,550,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,1,2,2-Tetrachloroethane	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
MW Soil Subset	VOCs	Total	1,1,2-Trichloroethane	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	1,1-Dichloroethane	0-1 ft	ug/kg	70,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,1-Dichloroethene	0-1 ft	ug/kg	3,750,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,1-Dichloropropene	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	1,2,3-Trichlorobenzene	0-1 ft	ug/kg	20,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,2,3-Trichloropropane	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	ug/kg	20,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	ug/kg	200,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,2-Dibromo-3-chloropropane	0-1 ft	ug/kg	NV	1	1	-	500	500	-	500	500	-
MW Soil Subset	VOCs	Total	1,2-Dibromoethane (EDB)	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	1,2-Dichlorobenzene	0-1 ft	ug/kg	2,260	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,2-Dichloroethane (EDC)	0-1 ft	ug/kg	70,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,2-Dichloropropane	0-1 ft	ug/kg	700,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	ug/kg	200,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,3-Dichlorobenzene	0-1 ft	ug/kg	2,260	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	1,3-Dichloropropane	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	ug/kg	20,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	2,2-Dichloropropane	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	2-Butanone (MEK)	0-1 ft	ug/kg	#########	1	1	-	1,000	1,000	0	1,000	1,000	0
MW Soil Subset	VOCs	Total	2-Chlorotoluene	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	2-Hexanone	0-1 ft	ug/kg	1,250,000	1	1	-	1,000	1,000	0	1,000	1,000	0
MW Soil Subset	VOCs	Total	4-Chlorotoluene	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	4-Isopropyltoluene	0-1 ft	ug/kg	200,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	ug/kg	1,250,000	1	1	-	1,000	1,000	0	1,000	1,000	0
MW Soil Subset	VOCs	Total	Acetone	0-1 ft	ug/kg	1,250,000	1	1	-	1,000	1,000	0	1,000	1,000	0
MW Soil Subset	VOCs	Total	Benzene	0-1 ft	ug/kg	3,300,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Bromobenzene	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	Bromochloromethane	0-1 ft	ug/kg	730,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Bromodichloromethane	0-1 ft	ug/kg	730,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Bromoform	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	Bromomethane	0-1 ft	ug/kg	730,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Carbon Disulfide	0-1 ft	ug/kg	1,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Carbon Tetrachloride	0-1 ft	ug/kg	1,000,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Chlorobenzene	0-1 ft	ug/kg	40,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Chloroethane	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	Chloroform	0-1 ft	ug/kg	1,875,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Chloromethane	0-1 ft	ug/kg	730,000	1	1	-	500	500	0	500	500	0
MW Soil Subset	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	ug/kg	2,500,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	cis-1,3-Dichloropropene	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	Dibromochloromethane	0-1 ft	ug/kg	730,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Dibromomethane	0-1 ft	ug/kg	730,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Dichlorodifluoromethane	0-1 ft	ug/kg	730,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	ug/kg	730,000	1	1	-	1,000	1,000	0	1,000	1,000	0
MW Soil Subset	VOCs	Total	Ethylbenzene	0-1 ft	ug/kg	2,260	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Hexachlorobutadiene	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	Isopropylbenzene	0-1 ft	ug/kg	2,260	1	1	-	100	100	0	100	100	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
MW Soil Subset	VOCs	Total	m,p-Xylenes	0-1 ft	ug/kg	120,000	1	1	-	200	200	0	200	200	0
MW Soil Subset	VOCs	Total	Naphthalene	0-1 ft	ug/kg	NV (1)	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	n-Butylbenzene	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	n-Propylbenzene	0-1 ft	ug/kg	2,260	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	o-Xylene	0-1 ft	ug/kg	1,000	5	5	-	0.0590	100	0	4.70	100	0
MW Soil Subset	VOCs	Total	sec-Butylbenzene	0-1 ft	ug/kg	2,260	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Styrene	0-1 ft	ug/kg	300,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	tert-Butylbenzene	0-1 ft	ug/kg	2,260	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	ug/kg	10,000	5	1	2	100	100	0	4.70	100	0
MW Soil Subset	VOCs	Total	Toluene	0-1 ft	ug/kg	200,000	5	1	4	100	100	0	4.70	100	0
MW Soil Subset	VOCs	Total	trans-1,2-Dichloroethene	0-1 ft	ug/kg	2,500,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	trans-1,3-Dichloropropene	0-1 ft	ug/kg	NV	1	1	-	100	100	-	100	100	-
MW Soil Subset	VOCs	Total	Trichloroethene (TCE)	0-1 ft	ug/kg	40,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Trichlorofluoromethane	0-1 ft	ug/kg	730,000	1	1	-	100	100	0	100	100	0
MW Soil Subset	VOCs	Total	Vinyl Chloride	0-1 ft	ug/kg	20,000	1	1	-	100	100	0	100	100	0
Groundwater	Metals	Dissolved	Antimony	N/A	ug/L	1,000	3	3	-	50.0	50.0	0	50.0	50.0	0
Groundwater	Metals	Dissolved	Arsenic	N/A	ug/L	150	36	7	3	0.500	5.00	0	0.500	5.00	0
Groundwater	Metals	Dissolved	Beryllium	N/A	ug/L	5.3	3	3	-	5.00	5.00	0	5.00	5.00	0
Groundwater	Metals	Dissolved	Cadmium	N/A	ug/L	0.17	3	3	-	5.00	5.00	3	5.00	5.00	3
Groundwater	Metals	Dissolved	Chromium	N/A	ug/L	49	3	3	-	10.0	10.0	0	10.0	10.0	0
Groundwater	Metals	Dissolved	Copper	N/A	ug/L	5.8	3	3	-	10.0	10.0	3	10.0	10.0	3
Groundwater	Metals	Dissolved	Iron	N/A	ug/L	1,000	36	11	6	4.00	50.0	0	20.0	50.0	0
Groundwater	Metals	Dissolved	Lead	N/A	ug/L	1.44	36	20	7	0.00600	3.00	3	0.0200	3.00	3
Groundwater	Metals	Dissolved	Manganese	N/A	ug/L	120	36	2	2	0.400	0.400	0	0.400	5.00	0
Groundwater	Metals	Dissolved	Mercury	N/A	ug/L	0.77	8	8	-	0.0300	0.200	0	0.200	0.200	0
Groundwater	Metals	Dissolved	Nickel	N/A	ug/L	34	3	2	-	10.0	10.0	0	10.0	10.0	0
Groundwater	Metals	Dissolved	Potassium	N/A	ug/L	53,000	9	0	1	-	-	0	2,000	2,000	0
Groundwater	Metals	Dissolved	Selenium	N/A	ug/L	5	3	3	-	5.00	5.00	0	5.00	5.00	0
Groundwater	Metals	Dissolved	Silver	N/A	ug/L	0.12	3	3	-	10.0	10.0	3	10.0	10.0	3
Groundwater	Metals	Dissolved	Thallium	N/A	ug/L	40	3	3	-	5.00	5.00	0	5.00	5.00	0
Groundwater	Metals	Dissolved	Zinc	N/A	ug/L	77	3	2	-	10.0	10.0	0	10.0	10.0	0
Groundwater	Butyltins	Total	Dibutyltin	N/A	ug/L	0.063	39	28	2	0.00111	0.00810	0	0.00302	0.0500	0
Groundwater	Butyltins	Total	Monobutyltin	N/A	ug/L	0.063	39	32	1	0.00105	0.0290	0	0.00302	0.0870	24
Groundwater	Butyltins	Total	Tetrabutyltin	N/A	ug/L	0.063	8	8	-	0.00110	0.00119	0	0.00300	0.00325	0
Groundwater	Butyltins	Total	Tributyltin	N/A	ug/L	0.063	8	2	-	0.00156	0.00163	0	0.00402	0.00419	0
Groundwater	Herbicides	Total	2,4,5-T	N/A	ug/L	36	21	21	-	0.0566	0.150	0	0.100	0.160	0
Groundwater	Herbicides	Total	2,4,5-TP (Silvex)	N/A	ug/L	NV	21	21	-	0.0227	0.100	-	0.0800	0.100	-
Groundwater	Herbicides	Total	2,4-D	N/A	ug/L	4	21	21	-	0.0296	1.00	0	0.0800	1.00	0
Groundwater	Herbicides	Total	2,4-DB	N/A	ug/L	NV	21	21	-	0.0557	1.00	-	0.160	1.00	-
Groundwater	Herbicides	Total	4-Nitrophenol	N/A	ug/L	150	8	7	-	0.0114	0.0114	0	0.0800	0.0800	0
Groundwater	Herbicides	Total	Dalapon	N/A	ug/L	NV	21	21	-	0.0124	2.00	-	0.0800	2.00	-
Groundwater	Herbicides	Total	Dicamba	N/A	ug/L	10	21	21	-	0.0221	0.100	0	0.0800	0.100	0
Groundwater	Herbicides	Total	Dichloroprop	N/A	ug/L	4	21	20	-	0.0114	1.00	0	0.0800	1.00	0
Groundwater	Herbicides	Total	Dinoseb	N/A	ug/L	0.05	21	21	-	0.0292	0.500	13	0.0800	0.500	21
Groundwater	Herbicides	Total	MCPA	N/A	ug/L	2.6	21	21	-	0.0114	50.0	13	0.0800	50.0	13
Groundwater	Herbicides	Total	MCPP	N/A	ug/L	NV	21	21	-	0.0134	50.0	-	0.0800	50.0	-

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Groundwater	Herbicides	Total	Pentachlorophenol	N/A	ug/L	15	8	7	-	0.0259	0.0259	0	0.0800	0.0800	0
Groundwater	PCB Aroclors	Total	Aroclor 1016	N/A	ug/L	0.014	22	22	-	0.00199	1.00	14	0.00992	1.00	15
Groundwater	PCB Aroclors	Total	Aroclor 1221	N/A	ug/L	0.014	22	22	-	0.00496	1.00	14	0.0198	1.00	22
Groundwater	PCB Aroclors	Total	Aroclor 1232	N/A	ug/L	0.014	22	22	-	0.00236	1.00	14	0.00992	1.00	15
Groundwater	PCB Aroclors	Total	Aroclor 1242	N/A	ug/L	0.014	22	22	-	0.00327	1.00	14	0.00992	1.00	15
Groundwater	PCB Aroclors	Total	Aroclor 1248	N/A	ug/L	0.014	22	22	-	0.00155	1.00	14	0.00992	1.00	15
Groundwater	PCB Aroclors	Total	Aroclor 1254	N/A	ug/L	0.014	22	22	-	0.00199	1.00	14	0.00992	1.00	15
Groundwater	PCB Aroclors	Total	Aroclor 1260	N/A	ug/L	0.014	22	22	-	0.00109	1.00	14	0.00992	1.00	15
Groundwater	Pesticides	Total	4,4'-DDD	N/A	ug/L	0.001	22	22	-	0.000458	0.100	16	0.00195	0.100	22
Groundwater	Pesticides	Total	4,4'-DDE	N/A	ug/L	0.001	22	21	-	0.000380	0.100	16	0.00195	0.100	21
Groundwater	Pesticides	Total	4,4'-DDT	N/A	ug/L	0.001	22	22	-	0.000486	0.100	16	0.00195	0.100	22
Groundwater	Pesticides	Total	Aldrin	N/A	ug/L	0.06	22	22	-	0.000111	0.0500	0	0.000973	0.0500	0
Groundwater	Pesticides	Total	BHC (alpha)	N/A	ug/L	2.2	22	22	-	0.000358	0.0500	0	0.000973	0.0500	0
Groundwater	Pesticides	Total	BHC (beta)	N/A	ug/L	2.2	22	22	-	0.000415	0.0500	0	0.000973	0.0500	0
Groundwater	Pesticides	Total	BHC (delta)	N/A	ug/L	2.2	22	22	-	0.000228	0.0500	0	0.000973	0.0500	0
Groundwater	Pesticides	Total	BHC (gamma) Lindane	N/A	ug/L	0.08	22	22	-	0.000700	0.0500	0	0.000973	0.0500	0
Groundwater	Pesticides	Total	Chlordane (alpha)	N/A	ug/L	0.0043	14	14	-	0.0470	0.0500	14	0.0470	0.0500	14
Groundwater	Pesticides	Total	Chlordane (gamma)	N/A	ug/L	0.0043	14	14	-	0.0470	0.0500	14	0.0470	0.0500	14
Groundwater	Pesticides	Total	Chlordane (technical)	N/A	ug/L	0.0043	8	8	-	0.00312	0.0114	3	0.00973	0.0137	8
Groundwater	Pesticides	Total	Dieldrin	N/A	ug/L	0.056	22	21	1	0.000294	0.100	14	0.00195	0.100	14
Groundwater	Pesticides	Total	Endosulfan I	N/A	ug/L	0.056	22	22	-	0.000485	0.0500	0	0.000973	0.0500	0
Groundwater	Pesticides	Total	Endosulfan II	N/A	ug/L	0.056	22	22	-	0.000368	0.100	14	0.00195	0.100	14
Groundwater	Pesticides	Total	Endosulfan Sulfate	N/A	ug/L	0.051	22	22	-	0.000523	0.100	14	0.00195	0.100	14
Groundwater	Pesticides	Total	Endrin Aldehyde	N/A	ug/L	0.15	22	22	-	0.000947	0.100	0	0.00195	0.100	0
Groundwater	Pesticides	Total	Endrin Ketone	N/A	ug/L	NV	22	22	-	0.000335	0.100	-	0.00195	0.100	-
Groundwater	Pesticides	Total	Endrin	N/A	ug/L	0.036	22	22	-	0.000301	0.100	14	0.00195	0.100	14
Groundwater	Pesticides	Total	Heptachlor Epoxide	N/A	ug/L	0.0038	22	22	-	0.000364	0.0500	14	0.000973	0.0500	14
Groundwater	Pesticides	Total	Heptachlor	N/A	ug/L	0.0038	22	22	-	0.000733	0.0500	14	0.000973	0.0500	14
Groundwater	Pesticides	Total	Methoxychlor	N/A	ug/L	0.03	22	22	-	0.000522	0.500	14	0.00973	0.500	14
Groundwater	Pesticides	Total	Toxaphene	N/A	ug/L	0.002	22	22	-	0.0113	1.00	22	0.0973	1.00	22
Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	NV	55	18	11	12.0	250	-	100	250	-
Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	ug/L	NV	55	28	7	21.0	750	-	100	750	-
Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	NV	57	40	14	13.0	100	-	100	250	-
Groundwater	SVOCs	Total	1,2,4-Trichlorobenzene	N/A	ug/L	110	23	23	-	0.0100	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	1,2-Dichlorobenzene	N/A	ug/L	14	23	23	-	0.0160	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	1,3-Dichlorobenzene	N/A	ug/L	71	23	23	-	0.0170	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	15	54	52	2	0.0150	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2,4,5-Trichlorophenol	N/A	ug/L	18	23	23	-	0.0110	48.0	14	0.0999	48.0	14
Groundwater	SVOCs	Total	2,4,6-Trichlorophenol	N/A	ug/L	970	23	23	-	0.0120	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2,4-Dichlorophenol	N/A	ug/L	3,650	23	23	-	0.0150	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2,4-Dimethylphenol	N/A	ug/L	42	23	23	-	0.0150	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2,4-Dinitrophenol	N/A	ug/L	19	23	23	-	0.0300	48.0	14	0.500	48.0	14
Groundwater	SVOCs	Total	2,4-Dinitrotoluene	N/A	ug/L	230	23	23	-	0.0130	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2,6-Dinitrotoluene	N/A	ug/L	230	23	23	-	0.0200	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2-Chloronaphthalene	N/A	ug/L	32	23	23	-	0.00150	10.0	0	0.00999	10.0	0
Groundwater	SVOCs	Total	2-Chlorophenol	N/A	ug/L	2,000	23	23	-	0.0170	10.0	0	0.0999	10.0	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Groundwater	SVOCs	Total	2-Methylnaphthalene	N/A	ug/L	72.16	23	19	4	0.0150	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2-Methylphenol	N/A	ug/L	13	23	22	-	0.0240	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	2-Nitroaniline	N/A	ug/L	NV	23	23	-	0.0180	48.0	-	0.0999	48.0	-
Groundwater	SVOCs	Total	2-Nitrophenol	N/A	ug/L	NV	23	23	-	0.0220	10.0	-	0.0999	10.0	-
Groundwater	SVOCs	Total	3,3'-Dichlorobenzidine	N/A	ug/L	4.5	23	23	-	0.0360	19.0	14	0.0999	19.0	14
Groundwater	SVOCs	Total	3-Nitroaniline	N/A	ug/L	NV	23	23	-	0.0330	48.0	-	0.0999	48.0	-
Groundwater	SVOCs	Total	4,6-Dinitro-2-methylphenol	N/A	ug/L	NV	23	23	-	0.0220	48.0	-	0.500	48.0	-
Groundwater	SVOCs	Total	4-Bromophenyl Phenyl Ether	N/A	ug/L	1.5	23	23	-	0.0120	10.0	14	0.0999	10.0	14
Groundwater	SVOCs	Total	4-Chloro-3-methylphenol	N/A	ug/L	NV	23	23	-	0.0539	10.0	-	0.0999	10.0	-
Groundwater	SVOCs	Total	4-Chloroaniline	N/A	ug/L	50	23	23	-	0.0390	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	4-Chlorophenyl Phenyl Ether	N/A	ug/L	NV	23	23	-	0.0150	10.0	-	0.0999	10.0	-
Groundwater	SVOCs	Total	4-Nitroaniline	N/A	ug/L	NV	23	23	-	0.0210	48.0	-	0.0999	48.0	-
Groundwater	SVOCs	Total	4-Nitrophenol	N/A	ug/L	150	53	53	-	0.0290	48.0	0	0.500	48.0	0
Groundwater	SVOCs	Total	Acenaphthene	N/A	ug/L	55.85	23	21	-	0.00160	10.0	0	0.00999	10.0	0
Groundwater	SVOCs	Total	Acenaphthylene	N/A	ug/L	306.9	23	23	-	0.00150	10.0	0	0.00999	10.0	0
Groundwater	SVOCs	Total	Aniline	N/A	ug/L	2.2	23	23	-	0.0000616	10.0	14	0.0999	10.0	14
Groundwater	SVOCs	Total	Anthracene	N/A	ug/L	13	23	22	-	0.00150	10.0	0	0.00999	10.0	0
Groundwater	SVOCs	Total	Benzidine	N/A	ug/L	3.9	23	23	-	0.0240	100	14	0.500	100	16
Groundwater	SVOCs	Total	Benzo(a)anthracene	N/A	ug/L	0.027	23	23	-	0.00426	10.0	16	0.00999	10.0	16
Groundwater	SVOCs	Total	Benzo(a)pyrene	N/A	ug/L	0.014	23	23	-	0.00470	10.0	16	0.00999	10.0	16
Groundwater	SVOCs	Total	Benzo(b)fluoranthene	N/A	ug/L	0.6774	14	14	-	9.40	10.0	14	9.40	10.0	14
Groundwater	SVOCs	Total	Benzo(g,h,i)perylene	N/A	ug/L	0.4391	23	23	-	0.00340	10.0	14	0.00999	10.0	14
Groundwater	SVOCs	Total	Benzo(k)fluoranthene	N/A	ug/L	0.6415	14	14	-	9.40	10.0	14	9.40	10.0	14
Groundwater	SVOCs	Total	Benzofluoranthenes, Total	N/A	ug/L	0.014	9	9	-	0.00380	0.0540	2	0.0200	0.284	9
Groundwater	SVOCs	Total	Benzoic Acid	N/A	ug/L	42	23	22	-	0.0200	48.0	8	0.500	48.0	8
Groundwater	SVOCs	Total	Benzyl Alcohol	N/A	ug/L	8.6	23	23	-	0.0320	10.0	14	0.0999	10.0	14
Groundwater	SVOCs	Total	Bis(2-chloroethoxy)methane	N/A	ug/L	NV	23	23	-	0.0180	10.0	-	0.0999	10.0	-
Groundwater	SVOCs	Total	Bis(2-chloroethyl) Ether	N/A	ug/L	1,900	23	23	-	0.0190	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Bis(2-chloroisopropyl) Ether	N/A	ug/L	NV	23	23	-	0.0210	10.0	-	0.0999	10.0	-
Groundwater	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	ug/L	3	23	19	-	0.0649	48.0	11	0.0999	48.0	11
Groundwater	SVOCs	Total	Butyl Benzyl Phthalate	N/A	ug/L	19	23	23	-	0.187	10.0	0	0.500	10.0	0
Groundwater	SVOCs	Total	Carbazole	N/A	ug/L	NV	23	23	-	0.00280	10.0	-	0.00999	10.0	-
Groundwater	SVOCs	Total	Chrysene	N/A	ug/L	2.042	23	23	-	0.00250	10.0	14	0.00999	10.0	14
Groundwater	SVOCs	Total	Dibenz(a,h)anthracene	N/A	ug/L	0.2825	23	23	-	0.00270	10.0	14	0.00999	10.0	14
Groundwater	SVOCs	Total	Dibenzofuran	N/A	ug/L	3.7	23	23	-	0.0140	10.0	14	0.0999	10.0	14
Groundwater	SVOCs	Total	Diethyl Phthalate	N/A	ug/L	210	23	20	1	0.0579	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Dimethyl Phthalate	N/A	ug/L	3	23	22	-	0.0160	10.0	14	0.100	10.0	14
Groundwater	SVOCs	Total	Di-n-butyl Phthalate	N/A	ug/L	35	23	23	-	0.231	10.0	0	0.500	10.0	0
Groundwater	SVOCs	Total	Di-n-octyl Phthalate	N/A	ug/L	708	23	20	-	0.0340	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Fluoranthene	N/A	ug/L	6.16	23	23	-	0.00190	10.0	14	0.00999	10.0	14
Groundwater	SVOCs	Total	Fluorene	N/A	ug/L	3.9	23	23	-	0.00140	10.0	14	0.00999	10.0	14
Groundwater	SVOCs	Total	Hexachlorobenzene	N/A	ug/L	0.0003	23	23	-	0.0200	10.0	23	0.0999	10.0	23
Groundwater	SVOCs	Total	Hexachlorobutadiene	N/A	ug/L	9.3	23	23	-	0.0290	10.0	14	0.0999	10.0	14
Groundwater	SVOCs	Total	Hexachlorocyclopentadiene	N/A	ug/L	5.2	23	23	-	0.0260	10.0	14	0.0999	10.0	14
Groundwater	SVOCs	Total	Hexachloroethane	N/A	ug/L	540	23	23	-	0.0400	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Indeno(1,2,3-cd)pyrene	N/A	ug/L	0.275	23	23	-	0.00300	10.0	14	0.00999	10.0	14

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Groundwater	SVOCs	Total	Isophorone	N/A	ug/L	2,340	23	21	1	0.0180	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Naphthalene	N/A	ug/L	193.5	23	20	-	0.00220	10.0	0	0.00999	10.0	0
Groundwater	SVOCs	Total	Nitrobenzene	N/A	ug/L	540	23	23	-	0.0450	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	N-Nitrosodimethylamine	N/A	ug/L	117	23	23	-	0.00330	10.0	0	0.500	10.0	0
Groundwater	SVOCs	Total	N-Nitrosodi-n-propylamine	N/A	ug/L	117	23	23	-	0.0210	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	N-Nitrosodiphenylamine	N/A	ug/L	210	23	23	-	0.00999	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	ug/L	13	23	22	-	0.0230	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Pentachlorophenol	N/A	ug/L	15	23	23	-	0.0170	25.0	5	0.0999	25.0	5
Groundwater	SVOCs	Total	Phenanthrene	N/A	ug/L	6.3	54	49	-	0.00220	10.0	14	0.00999	10.0	14
Groundwater	SVOCs	Total	Phenol	N/A	ug/L	110	54	53	1	0.0320	10.0	0	0.0999	10.0	0
Groundwater	SVOCs	Total	Pyrene	N/A	ug/L	10.11	23	23	-	0.00140	10.0	0	0.00999	10.0	0
Groundwater	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	ug/L	186	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	ug/L	11	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	ug/L	2,400	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,1,2-Trichloroethane	N/A	ug/L	9,400	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	ug/L	47	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	ug/L	25	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,1-Dichloropropene	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	1,2,3-Trichlorobenzene	N/A	ug/L	8	22	22	-	0.500	5.00	0	1.00	5.00	0
Groundwater	VOCs	Total	1,2,3-Trichloropropane	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	1,2,4-Trichlorobenzene	N/A	ug/L	110	22	22	-	0.500	5.00	0	1.00	5.00	0
Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	ug/L	7.3	22	20	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	ug/L	NV	22	22	-	0.500	3.00	-	1.00	3.00	-
Groundwater	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	1,2-Dichlorobenzene	N/A	ug/L	14	22	22	-	0.500	2.00	0	1.00	2.00	0
Groundwater	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	ug/L	20,000	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,2-Dichloropropane	N/A	ug/L	5,700	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,3,5-Trimethylbenzene	N/A	ug/L	7.3	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,3-Dichlorobenzene	N/A	ug/L	71	22	22	-	0.500	2.00	0	1.00	2.00	0
Groundwater	VOCs	Total	1,3-Dichloropropane	N/A	ug/L	5,700	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	15	22	22	-	0.500	2.00	0	1.00	2.00	0
Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	ug/L	5,700	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	2-Butanone (MEK)	N/A	ug/L	14,000	14	14	-	2.50	10.0	0	5.00	10.0	0
Groundwater	VOCs	Total	2-Chloroethylvinylether	N/A	ug/L	4,760	13	13	-	10.0	10.0	0	10.0	10.0	0
Groundwater	VOCs	Total	2-Chlorotoluene	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	2-Hexanone	N/A	ug/L	99	22	22	-	2.50	10.0	0	5.00	10.0	0
Groundwater	VOCs	Total	4-Chlorotoluene	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	4-Isopropyltoluene	N/A	ug/L	NV	22	22	-	0.500	2.00	-	1.00	2.00	-
Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	ug/L	170	22	21	1	2.50	10.0	0	5.00	10.0	0
Groundwater	VOCs	Total	Acetone	N/A	ug/L	1,500	22	18	-	2.50	10.0	0	5.00	10.0	0
Groundwater	VOCs	Total	Benzene	N/A	ug/L	130	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	Bromobenzene	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	Bromochloromethane	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	Bromodichloromethane	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	Bromoform	N/A	ug/L	320	22	22	-	0.500	3.00	0	1.00	3.00	0
Groundwater	VOCs	Total	Bromomethane	N/A	ug/L	16	22	22	-	1.00	1.00	0	1.00	2.00	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(17 of 22)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Groundwater	VOCs	Total	Carbon Disulfide	N/A	ug/L	0.92	22	21	-	0.500	10.0	13	1.00	10.0	21
Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	ug/L	74	22	21	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	Chlorobenzene	N/A	ug/L	50	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	Chloroethane	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	Chloroform	N/A	ug/L	1,240	56	48	4	0.0820	1.00	0	0.500	1.00	0
Groundwater	VOCs	Total	Chloromethane	N/A	ug/L	NV	22	22	-	0.500	5.00	-	1.00	5.00	-
Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	ug/L	590	22	21	1	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	cis-1,3-Dichloropropene	N/A	ug/L	0.055	22	22	-	0.500	3.00	22	1.00	3.00	22
Groundwater	VOCs	Total	Dibromochloromethane	N/A	ug/L	NV	22	22	-	0.500	2.00	-	1.00	2.00	-
Groundwater	VOCs	Total	Dibromomethane	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	Dichlorodifluoromethane	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	ug/L	2,200	22	22	-	0.500	5.00	0	1.00	5.00	0
Groundwater	VOCs	Total	Ethylbenzene	N/A	ug/L	7.3	22	21	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	Hexachlorobutadiene	N/A	ug/L	9.3	22	22	-	0.500	3.00	0	1.00	3.00	0
Groundwater	VOCs	Total	Isopropylbenzene	N/A	ug/L	7.3	22	20	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	m,p-Xylenes	N/A	ug/L	13	22	22	-	1.00	1.00	0	1.00	2.00	0
Groundwater	VOCs	Total	Naphthalene	N/A	ug/L	193.5	22	22	-	0.500	5.00	0	1.00	5.00	0
Groundwater	VOCs	Total	n-Butylbenzene	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	n-Propylbenzene	N/A	ug/L	7.3	22	20	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	o-Xylene	N/A	ug/L	350	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	sec-Butylbenzene	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	Styrene	N/A	ug/L	72	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	tert-Butylbenzene	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	840	56	43	2	0.0970	1.00	0	0.500	1.00	0
Groundwater	VOCs	Total	Toluene	N/A	ug/L	9.8	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	ug/L	590	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	trans-1,3-Dichloropropene	N/A	ug/L	0.055	22	22	-	0.500	3.00	22	1.00	3.00	22
Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	ug/L	3,000	22	22	-	0.500	1.00	0	1.00	1.00	0
Groundwater	VOCs	Total	Trichlorofluoromethane	N/A	ug/L	NV	22	22	-	0.500	1.00	-	1.00	1.00	-
Groundwater	VOCs	Total	Vinyl Acetate	N/A	ug/L	16	22	22	-	2.50	10.0	0	5.00	10.0	0
Groundwater	VOCs	Total	Vinyl Chloride	N/A	ug/L	1,300	56	40	13	0.0440	1.00	0	0.500	1.00	0
Seep Water	Metals	Dissolved	Arsenic	N/A	ug/L	150	5	2	-	0.520	1.00	0	0.520	1.00	0
Seep Water	Metals	Dissolved	Beryllium	N/A	ug/L	5.3	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Dissolved	Cadmium	N/A	ug/L	0.17	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	Metals	Dissolved	Chromium	N/A	ug/L	49	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Dissolved	Iron	N/A	ug/L	1,000	5	2	2	20.0	20.0	0	20.0	20.0	0
Seep Water	Metals	Dissolved	Lead	N/A	ug/L	1.44	5	2	2	0.0300	1.00	0	0.0300	1.00	0
Seep Water	Metals	Dissolved	Manganese	N/A	ug/L	120	5	2	-	0.140	0.160	0	0.140	0.160	0
Seep Water	Metals	Dissolved	Mercury	N/A	ug/L	0.77	2	2	-	0.0300	1.00	1	0.200	1.00	1
Seep Water	Metals	Dissolved	Potassium	N/A	ug/L	53,000	2	0	1	-	-	0	2,000	2,000	0
Seep Water	Metals	Dissolved	Selenium	N/A	ug/L	5	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Metals	Dissolved	Silver	N/A	ug/L	0.12	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	Metals	Dissolved	Thallium	N/A	ug/L	40	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	Butyltins	Total	Dibutyltin	N/A	ug/L	0.063	4	4	-	0.00730	0.00810	0	0.0500	0.0500	0
Seep Water	Butyltins	Total	Monobutyltin	N/A	ug/L	0.063	4	4	-	0.0110	0.0290	0	0.0500	0.0870	3
Seep Water	Herbicides	Total	2,4,5-T	N/A	ug/L	36	1	1	-	0.400	0.400	0	0.400	0.400	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(18 of 22)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Seep Water	Herbicides	Total	2,4,5-TP (Silvex)	N/A	ug/L	NV	1	1	-	0.400	0.400	-	0.400	0.400	-
Seep Water	Herbicides	Total	2,4-D	N/A	ug/L	4	1	1	-	0.400	0.400	0	0.400	0.400	0
Seep Water	Herbicides	Total	2,4-DB	N/A	ug/L	NV	1	1	-	0.400	0.400	-	0.400	0.400	-
Seep Water	Herbicides	Total	Dalapon	N/A	ug/L	NV	1	1	-	0.400	0.400	-	0.400	0.400	-
Seep Water	Herbicides	Total	Dicamba	N/A	ug/L	10	1	1	-	0.400	0.400	0	0.400	0.400	0
Seep Water	Herbicides	Total	Dichloroprop	N/A	ug/L	4	1	1	-	0.400	0.400	0	0.400	0.400	0
Seep Water	Herbicides	Total	Dinoseb	N/A	ug/L	0.05	1	1	-	0.400	0.400	1	0.400	0.400	1
Seep Water	Herbicides	Total	MCPA	N/A	ug/L	2.6	1	1	-	100	100	1	100	100	1
Seep Water	Herbicides	Total	MCPP	N/A	ug/L	NV	1	1	-	100	100	-	100	100	-
Seep Water	PCB Aroclors	Total	Aroclor 1016	N/A	ug/L	0.014	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	PCB Aroclors	Total	Aroclor 1221	N/A	ug/L	0.014	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	PCB Aroclors	Total	Aroclor 1232	N/A	ug/L	0.014	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	PCB Aroclors	Total	Aroclor 1242	N/A	ug/L	0.014	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	PCB Aroclors	Total	Aroclor 1248	N/A	ug/L	0.014	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	PCB Aroclors	Total	Aroclor 1254	N/A	ug/L	0.014	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	PCB Aroclors	Total	Aroclor 1260	N/A	ug/L	0.014	1	1	-	0.100	0.100	1	0.100	0.100	1
Seep Water	Pesticides	Total	4,4'-DDD	N/A	ug/L	0.001	1	1	-	0.0400	0.0400	1	0.0400	0.0400	1
Seep Water	Pesticides	Total	4,4'-DDE	N/A	ug/L	0.001	1	1	-	0.0300	0.0300	1	0.0300	0.0300	1
Seep Water	Pesticides	Total	4,4'-DDT	N/A	ug/L	0.001	1	1	-	0.0900	0.0900	1	0.0900	0.0900	1
Seep Water	Pesticides	Total	Aldrin	N/A	ug/L	0.06	1	1	-	0.0400	0.0400	0	0.0400	0.0400	0
Seep Water	Pesticides	Total	BHC (alpha)	N/A	ug/L	2.2	1	1	-	0.0200	0.0200	0	0.0200	0.0200	0
Seep Water	Pesticides	Total	BHC (beta)	N/A	ug/L	2.2	1	1	-	0.100	0.100	0	0.100	0.100	0
Seep Water	Pesticides	Total	BHC (delta)	N/A	ug/L	2.2	1	1	-	0.0500	0.0500	0	0.0500	0.0500	0
Seep Water	Pesticides	Total	BHC (gamma) Lindane	N/A	ug/L	0.08	1	1	-	0.0300	0.0300	0	0.0300	0.0300	0
Seep Water	Pesticides	Total	Chlordane (alpha)	N/A	ug/L	0.0043	1	1	-	0.0500	0.0500	1	0.0500	0.0500	1
Seep Water	Pesticides	Total	Chlordane (gamma)	N/A	ug/L	0.0043	1	1	-	0.0200	0.0200	1	0.0200	0.0200	1
Seep Water	Pesticides	Total	Dieldrin	N/A	ug/L	0.056	1	1	-	0.0700	0.0700	1	0.0700	0.0700	1
Seep Water	Pesticides	Total	Endosulfan I	N/A	ug/L	0.056	1	1	-	0.0300	0.0300	0	0.0300	0.0300	0
Seep Water	Pesticides	Total	Endosulfan II	N/A	ug/L	0.056	1	1	-	0.0500	0.0500	0	0.0500	0.0500	0
Seep Water	Pesticides	Total	Endosulfan Sulfate	N/A	ug/L	0.051	1	1	-	0.0700	0.0700	1	0.0700	0.0700	1
Seep Water	Pesticides	Total	Endrin Aldehyde	N/A	ug/L	0.15	1	1	-	0.100	0.100	0	0.100	0.100	0
Seep Water	Pesticides	Total	Endrin	N/A	ug/L	0.036	1	1	-	0.0800	0.0800	1	0.0800	0.0800	1
Seep Water	Pesticides	Total	Heptachlor Epoxide	N/A	ug/L	0.0038	1	1	-	0.0300	0.0300	1	0.0300	0.0300	1
Seep Water	Pesticides	Total	Heptachlor	N/A	ug/L	0.0038	1	1	-	0.0300	0.0300	1	0.0300	0.0300	1
Seep Water	Pesticides	Total	Methoxychlor	N/A	ug/L	0.03	1	1	-	0.500	0.500	1	0.500	0.500	1
Seep Water	Pesticides	Total	Toxaphene	N/A	ug/L	0.002	1	1	-	1.50	1.50	1	1.50	1.50	1
Seep Water	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	NV	5	3	1	13.0	250	-	110	250	-
Seep Water	NWTPH-Dx	Total	Residual Range Organics	N/A	ug/L	NV	5	4	-	23.0	500	-	110	500	-
Seep Water	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	NV	5	5	-	13.0	250	-	250	250	-
Seep Water	SVOCs	Total	1,2,4-Trichlorobenzene	N/A	ug/L	110	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	1,2-Dichlorobenzene	N/A	ug/L	14	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	1,3-Dichlorobenzene	N/A	ug/L	71	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	15	5	5	-	0.0290	4.76	0	0.200	4.76	0
Seep Water	SVOCs	Total	2,4,5-Trichlorophenol	N/A	ug/L	18	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2,4,6-Trichlorophenol	N/A	ug/L	970	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2,4-Dichlorophenol	N/A	ug/L	3,650	1	1	-	4.76	4.76	0	4.76	4.76	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(19 of 22)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Seep Water	SVOCs	Total	2,4-Dimethylphenol	N/A	ug/L	42	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2,4-Dinitrophenol	N/A	ug/L	19	1	1	-	9.52	9.52	0	9.52	9.52	0
Seep Water	SVOCs	Total	2,4-Dinitrotoluene	N/A	ug/L	230	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2,6-Dinitrotoluene	N/A	ug/L	230	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2-Chloronaphthalene	N/A	ug/L	32	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2-Chlorophenol	N/A	ug/L	2,000	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2-Methylnaphthalene	N/A	ug/L	72.16	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2-Methylphenol	N/A	ug/L	13	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	2-Nitroaniline	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	2-Nitrophenol	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	3,3'-Dichlorobenzidine	N/A	ug/L	4.5	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	3-Nitroaniline	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	4,6-Dinitro-2-methylphenol	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	4-Bromophenyl Phenyl Ether	N/A	ug/L	1.5	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	4-Chloro-3-methylphenol	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	4-Chloroaniline	N/A	ug/L	50	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	4-Chlorophenyl Phenyl Ether	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	4-Nitroaniline	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	4-Nitrophenol	N/A	ug/L	150	5	5	-	0.280	4.76	0	2.00	4.76	0
Seep Water	SVOCs	Total	Acenaphthene	N/A	ug/L	55.85	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Acenaphthylene	N/A	ug/L	306.9	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Aniline	N/A	ug/L	2.2	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Anthracene	N/A	ug/L	13	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Benzidine	N/A	ug/L	3.9	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Benzo(a)anthracene	N/A	ug/L	0.027	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Benzo(a)pyrene	N/A	ug/L	0.014	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Benzo(b)fluoranthene	N/A	ug/L	0.6774	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Benzo(g,h,i)perylene	N/A	ug/L	0.4391	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Benzo(k)fluoranthene	N/A	ug/L	0.6415	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Benzyl Alcohol	N/A	ug/L	8.6	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Bis(2-chloroethoxy)methane	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	Bis(2-chloroethyl) Ether	N/A	ug/L	1,900	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Bis(2-chloroisopropyl) Ether	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	ug/L	3	1	1	-	23.8	23.8	1	23.8	23.8	1
Seep Water	SVOCs	Total	Butyl Benzyl Phthalate	N/A	ug/L	19	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Carbazole	N/A	ug/L	NV	1	1	-	4.76	4.76	-	4.76	4.76	-
Seep Water	SVOCs	Total	Chrysene	N/A	ug/L	2.042	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Dibenz(a,h)anthracene	N/A	ug/L	0.2825	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Dibenzofuran	N/A	ug/L	3.7	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Diethyl Phthalate	N/A	ug/L	210	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Dimethyl Phthalate	N/A	ug/L	3	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Di-n-butyl Phthalate	N/A	ug/L	35	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Di-n-octyl Phthalate	N/A	ug/L	708	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Fluoranthene	N/A	ug/L	6.16	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Fluorene	N/A	ug/L	3.9	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Hexachlorobenzene	N/A	ug/L	0.0003	1	1	-	4.76	4.76	1	4.76	4.76	1

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(20 of 22)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Seep Water	SVOCs	Total	Hexachlorobutadiene	N/A	ug/L	9.3	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Hexachlorocyclopentadiene	N/A	ug/L	5.2	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Hexachloroethane	N/A	ug/L	540	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Indeno(1,2,3-cd)pyrene	N/A	ug/L	0.275	1	1	-	4.76	4.76	1	4.76	4.76	1
Seep Water	SVOCs	Total	Isophorone	N/A	ug/L	2,340	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Naphthalene	N/A	ug/L	193.5	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Nitrobenzene	N/A	ug/L	540	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	N-Nitrosodimethylamine	N/A	ug/L	117	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	N-Nitrosodi-n-propylamine	N/A	ug/L	117	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	N-Nitrosodiphenylamine	N/A	ug/L	210	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	ug/L	13	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Pentachlorophenol	N/A	ug/L	15	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	SVOCs	Total	Phenanthrene	N/A	ug/L	6.3	5	5	-	0.0220	4.76	0	0.200	4.76	0
Seep Water	SVOCs	Total	Phenol	N/A	ug/L	110	5	5	-	0.0630	4.76	0	0.490	4.76	0
Seep Water	SVOCs	Total	Pyrene	N/A	ug/L	10.11	1	1	-	4.76	4.76	0	4.76	4.76	0
Seep Water	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	ug/L	186	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	ug/L	11	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	ug/L	2,400	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,1,2-Trichloroethane	N/A	ug/L	9,400	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,1-Dichloroethane	N/A	ug/L	47	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,1-Dichloroethene	N/A	ug/L	25	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,1-Dichloropropene	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	1,2,3-Trichlorobenzene	N/A	ug/L	8	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,2,3-Trichloropropane	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	1,2,4-Trichlorobenzene	N/A	ug/L	110	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,2,4-Trimethylbenzene	N/A	ug/L	7.3	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	ug/L	NV	1	1	-	5.00	5.00	-	5.00	5.00	-
Seep Water	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	1,2-Dichlorobenzene	N/A	ug/L	14	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	ug/L	20,000	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,2-Dichloropropane	N/A	ug/L	5,700	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,3,5-Trimethylbenzene	N/A	ug/L	7.3	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,3-Dichlorobenzene	N/A	ug/L	71	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,3-Dichloropropane	N/A	ug/L	5,700	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	15	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	2,2-Dichloropropane	N/A	ug/L	5,700	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	2-Butanone (MEK)	N/A	ug/L	14,000	1	1	-	10.0	10.0	0	10.0	10.0	0
Seep Water	VOCs	Total	2-Chlorotoluene	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	2-Hexanone	N/A	ug/L	99	1	1	-	10.0	10.0	0	10.0	10.0	0
Seep Water	VOCs	Total	4-Chlorotoluene	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	4-Isopropyltoluene	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	ug/L	170	1	1	-	10.0	10.0	0	10.0	10.0	0
Seep Water	VOCs	Total	Acetone	N/A	ug/L	1,500	1	1	-	10.0	10.0	0	10.0	10.0	0
Seep Water	VOCs	Total	Benzene	N/A	ug/L	130	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Bromobenzene	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	Bromochloromethane	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(21 of 22)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Seep Water	VOCs	Total	Bromodichloromethane	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	Bromoform	N/A	ug/L	320	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Bromomethane	N/A	ug/L	16	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Carbon Disulfide	N/A	ug/L	0.92	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	Carbon Tetrachloride	N/A	ug/L	74	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Chlorobenzene	N/A	ug/L	50	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Chloroethane	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	Chloroform	N/A	ug/L	1,240	5	3	-	0.0820	1.00	0	0.500	1.00	0
Seep Water	VOCs	Total	Chloromethane	N/A	ug/L	NV	1	1	-	5.00	5.00	-	5.00	5.00	-
Seep Water	VOCs	Total	cis-1,2-Dichloroethene	N/A	ug/L	590	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	cis-1,3-Dichloropropene	N/A	ug/L	0.055	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	Dibromochloromethane	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	Dibromomethane	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	Dichlorodifluoromethane	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	ug/L	2,200	1	1	-	5.00	5.00	0	5.00	5.00	0
Seep Water	VOCs	Total	Ethylbenzene	N/A	ug/L	7.3	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Hexachlorobutadiene	N/A	ug/L	9.3	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Isopropylbenzene	N/A	ug/L	7.3	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	m,p-Xylenes	N/A	ug/L	13	1	1	-	2.00	2.00	0	2.00	2.00	0
Seep Water	VOCs	Total	Naphthalene	N/A	ug/L	193.5	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	n-Butylbenzene	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	n-Propylbenzene	N/A	ug/L	7.3	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	o-Xylene	N/A	ug/L	350	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	sec-Butylbenzene	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	Styrene	N/A	ug/L	72	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	tert-Butylbenzene	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	840	5	2	1	0.0970	1.00	0	0.500	1.00	0
Seep Water	VOCs	Total	Toluene	N/A	ug/L	9.8	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	trans-1,2-Dichloroethene	N/A	ug/L	590	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	trans-1,3-Dichloropropene	N/A	ug/L	0.055	1	1	-	1.00	1.00	1	1.00	1.00	1
Seep Water	VOCs	Total	Trichloroethene (TCE)	N/A	ug/L	3,000	1	1	-	1.00	1.00	0	1.00	1.00	0
Seep Water	VOCs	Total	Trichlorofluoromethane	N/A	ug/L	NV	1	1	-	1.00	1.00	-	1.00	1.00	-
Seep Water	VOCs	Total	Vinyl Chloride	N/A	ug/L	1,300	5	5	-	0.0440	1.00	0	0.500	1.00	0
Surface Water	Metals	Total	Arsenic	N/A	ug/L	150	4	1	-	1.10	1.10	0	1.10	1.10	0
Surface Water	Metals	Total	Mercury	N/A	ug/L	0.77	1	1	-	0.0300	0.0300	0	0.200	0.200	0
Surface Water	Metals	Dissolved	Iron	N/A	ug/L	1,000	4	3	1	4.00	20.0	0	20.0	20.0	0
Surface Water	Metals	Dissolved	Lead	N/A	ug/L	1.44	4	1	3	0.00900	0.00900	0	0.0300	0.0500	0
Surface Water	Metals	Dissolved	Mercury	N/A	ug/L	0.77	1	1	-	0.0300	0.0300	0	0.200	0.200	0
Surface Water	Butyltins	Total	Dibutyltin	N/A	ug/L	0.063	4	4	-	0.00730	0.00810	0	0.0500	0.0500	0
Surface Water	Butyltins	Total	Monobutyltin	N/A	ug/L	0.063	4	4	-	0.0110	0.0290	0	0.0500	0.0870	3
Surface Water	NWTPH-Dx	Total	Diesel Range Organics	N/A	ug/L	NV	4	2	2	12.0	120	-	100	120	-
Surface Water	NWTPH-Dx	Total	Residual Range Organics	N/A	ug/L	NV	4	4	-	20.0	120	-	100	120	-
Surface Water	NWTPH-Gx	Total	Gasoline Range Organics	N/A	ug/L	NV	4	4	-	13.0	13.0	-	250	250	-
Surface Water	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	15	4	4	-	0.0290	0.0310	0	0.200	0.210	0
Surface Water	SVOCs	Total	4-Nitrophenol	N/A	ug/L	150	4	4	-	0.280	0.300	0	2.00	2.10	0
Surface Water	SVOCs	Total	Phenanthrene	N/A	ug/L	6.3	4	4	-	0.0220	0.0230	0	0.200	0.210	0

Table K-5
Ecological Data Sensitivity Analysis for Landfill AOPC Samples
Bradford Island - Upland Operable Unit
(22 of 22)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Surface Water	SVOCs	Total	Phenol	N/A	ug/L	110	4	4	-	0.0630	0.0660	0	0.480	0.530	0
Surface Water	VOCs	Total	Chloroform	N/A	ug/L	1,240	4	4	-	0.0820	0.0820	0	0.500	0.500	0
Surface Water	VOCs	Total	Tetrachloroethene (PCE)	N/A	ug/L	840	4	4	-	0.0970	0.0970	0	0.500	0.500	0
Surface Water	VOCs	Total	Vinyl Chloride	N/A	ug/L	1,300	4	4	-	0.0440	0.0440	0	0.500	0.500	0

Notes
(1) The SLV for Total LPAHs was used for the individual LPAHs.
(2) The SLV for Total HPAHs was used for the individual HPAHs.
The potentially mass wasting soil subset is comprised of the following samples: BIL01USE through BIL09USE, BIL13SSI, and L-01 through L-04.
= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.
= When the number of applicable MRLs > SLV is higher than the number of applicable MDLs > SLV, they are highlited pink when the number of MDLs > SLV is zero or difference is more than 1.

MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit
MW Soil = Mass Wasting Soil
N/A = not applicable
ND = non-detect
NV = No value
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SVOC = semi-volatile organic carbon
VOC = volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	Metals	Total	Antimony	0-1 ft	N/A	mg/kg	0.27	58	17	24	0.160	3.54	15	0.160	4.12	36
Soil	Metals	Total	Antimony	0-3 ft	N/A	mg/kg	0.27	75	20	35	0.160	4.01	18	0.160	4.12	46
Soil	Metals	Total	Arsenic	0-1 ft	N/A	mg/kg	18	58	1	3	0.159	0.159	0	0.907	1.08	0
Soil	Metals	Total	Arsenic	0-3 ft	N/A	mg/kg	18	75	1	3	0.159	0.159	0	0.907	1.08	0
Soil	Metals	Total	Beryllium	0-1 ft	N/A	mg/kg	21	58	31	24	0.147	0.191	0	0.248	1.23	0
Soil	Metals	Total	Beryllium	0-3 ft	N/A	mg/kg	21	75	31	36	0.147	0.191	0	0.248	1.23	0
Soil	Metals	Total	Cadmium	0-1 ft	N/A	mg/kg	0.36	58	5	4	0.0122	0.0129	0	0.248	0.540	3
Soil	Metals	Total	Cadmium	0-3 ft	N/A	mg/kg	0.36	75	8	4	0.0122	0.0153	0	0.248	0.540	3
Soil	Metals	Total	Mercury	0-1 ft	N/A	mg/kg	0.066	58	15	15	0.00528	0.0306	0	0.0196	0.0483	0
Soil	Metals	Total	Mercury	0-3 ft	N/A	mg/kg	0.066	75	17	19	0.00528	0.0338	0	0.0196	0.0514	0
Soil	Metals	Total	Selenium	0-1 ft	N/A	mg/kg	0.52	58	28	27	0.0781	0.500	0	0.248	4.12	52
Soil	Metals	Total	Selenium	0-3 ft	N/A	mg/kg	0.52	75	32	38	0.0781	0.517	0	0.248	4.12	66
Soil	Metals	Total	Silver	0-1 ft	N/A	mg/kg	4.2	58	3	36	0.0440	0.0524	0	0.454	0.687	0
Soil	Metals	Total	Silver	0-3 ft	N/A	mg/kg	4.2	75	3	49	0.0440	0.0524	0	0.0680	0.687	0
Soil	Metals	Total	Thallium	0-1 ft	N/A	mg/kg	1	58	12	33	0.0429	0.0558	0	0.248	0.687	0
Soil	Metals	Total	Thallium	0-3 ft	N/A	mg/kg	1	75	12	45	0.0429	0.0558	0	0.248	0.687	0
Soil	Butyltins	Total	Dibutyltin	0-1 ft	N/A	ug/kg	28,000	47	29	1	0.270	0.842	0	1.20	2.62	0
Soil	Butyltins	Total	Dibutyltin	0-3 ft	N/A	ug/kg	28,000	62	44	1	0.270	0.887	0	1.20	2.64	0
Soil	Butyltins	Total	Monobutyltin	0-1 ft	N/A	ug/kg	28,000	47	25	4	0.240	1.86	0	1.20	3.49	0
Soil	Butyltins	Total	Monobutyltin	0-3 ft	N/A	ug/kg	28,000	62	40	4	0.240	1.87	0	1.20	3.52	0
Soil	Butyltins	Total	Tetrabutyltin	0-1 ft	N/A	ug/kg	28,000	34	33	-	0.445	0.853	0	1.20	2.27	0
Soil	Butyltins	Total	Tetrabutyltin	0-3 ft	N/A	ug/kg	28,000	44	43	-	0.445	0.910	0	1.20	2.42	0
Soil	Butyltins	Total	Tributyltin	0-1 ft	N/A	ug/kg	28,000	47	31	2	0.340	1.53	0	1.20	3.49	0
Soil	Butyltins	Total	Tributyltin	0-3 ft	N/A	ug/kg	28,000	62	46	2	0.340	1.53	0	1.20	3.52	0
Soil	Herbicides	Total	2,4,5-T	0-1 ft	N/A	ug/kg	21	12	12	-	1.26	1.58	0	5.77	7.23	0
Soil	Herbicides	Total	2,4,5-T	0-3 ft	N/A	ug/kg	21	12	12	-	1.26	1.58	0	5.77	7.23	0
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-1 ft	N/A	ug/kg	21	12	12	-	1.84	2.31	0	5.77	7.23	0
Soil	Herbicides	Total	2,4,5-TP (Silvex)	0-3 ft	N/A	ug/kg	21	12	12	-	1.84	2.31	0	5.77	7.23	0
Soil	Herbicides	Total	2,4-D	0-1 ft	N/A	ug/kg	21	12	12	-	0.476	5.68	0	5.77	7.23	0
Soil	Herbicides	Total	2,4-D	0-3 ft	N/A	ug/kg	21	12	12	-	0.476	5.68	0	5.77	7.23	0
Soil	Herbicides	Total	2,4-DB	0-1 ft	N/A	ug/kg	21	12	12	-	0.568	1.01	0	5.77	7.23	0
Soil	Herbicides	Total	2,4-DB	0-3 ft	N/A	ug/kg	21	12	12	-	0.568	1.01	0	5.77	7.23	0
Soil	Herbicides	Total	4-Nitrophenol	0-1 ft	N/A	ug/kg	7,000	12	12	-	1.27	1.60	0	5.77	7.23	0
Soil	Herbicides	Total	4-Nitrophenol	0-3 ft	N/A	ug/kg	7,000	12	12	-	1.27	1.60	0	5.77	7.23	0
Soil	Herbicides	Total	Dalapon	0-1 ft	N/A	ug/kg	NV	12	12	-	1.76	2.20	-	5.77	7.23	-
Soil	Herbicides	Total	Dalapon	0-3 ft	N/A	ug/kg	NV	12	12	-	1.76	2.20	-	5.77	7.23	-
Soil	Herbicides	Total	Dicamba	0-1 ft	N/A	ug/kg	NV	12	12	-	1.40	1.76	-	5.77	7.23	-
Soil	Herbicides	Total	Dicamba	0-3 ft	N/A	ug/kg	NV	12	12	-	1.40	1.76	-	5.77	7.23	-
Soil	Herbicides	Total	Dichloroprop	0-1 ft	N/A	ug/kg	21	12	12	-	0.614	0.770	0	5.77	7.23	0
Soil	Herbicides	Total	Dichloroprop	0-3 ft	N/A	ug/kg	21	12	12	-	0.614	0.770	0	5.77	7.23	0
Soil	Herbicides	Total	Dinoseb	0-1 ft	N/A	ug/kg	NV	12	12	-	0.476	0.596	-	5.77	7.23	-
Soil	Herbicides	Total	Dinoseb	0-3 ft	N/A	ug/kg	NV	12	12	-	0.476	0.596	-	5.77	7.23	-
Soil	Herbicides	Total	MCPA	0-1 ft	N/A	ug/kg	21	12	12	-	0.868	1.09	0	5.77	7.23	0
Soil	Herbicides	Total	MCPA	0-3 ft	N/A	ug/kg	21	12	12	-	0.868	1.09	0	5.77	7.23	0
Soil	Herbicides	Total	MCPP	0-1 ft	N/A	ug/kg	21	12	12	-	1.58	1.98	0	5.77	7.23	0
Soil	Herbicides	Total	MCPP	0-3 ft	N/A	ug/kg	21	12	12	-	1.58	1.98	0	5.77	7.23	0
Soil	Herbicides	Total	Pentachlorophenol	0-1 ft	N/A	ug/kg	2,100	12	12	-	0.673	0.843	0	5.77	7.23	0
Soil	Herbicides	Total	Pentachlorophenol	0-3 ft	N/A	ug/kg	2,100	12	12	-	0.673	0.843	0	5.77	7.23	0
Soil	Pesticides	Total	4,4'-DDD	0-1 ft	N/A	ug/kg	21	31	29	2	0.110	10.0	0	0.630	10.0	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	Pesticides	Total	4,4'-DDD	0-3 ft	N/A	ug/kg	21	37	35	2	0.110	10.0	0	0.630	10.0	0
Soil	Pesticides	Total	4,4'-DDE	0-1 ft	N/A	ug/kg	21	31	24	6	0.110	7.80	0	0.660	7.80	0
Soil	Pesticides	Total	4,4'-DDE	0-3 ft	N/A	ug/kg	21	37	30	6	0.110	7.80	0	0.660	7.80	0
Soil	Pesticides	Total	4,4'-DDT	0-1 ft	N/A	ug/kg	21	31	13	3	0.230	78.0	1	1.00	78.0	1
Soil	Pesticides	Total	4,4'-DDT	0-3 ft	N/A	ug/kg	21	37	15	3	0.170	78.0	1	0.990	78.0	1
Soil	Pesticides	Total	Aldrin	0-1 ft	N/A	ug/kg	4.9	31	30	1	0.101	5.00	2	0.630	5.00	4
Soil	Pesticides	Total	Aldrin	0-3 ft	N/A	ug/kg	4.9	37	36	1	0.101	5.00	2	0.630	5.00	4
Soil	Pesticides	Total	BHC (alpha)	0-1 ft	N/A	ug/kg	8,000	31	31	-	0.0981	1.12	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (alpha)	0-3 ft	N/A	ug/kg	8,000	37	37	-	0.0981	1.12	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (beta)	0-1 ft	N/A	ug/kg	8,000	31	30	1	0.109	3.78	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (beta)	0-3 ft	N/A	ug/kg	8,000	37	36	1	0.109	3.78	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (delta)	0-1 ft	N/A	ug/kg	8,000	31	29	1	0.0740	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (delta)	0-3 ft	N/A	ug/kg	8,000	37	35	1	0.0740	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	N/A	ug/kg	8,000	31	29	-	0.0800	37.0	0	0.630	37.0	0
Soil	Pesticides	Total	BHC (gamma) Lindane	0-3 ft	N/A	ug/kg	8,000	37	34	1	0.0800	37.0	0	0.630	37.0	0
Soil	Pesticides	Total	Chlordane (alpha)	0-1 ft	N/A	ug/kg	9,000	19	16	3	0.100	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Chlordane (alpha)	0-3 ft	N/A	ug/kg	9,000	25	22	3	0.100	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Chlordane (gamma)	0-1 ft	N/A	ug/kg	9,000	19	13	-	0.0900	9.90	0	0.630	9.90	0
Soil	Pesticides	Total	Chlordane (gamma)	0-3 ft	N/A	ug/kg	9,000	25	15	3	0.0900	9.90	0	0.630	9.90	0
Soil	Pesticides	Total	Chlordane (technical)	0-1 ft	N/A	ug/kg	9,000	12	12	-	1.34	11.2	0	9.50	19.8	0
Soil	Pesticides	Total	Chlordane (technical)	0-3 ft	N/A	ug/kg	9,000	12	12	-	1.34	11.2	0	9.50	19.8	0
Soil	Pesticides	Total	Dieldrin	0-1 ft	N/A	ug/kg	4.9	31	29	2	0.140	31.0	5	0.630	31.0	6
Soil	Pesticides	Total	Dieldrin	0-3 ft	N/A	ug/kg	4.9	37	35	2	0.140	31.0	5	0.630	31.0	6
Soil	Pesticides	Total	Endosulfan I	0-1 ft	N/A	ug/kg	20,000	31	29	-	0.0630	9.50	0	0.630	9.50	0
Soil	Pesticides	Total	Endosulfan I	0-3 ft	N/A	ug/kg	20,000	37	32	2	0.0630	9.50	0	0.630	9.50	0
Soil	Pesticides	Total	Endosulfan II	0-1 ft	N/A	ug/kg	20,000	31	28	3	0.140	8.40	0	0.630	8.40	0
Soil	Pesticides	Total	Endosulfan II	0-3 ft	N/A	ug/kg	20,000	37	34	3	0.140	8.40	0	0.630	8.40	0
Soil	Pesticides	Total	Endosulfan Sulfate	0-1 ft	N/A	ug/kg	20,000	31	25	4	0.110	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Endosulfan Sulfate	0-3 ft	N/A	ug/kg	20,000	37	31	4	0.110	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Endrin Aldehyde	0-1 ft	N/A	ug/kg	4.9	31	27	2	0.120	9.60	2	0.630	9.60	4
Soil	Pesticides	Total	Endrin Aldehyde	0-3 ft	N/A	ug/kg	4.9	37	32	2	0.120	9.60	2	0.630	9.60	4
Soil	Pesticides	Total	Endrin Ketone	0-1 ft	N/A	ug/kg	4.9	31	27	2	0.0930	21.0	4	0.630	21.0	4
Soil	Pesticides	Total	Endrin Ketone	0-3 ft	N/A	ug/kg	4.9	37	33	2	0.0930	21.0	4	0.630	21.0	4
Soil	Pesticides	Total	Endrin	0-1 ft	N/A	ug/kg	4.9	31	28	1	0.0940	6.80	2	0.630	6.80	4
Soil	Pesticides	Total	Endrin	0-3 ft	N/A	ug/kg	4.9	37	33	1	0.0940	6.80	2	0.630	6.80	4
Soil	Pesticides	Total	Heptachlor Epoxide	0-1 ft	N/A	ug/kg	15,000	31	31	-	0.0840	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Heptachlor Epoxide	0-3 ft	N/A	ug/kg	15,000	37	36	1	0.0840	5.00	0	0.630	5.00	0
Soil	Pesticides	Total	Heptachlor	0-1 ft	N/A	ug/kg	15,000	31	27	4	0.0981	5.00	0	0.660	5.00	0
Soil	Pesticides	Total	Heptachlor	0-3 ft	N/A	ug/kg	15,000	37	33	4	0.0981	5.00	0	0.660	5.00	0
Soil	Pesticides	Total	Methoxychlor	0-1 ft	N/A	ug/kg	500,000	31	29	-	0.141	11.2	0	0.630	19.8	0
Soil	Pesticides	Total	Methoxychlor	0-3 ft	N/A	ug/kg	500,000	37	35	-	0.141	11.2	0	0.630	19.8	0
Soil	Pesticides	Total	Toxaphene	0-1 ft	N/A	ug/kg	1,000,000	31	31	-	4.80	2,900	0	43.0	2,900	0
Soil	Pesticides	Total	Toxaphene	0-3 ft	N/A	ug/kg	1,000,000	37	37	-	4.80	2,900	0	43.0	2,900	0
Soil	PCB Aroclors	Total	Aroclor 1016	0-1 ft	N/A	ug/kg	371	58	58	-	1.08	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1016	0-3 ft	N/A	ug/kg	371	73	73	-	1.08	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1221	0-1 ft	N/A	ug/kg	371	58	58	-	2.10	11.0	0	9.82	100	0
Soil	PCB Aroclors	Total	Aroclor 1221	0-3 ft	N/A	ug/kg	371	73	73	-	2.10	11.0	0	9.82	100	0
Soil	PCB Aroclors	Total	Aroclor 1232	0-1 ft	N/A	ug/kg	371	58	58	-	2.10	11.0	0	6.30	50.0	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	PCB Aroclors	Total	Aroclor 1232	0-3 ft	N/A	ug/kg	371	73	73	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1242	0-1 ft	N/A	ug/kg	371	58	58	-	1.97	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1242	0-3 ft	N/A	ug/kg	371	73	73	-	1.97	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1248	0-1 ft	N/A	ug/kg	371	58	58	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1248	0-3 ft	N/A	ug/kg	371	73	73	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1254	0-1 ft	N/A	ug/kg	371	58	52	-	1.53	2.10	0	6.30	13.0	0
Soil	PCB Aroclors	Total	Aroclor 1254	0-3 ft	N/A	ug/kg	371	73	63	-	1.53	2.10	0	6.30	13.2	0
Soil	PCB Aroclors	Total	Aroclor 1260	0-1 ft	N/A	ug/kg	371	58	6	15	1.54	2.10	0	9.82	13.4	0
Soil	PCB Aroclors	Total	Aroclor 1260	0-3 ft	N/A	ug/kg	371	73	12	19	1.54	2.10	0	9.82	13.4	0
Soil	PCB Aroclors	Total	Aroclor 1262	0-1 ft	N/A	ug/kg	371	13	13	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1262	0-3 ft	N/A	ug/kg	371	18	18	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1268	0-1 ft	N/A	ug/kg	371	13	13	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Aroclor 1268	0-3 ft	N/A	ug/kg	371	18	18	-	2.10	11.0	0	6.30	50.0	0
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	N/A	ug/kg	371	58	6	-	3.08	4.20	0	19.7	20.6	0
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-3 ft	N/A	ug/kg	371	73	12	-	3.08	4.20	0	19.7	26.4	0
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	N/A	mg/kg	NV	57	7	13	5.02	13.6	-	24.9	36.0	-
Soil	NWTPH-Dx	Total	Diesel Range Organics	0-3 ft	N/A	mg/kg	NV	74	11	21	5.02	14.9	-	24.9	36.0	-
Soil	NWTPH-Dx	Total	Residual Range Organics	0-1 ft	N/A	mg/kg	NV	57	5	6	10.0	26.9	-	49.9	140	-
Soil	NWTPH-Dx	Total	Residual Range Organics	0-3 ft	N/A	mg/kg	NV	74	8	14	10.0	29.7	-	49.9	140	-
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	N/A	mg/kg	NV	36	28	8	0.121	4.68	-	2.60	5.20	-
Soil	NWTPH-Gx	Total	Gasoline Range Organics	0-3 ft	N/A	mg/kg	NV	44	34	8	0.121	5.00	-	2.60	5.20	-
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	N/A	ug/kg	20,000	31	31	-	0.880	75.0	0	5.18	340	0
Soil	SVOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	N/A	ug/kg	20,000	39	39	-	0.880	75.0	0	5.18	340	0
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-1 ft	N/A	ug/kg	2,260	31	31	-	0.703	65.0	0	5.18	340	0
Soil	SVOCs	Total	1,2-Dichlorobenzene	0-3 ft	N/A	ug/kg	2,260	39	39	-	0.703	65.0	0	5.18	340	0
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-1 ft	N/A	ug/kg	2,260	31	31	-	0.883	80.0	0	5.18	340	0
Soil	SVOCs	Total	1,3-Dichlorobenzene	0-3 ft	N/A	ug/kg	2,260	39	39	-	0.883	80.0	0	5.18	340	0
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	20,000	31	31	-	0.871	95.0	0	5.18	340	0
Soil	SVOCs	Total	1,4-Dichlorobenzene	0-3 ft	N/A	ug/kg	20,000	39	39	-	0.871	95.0	0	5.18	340	0
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-1 ft	N/A	ug/kg	4,000	31	31	-	0.804	150	0	5.18	340	0
Soil	SVOCs	Total	2,4,5-Trichlorophenol	0-3 ft	N/A	ug/kg	4,000	39	39	-	0.804	150	0	5.18	340	0
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-1 ft	N/A	ug/kg	10,000	31	31	-	0.819	90.0	0	5.18	340	0
Soil	SVOCs	Total	2,4,6-Trichlorophenol	0-3 ft	N/A	ug/kg	10,000	39	39	-	0.819	90.0	0	5.18	340	0
Soil	SVOCs	Total	2,4-Dichlorophenol	0-1 ft	N/A	ug/kg	20,000	31	31	-	0.919	90.0	0	5.18	340	0
Soil	SVOCs	Total	2,4-Dichlorophenol	0-3 ft	N/A	ug/kg	20,000	39	39	-	0.919	90.0	0	5.18	340	0
Soil	SVOCs	Total	2,4-Dimethylphenol	0-1 ft	N/A	ug/kg	20,000	31	31	-	0.793	280	0	2.07	1,700	0
Soil	SVOCs	Total	2,4-Dimethylphenol	0-3 ft	N/A	ug/kg	20,000	39	39	-	0.793	280	0	2.07	1,700	0
Soil	SVOCs	Total	2,4-Dinitrophenol	0-1 ft	N/A	ug/kg	20,000	31	31	-	2.81	1,800	0	29.3	6,700	0
Soil	SVOCs	Total	2,4-Dinitrophenol	0-3 ft	N/A	ug/kg	20,000	39	39	-	2.81	1,800	0	29.3	6,700	0
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-1 ft	N/A	ug/kg	NV	31	31	-	1.52	140	-	6.40	340	-
Soil	SVOCs	Total	2,4-Dinitrotoluene	0-3 ft	N/A	ug/kg	NV	39	39	-	1.52	140	-	6.40	340	-
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-1 ft	N/A	ug/kg	NV	31	31	-	1.11	140	-	5.18	340	-
Soil	SVOCs	Total	2,6-Dinitrotoluene	0-3 ft	N/A	ug/kg	NV	39	39	-	1.11	140	-	5.18	340	-
Soil	SVOCs	Total	2-Chloronaphthalene	0-1 ft	N/A	ug/kg	NV	31	31	-	0.351	180	-	1.17	340	-
Soil	SVOCs	Total	2-Chloronaphthalene	0-3 ft	N/A	ug/kg	NV	39	39	-	0.351	180	-	1.17	340	-
Soil	SVOCs	Total	2-Chlorophenol	0-1 ft	N/A	ug/kg	60,000	31	31	-	0.697	85.0	0	5.18	340	0
Soil	SVOCs	Total	2-Chlorophenol	0-3 ft	N/A	ug/kg	60,000	39	39	-	0.697	85.0	0	5.18	340	0
Soil	SVOCs	Total	2-Methylphenol	0-1 ft	N/A	ug/kg	50,000	31	31	-	0.978	170	0	5.18	340	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(4 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	SVOCs	Total	2-Methylphenol	0-3 ft	N/A	ug/kg	50,000	39	39	-	0.978	170	0	5.18	340	0
Soil	SVOCs	Total	2-Nitroaniline	0-1 ft	N/A	ug/kg	NV	31	31	-	0.563	140	-	2.07	670	-
Soil	SVOCs	Total	2-Nitroaniline	0-3 ft	N/A	ug/kg	NV	39	39	-	0.563	140	-	2.07	670	-
Soil	SVOCs	Total	2-Nitrophenol	0-1 ft	N/A	ug/kg	NV	31	31	-	1.18	130	-	5.18	340	-
Soil	SVOCs	Total	2-Nitrophenol	0-3 ft	N/A	ug/kg	NV	39	39	-	1.18	130	-	5.18	340	-
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-1 ft	N/A	ug/kg	NV	31	31	-	1.29	190	-	11.7	3,400	-
Soil	SVOCs	Total	3,3'-Dichlorobenzidine	0-3 ft	N/A	ug/kg	NV	39	39	-	1.29	190	-	11.7	3,400	-
Soil	SVOCs	Total	3-Nitroaniline	0-1 ft	N/A	ug/kg	70,000	31	31	-	1.99	130	0	10.4	670	0
Soil	SVOCs	Total	3-Nitroaniline	0-3 ft	N/A	ug/kg	70,000	39	39	-	1.99	130	0	10.4	670	0
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-1 ft	N/A	ug/kg	NV	31	31	-	1.51	85.0	-	10.4	3,400	-
Soil	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-3 ft	N/A	ug/kg	NV	39	39	-	1.51	85.0	-	10.4	3,400	-
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-1 ft	N/A	ug/kg	NV	31	31	-	1.40	70.0	-	6.40	340	-
Soil	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-3 ft	N/A	ug/kg	NV	39	39	-	1.40	70.0	-	6.40	340	-
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-1 ft	N/A	ug/kg	NV	31	31	-	0.925	110	-	5.18	340	-
Soil	SVOCs	Total	4-Chloro-3-methylphenol	0-3 ft	N/A	ug/kg	NV	39	39	-	0.925	110	-	5.18	340	-
Soil	SVOCs	Total	4-Chloroaniline	0-1 ft	N/A	ug/kg	40,000	31	31	-	0.963	110	0	6.40	340	0
Soil	SVOCs	Total	4-Chloroaniline	0-3 ft	N/A	ug/kg	40,000	39	39	-	0.963	110	0	6.40	340	0
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-1 ft	N/A	ug/kg	NV	31	31	-	1.97	100	-	6.40	340	-
Soil	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-3 ft	N/A	ug/kg	NV	39	39	-	1.97	100	-	6.40	340	-
Soil	SVOCs	Total	4-Nitroaniline	0-1 ft	N/A	ug/kg	40,000	31	31	-	1.99	170	0	11.7	670	0
Soil	SVOCs	Total	4-Nitroaniline	0-3 ft	N/A	ug/kg	40,000	39	39	-	1.99	170	0	11.7	670	0
Soil	SVOCs	Total	4-Nitrophenol	0-1 ft	N/A	ug/kg	7,000	31	31	-	2.22	1,500	0	29.3	3,400	0
Soil	SVOCs	Total	4-Nitrophenol	0-3 ft	N/A	ug/kg	7,000	39	39	-	2.22	1,500	0	29.3	3,400	0
Soil	SVOCs	Total	Aniline	0-1 ft	N/A	ug/kg	200,000	31	31	-	1.50	75.0	0	10.4	670	0
Soil	SVOCs	Total	Aniline	0-3 ft	N/A	ug/kg	200,000	39	39	-	1.50	75.0	0	10.4	670	0
Soil	SVOCs	Total	Benzidine	0-1 ft	N/A	ug/kg	NV	18	18	-	2.21	31.8	-	10.4	366	-
Soil	SVOCs	Total	Benzidine	0-3 ft	N/A	ug/kg	NV	21	21	-	2.21	31.8	-	10.4	366	-
Soil	SVOCs	Total	Benzoic Acid	0-1 ft	N/A	ug/kg	200,000	31	19	9	4.15	4,800	0	58.5	6,700	0
Soil	SVOCs	Total	Benzoic Acid	0-3 ft	N/A	ug/kg	200,000	39	27	9	4.15	4,800	0	58.5	6,700	0
Soil	SVOCs	Total	Benzyl Alcohol	0-1 ft	N/A	ug/kg	2,260	31	30	-	2.06	190	0	5.18	670	0
Soil	SVOCs	Total	Benzyl Alcohol	0-3 ft	N/A	ug/kg	2,260	39	38	-	2.06	190	0	5.18	670	0
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-1 ft	N/A	ug/kg	730,000	31	31	-	1.30	65.0	0	6.40	340	0
Soil	SVOCs	Total	Bis(2-chloroethoxy)methane	0-3 ft	N/A	ug/kg	730,000	39	39	-	1.30	65.0	0	6.40	340	0
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-1 ft	N/A	ug/kg	NV	31	31	-	1.63	120	-	6.40	340	-
Soil	SVOCs	Total	Bis(2-chloroethyl) Ether	0-3 ft	N/A	ug/kg	NV	39	39	-	1.63	120	-	6.40	340	-
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-1 ft	N/A	ug/kg	NV	31	31	-	1.20	90.1	-	6.40	340	-
Soil	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-3 ft	N/A	ug/kg	NV	39	39	-	1.20	90.1	-	6.40	340	-
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-1 ft	N/A	ug/kg	4,500	31	10	-	1.90	366	0	20.7	366	0
Soil	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	0-3 ft	N/A	ug/kg	4,500	40	11	2	1.90	366	0	20.7	366	0
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	N/A	ug/kg	450	31	26	4	1.50	75.0	0	6.40	340	0
Soil	SVOCs	Total	Butyl Benzyl Phthalate	0-3 ft	N/A	ug/kg	450	39	33	4	1.50	75.0	0	6.40	340	0
Soil	SVOCs	Total	Carbazole	0-1 ft	N/A	ug/kg	2,260	31	11	8	2.06	57.1	0	6.40	375	0
Soil	SVOCs	Total	Carbazole	0-3 ft	N/A	ug/kg	2,260	39	15	10	1.30	57.1	0	6.40	375	0
Soil	SVOCs	Total	Dibenzofuran	0-1 ft	N/A	ug/kg	2	31	12	16	0.479	65.0	3	5.18	340	28
Soil	SVOCs	Total	Dibenzofuran	0-3 ft	N/A	ug/kg	2	40	16	19	0.479	65.0	3	5.18	340	35
Soil	SVOCs	Total	Diethyl Phthalate	0-1 ft	N/A	ug/kg	100,000	31	30	1	1.99	180	0	6.40	340	0
Soil	SVOCs	Total	Diethyl Phthalate	0-3 ft	N/A	ug/kg	100,000	39	38	1	1.99	180	0	6.40	340	0
Soil	SVOCs	Total	Dimethyl Phthalate	0-1 ft	N/A	ug/kg	200,000	31	28	3	1.29	90.0	0	6.40	340	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	SVOCs	Total	Dimethyl Phthalate	0-3 ft	N/A	ug/kg	200,000	39	36	3	1.29	90.0	0	6.40	340	0
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	N/A	ug/kg	450	31	21	5	1.89	637	1	6.40	732	2
Soil	SVOCs	Total	Di-n-butyl Phthalate	0-3 ft	N/A	ug/kg	450	39	25	6	1.89	637	1	6.40	732	2
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	N/A	ug/kg	450	31	26	2	1.20	60.0	0	6.40	340	0
Soil	SVOCs	Total	Di-n-octyl Phthalate	0-3 ft	N/A	ug/kg	450	39	33	3	1.20	60.0	0	6.40	340	0
Soil	SVOCs	Total	Hexachlorobenzene	0-1 ft	N/A	ug/kg	1,000,000	31	31	-	0.548	110	0	2.07	340	0
Soil	SVOCs	Total	Hexachlorobenzene	0-3 ft	N/A	ug/kg	1,000,000	39	39	-	0.548	110	0	2.07	340	0
Soil	SVOCs	Total	Hexachlorobutadiene	0-1 ft	N/A	ug/kg	NV	31	31	-	0.757	70.0	-	5.18	340	-
Soil	SVOCs	Total	Hexachlorobutadiene	0-3 ft	N/A	ug/kg	NV	39	39	-	0.757	70.0	-	5.18	340	-
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-1 ft	N/A	ug/kg	10,000	31	31	-	0.822	750	0	5.18	1,700	0
Soil	SVOCs	Total	Hexachlorocyclopentadiene	0-3 ft	N/A	ug/kg	10,000	39	39	-	0.822	750	0	5.18	1,700	0
Soil	SVOCs	Total	Hexachloroethane	0-1 ft	N/A	ug/kg	NV	31	31	-	1.75	110	-	5.18	340	-
Soil	SVOCs	Total	Hexachloroethane	0-3 ft	N/A	ug/kg	NV	39	39	-	1.75	110	-	5.18	340	-
Soil	SVOCs	Total	Isophorone	0-1 ft	N/A	ug/kg	NV	31	31	-	0.522	80.0	-	6.40	340	-
Soil	SVOCs	Total	Isophorone	0-3 ft	N/A	ug/kg	NV	39	39	-	0.522	80.0	-	6.40	340	-
Soil	SVOCs	Total	Nitrobenzene	0-1 ft	N/A	ug/kg	8,000	31	31	-	1.60	100	0	6.40	340	0
Soil	SVOCs	Total	Nitrobenzene	0-3 ft	N/A	ug/kg	8,000	39	39	-	1.60	100	0	6.40	340	0
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-1 ft	N/A	ug/kg	NV	31	31	-	1.05	310	-	10.4	1,700	-
Soil	SVOCs	Total	N-Nitrosodimethylamine	0-3 ft	N/A	ug/kg	NV	39	39	-	1.05	310	-	10.4	1,700	-
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-1 ft	N/A	ug/kg	NV	31	31	-	1.29	160	-	5.18	340	-
Soil	SVOCs	Total	N-Nitrosodi-n-propylamine	0-3 ft	N/A	ug/kg	NV	39	39	-	1.29	160	-	5.18	340	-
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-1 ft	N/A	ug/kg	20,000	31	30	1	0.593	110	0	2.07	340	0
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-3 ft	N/A	ug/kg	20,000	39	38	1	0.593	110	0	2.07	340	0
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	N/A	ug/kg	50,000	31	30	1	1.22	150	0	5.18	340	0
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-3 ft	N/A	ug/kg	50,000	39	38	1	1.22	150	0	5.18	340	0
Soil	SVOCs	Total	Pentachlorophenol	0-1 ft	N/A	ug/kg	2,100	31	29	2	2.01	430	0	10.4	3,400	1
Soil	SVOCs	Total	Pentachlorophenol	0-3 ft	N/A	ug/kg	2,100	39	37	2	2.01	430	0	10.4	3,400	1
Soil	SVOCs	Total	Phenol	0-1 ft	N/A	ug/kg	30,000	31	29	2	0.749	95.0	0	5.18	1,000	0
Soil	SVOCs	Total	Phenol	0-3 ft	N/A	ug/kg	30,000	39	34	4	0.749	95.0	0	5.18	1,000	0
Soil	SVOCs	Total	2-Methylnaphthalene	0-1 ft	N/A	ug/kg	NV (1)	31	15	9	0.183	60.0	0	1.17	340	0
Soil	SVOCs	Total	2-Methylnaphthalene	0-3 ft	N/A	ug/kg	NV (1)	40	22	10	0.183	60.0	0	1.17	340	0
Soil	SVOCs	Total	Acenaphthene	0-1 ft	N/A	ug/kg	NV (1)	31	6	6	0.531	1.00	0	1.23	340	0
Soil	SVOCs	Total	Acenaphthene	0-3 ft	N/A	ug/kg	NV (1)	40	9	9	0.531	1.00	0	1.23	340	0
Soil	SVOCs	Total	Acenaphthylene	0-1 ft	N/A	ug/kg	NV (1)	31	17	8	0.510	70.0	0	1.17	340	0
Soil	SVOCs	Total	Acenaphthylene	0-3 ft	N/A	ug/kg	NV (1)	40	24	8	0.510	70.0	0	1.17	340	0
Soil	SVOCs	Total	Anthracene	0-1 ft	N/A	ug/kg	NV (1)	31	2	4	0.356	0.394	0	1.41	340	0
Soil	SVOCs	Total	Anthracene	0-3 ft	N/A	ug/kg	NV (1)	40	5	5	0.356	1.40	0	1.41	340	0
Soil	SVOCs	Total	Fluorene	0-1 ft	N/A	ug/kg	NV (1)	31	8	3	0.573	85.0	0	1.23	340	0
Soil	SVOCs	Total	Fluorene	0-3 ft	N/A	ug/kg	NV (1)	40	12	5	0.573	85.0	0	1.23	340	0
Soil	SVOCs	Total	Phenanthrene	0-3 ft	N/A	ug/kg	NV (1)	40	2	1	0.750	1.30	0	2.50	6.50	0
Soil	SVOCs	Total	Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	N/A	ug/kg	29,000	40	2	-	4.56	8.10	0	15.1	39.0	0
Soil	SVOCs	Total	Benzo(a)anthracene	0-1 ft	N/A	ug/kg	NV (2)	31	2	-	0.749	1.05	0	2.07	2.45	0
Soil	SVOCs	Total	Benzo(a)anthracene	0-3 ft	N/A	ug/kg	NV (2)	40	5	-	0.749	1.40	0	2.07	6.50	0
Soil	SVOCs	Total	Benzo(a)pyrene	0-1 ft	N/A	ug/kg	NV (2)	31	1	-	0.656	0.656	0	2.07	2.07	0
Soil	SVOCs	Total	Benzo(a)pyrene	0-3 ft	N/A	ug/kg	NV (2)	40	4	-	0.656	1.60	0	2.07	6.50	0
Soil	SVOCs	Total	Benzo(b)fluoranthene	0-3 ft	N/A	ug/kg	NV (2)	18	1	-	2.50	2.50	0	6.50	6.50	0
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-1 ft	N/A	ug/kg	NV (2)	31	5	-	0.202	0.498	0	1.23	2.07	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(6 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	SVOCs	Total	Benzo(g,h,i)perylene	0-3 ft	N/A	ug/kg	NV (2)	40	7	-	0.202	2.30	0	1.23	6.50	0
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-1 ft	N/A	ug/kg	NV (2)	13	0	1	-	-	0	10.0	10.0	0
Soil	SVOCs	Total	Benzo(k)fluoranthene	0-3 ft	N/A	ug/kg	NV (2)	18	1	1	2.50	2.50	0	6.50	10.0	0
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-1 ft	N/A	ug/kg	NV (2)	18	1	-	0.939	0.939	0	4.14	4.14	0
Soil	SVOCs	Total	Benzofluoranthenes, Total	0-3 ft	N/A	ug/kg	NV (2)	22	2	-	0.939	1.14	0	4.14	5.05	0
Soil	SVOCs	Total	Chrysene	0-1 ft	N/A	ug/kg	NV (2)	31	1	-	0.741	0.741	0	2.07	2.07	0
Soil	SVOCs	Total	Chrysene	0-3 ft	N/A	ug/kg	NV (2)	40	3	1	0.741	0.903	0	2.07	6.50	0
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	N/A	ug/kg	NV (2)	31	11	3	0.273	3.41	0	1.17	340	0
Soil	SVOCs	Total	Dibenz(a,h)anthracene	0-3 ft	N/A	ug/kg	NV (2)	40	14	4	0.273	3.41	0	1.17	340	0
Soil	SVOCs	Total	Fluoranthene	0-1 ft	N/A	ug/kg	NV (2)	31	1	-	1.05	1.05	0	2.07	2.07	0
Soil	SVOCs	Total	Fluoranthene	0-3 ft	N/A	ug/kg	NV (2)	40	3	-	1.05	2.20	0	2.07	6.50	0
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-1 ft	N/A	ug/kg	NV (2)	31	3	-	0.286	0.472	0	1.23	2.07	0
Soil	SVOCs	Total	Indeno(1,2,3-cd)pyrene	0-3 ft	N/A	ug/kg	NV (2)	40	5	-	0.286	1.90	0	1.23	6.50	0
Soil	SVOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	NV (2)	31	12	9	0.548	65.0	0	1.17	340	0
Soil	SVOCs	Total	Naphthalene	0-3 ft	N/A	ug/kg	NV (2)	40	16	13	0.548	65.0	0	1.17	340	0
Soil	SVOCs	Total	Pyrene	0-1 ft	N/A	ug/kg	NV (2)	31	1	-	0.352	0.352	0	2.07	2.07	0
Soil	SVOCs	Total	Pyrene	0-3 ft	N/A	ug/kg	NV (2)	40	2	1	0.352	0.429	0	2.07	6.50	0
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	N/A	ug/kg	1,100	31	1	-	5.46	5.46	0	16.6	16.6	0
Soil	SVOCs	Total	Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	N/A	ug/kg	1,100	40	2	-	5.46	6.66	0	16.6	20.2	0
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0443	9.40	-	1.13	67.0	-
Soil	VOCs	Total	1,1,1,2-Tetrachloroethane	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0443	1,200	-	1.13	6,200	-
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	N/A	ug/kg	55,550,000	37	35	2	0.0650	4.30	0	1.13	27.0	0
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-3 ft	N/A	ug/kg	55,550,000	46	44	2	0.0650	1,800	0	1.13	6,200	0
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0638	7.40	-	1.13	27.0	-
Soil	VOCs	Total	1,1,2,2-Tetrachloroethane	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0638	2,500	-	1.13	6,200	-
Soil	VOCs	Total	1,1,2-Trichloroethane	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0880	7.90	-	1.13	27.0	-
Soil	VOCs	Total	1,1,2-Trichloroethane	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0880	2,500	-	1.13	6,200	-
Soil	VOCs	Total	1,1-Dichloroethane	0-1 ft	N/A	ug/kg	70,000	37	36	1	0.0480	9.30	0	1.13	27.0	0
Soil	VOCs	Total	1,1-Dichloroethane	0-3 ft	N/A	ug/kg	70,000	46	45	1	0.0480	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,1-Dichloroethene	0-1 ft	N/A	ug/kg	3,750,000	37	37	-	0.0700	7.30	0	1.13	27.0	0
Soil	VOCs	Total	1,1-Dichloroethene	0-3 ft	N/A	ug/kg	3,750,000	46	46	-	0.0700	3,000	0	1.13	6,200	0
Soil	VOCs	Total	1,1-Dichloropropene	0-1 ft	N/A	ug/kg	NV	37	37	-	0.150	9.40	-	1.13	67.0	-
Soil	VOCs	Total	1,1-Dichloropropene	0-3 ft	N/A	ug/kg	NV	46	46	-	0.150	2,500	-	1.13	6,200	-
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-1 ft	N/A	ug/kg	20,000	37	37	-	0.108	12.0	0	1.13	270	0
Soil	VOCs	Total	1,2,3-Trichlorobenzene	0-3 ft	N/A	ug/kg	20,000	46	46	-	0.108	2,800	0	1.13	6,200	0
Soil	VOCs	Total	1,2,3-Trichloropropane	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0756	17.0	-	1.13	27.0	-
Soil	VOCs	Total	1,2,3-Trichloropropane	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0756	2,800	-	1.13	6,200	-
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	N/A	ug/kg	20,000	37	37	-	0.110	6.50	0	1.13	67.0	0
Soil	VOCs	Total	1,2,4-Trichlorobenzene	0-3 ft	N/A	ug/kg	20,000	46	46	-	0.110	1,800	0	1.13	6,200	0
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	N/A	ug/kg	200,000	37	22	15	0.0478	3.70	0	1.13	67.0	0
Soil	VOCs	Total	1,2,4-Trimethylbenzene	0-3 ft	N/A	ug/kg	200,000	46	25	18	0.0478	3.70	0	1.13	67.0	0
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-1 ft	N/A	ug/kg	NV	37	37	-	0.135	140	-	1.13	270	-
Soil	VOCs	Total	1,2-Dibromo-3-chloropropane	0-3 ft	N/A	ug/kg	NV	46	46	-	0.135	3,800	-	1.13	12,000	-
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0575	6.90	-	1.13	27.0	-
Soil	VOCs	Total	1,2-Dibromoethane (EDB)	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0575	1,800	-	1.13	6,200	-
Soil	VOCs	Total	1,2-Dichlorobenzene	0-1 ft	N/A	ug/kg	2,260	37	37	-	0.0575	6.60	0	1.13	27.0	0
Soil	VOCs	Total	1,2-Dichlorobenzene	0-3 ft	N/A	ug/kg	2,260	46	46	-	0.0575	2,500	1	1.13	6,200	1

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(7 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-1 ft	N/A	ug/kg	70,000	37	37	-	0.0540	9.70	0	1.13	27.0	0
Soil	VOCs	Total	1,2-Dichloroethane (EDC)	0-3 ft	N/A	ug/kg	70,000	46	46	-	0.0540	1,800	0	1.13	6,200	0
Soil	VOCs	Total	1,2-Dichloropropane	0-1 ft	N/A	ug/kg	700,000	37	37	-	0.0428	11.0	0	1.13	27.0	0
Soil	VOCs	Total	1,2-Dichloropropane	0-3 ft	N/A	ug/kg	700,000	46	46	-	0.0428	2,500	0	1.13	6,200	0
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	N/A	ug/kg	200,000	37	32	5	0.0400	6.50	0	1.13	67.0	0
Soil	VOCs	Total	1,3,5-Trimethylbenzene	0-3 ft	N/A	ug/kg	200,000	46	38	6	0.0400	6.50	0	1.13	67.0	0
Soil	VOCs	Total	1,3-Dichlorobenzene	0-1 ft	N/A	ug/kg	2,260	37	37	-	0.0391	6.10	0	1.13	27.0	0
Soil	VOCs	Total	1,3-Dichlorobenzene	0-3 ft	N/A	ug/kg	2,260	46	46	-	0.0391	1,800	0	1.13	6,200	1
Soil	VOCs	Total	1,3-Dichloropropane	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0590	5.30	-	1.13	67.0	-
Soil	VOCs	Total	1,3-Dichloropropane	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0590	2,500	-	1.13	6,200	-
Soil	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	20,000	37	36	1	0.0551	5.70	0	1.13	27.0	0
Soil	VOCs	Total	1,4-Dichlorobenzene	0-3 ft	N/A	ug/kg	20,000	46	44	2	0.0551	2,500	0	1.13	6,200	0
Soil	VOCs	Total	2,2-Dichloropropane	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0763	9.50	-	1.13	67.0	-
Soil	VOCs	Total	2,2-Dichloropropane	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0763	1,500	-	1.13	6,200	-
Soil	VOCs	Total	2-Butanone (MEK)	0-1 ft	N/A	ug/kg	200,000,000	37	21	10	1.60	290	0	8.89	540	0
Soil	VOCs	Total	2-Butanone (MEK)	0-3 ft	N/A	ug/kg	200,000,000	46	27	13	1.60	12,000	0	7.08	31,000	0
Soil	VOCs	Total	2-Chlorotoluene	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0490	4.90	-	1.13	270	-
Soil	VOCs	Total	2-Chlorotoluene	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0490	1,800	-	1.13	6,200	-
Soil	VOCs	Total	2-Hexanone	0-1 ft	N/A	ug/kg	1,250,000	37	34	3	0.780	170	0	5.66	2,700	0
Soil	VOCs	Total	2-Hexanone	0-3 ft	N/A	ug/kg	1,250,000	46	43	3	0.780	7,500	0	5.66	31,000	0
Soil	VOCs	Total	4-Chlorotoluene	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0920	5.50	-	1.13	270	-
Soil	VOCs	Total	4-Chlorotoluene	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0920	1,800	-	1.13	6,200	-
Soil	VOCs	Total	4-Isopropyltoluene	0-1 ft	N/A	ug/kg	200,000	37	23	13	0.0766	6.10	0	1.37	270	0
Soil	VOCs	Total	4-Isopropyltoluene	0-3 ft	N/A	ug/kg	200,000	46	29	15	0.0766	1,800	0	1.37	6,200	0
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	N/A	ug/kg	1,250,000	37	28	9	0.240	460	0	5.66	2,700	0
Soil	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-3 ft	N/A	ug/kg	1,250,000	46	37	9	0.240	10,000	0	5.66	31,000	0
Soil	VOCs	Total	Acetone	0-1 ft	N/A	ug/kg	1,250,000	37	19	1	15.0	389	0	19.0	810	0
Soil	VOCs	Total	Acetone	0-3 ft	N/A	ug/kg	1,250,000	46	23	4	15.0	10,000	0	19.0	31,000	0
Soil	VOCs	Total	Benzene	0-1 ft	N/A	ug/kg	3,300,000	37	22	15	0.220	5.70	0	1.13	27.0	0
Soil	VOCs	Total	Benzene	0-3 ft	N/A	ug/kg	3,300,000	46	29	17	0.140	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Bromobenzene	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0450	8.20	-	1.13	270	-
Soil	VOCs	Total	Bromobenzene	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0450	1,800	-	1.13	6,200	-
Soil	VOCs	Total	Bromochloromethane	0-1 ft	N/A	ug/kg	730,000	37	37	-	0.0519	9.40	0	1.13	67.0	0
Soil	VOCs	Total	Bromochloromethane	0-3 ft	N/A	ug/kg	730,000	46	46	-	0.0519	1,900	0	1.13	6,200	0
Soil	VOCs	Total	Bromodichloromethane	0-1 ft	N/A	ug/kg	730,000	37	37	-	0.0440	6.20	0	1.13	67.0	0
Soil	VOCs	Total	Bromodichloromethane	0-3 ft	N/A	ug/kg	730,000	46	46	-	0.0440	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Bromoform	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0701	13.0	-	1.13	67.0	-
Soil	VOCs	Total	Bromoform	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0701	2,500	-	1.13	6,200	-
Soil	VOCs	Total	Bromomethane	0-1 ft	N/A	ug/kg	730,000	37	30	7	0.397	29.0	0	1.13	67.0	0
Soil	VOCs	Total	Bromomethane	0-3 ft	N/A	ug/kg	730,000	46	38	8	0.397	6,200	0	1.13	12,000	0
Soil	VOCs	Total	Carbon Disulfide	0-1 ft	N/A	ug/kg	1,000,000	37	18	18	0.313	7.40	0	1.13	27.0	0
Soil	VOCs	Total	Carbon Disulfide	0-3 ft	N/A	ug/kg	1,000,000	46	22	23	0.313	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Carbon Tetrachloride	0-1 ft	N/A	ug/kg	1,000,000	37	37	-	0.0780	11.0	0	1.13	27.0	0
Soil	VOCs	Total	Carbon Tetrachloride	0-3 ft	N/A	ug/kg	1,000,000	46	46	-	0.0780	1,500	0	1.13	6,200	0
Soil	VOCs	Total	Chlorobenzene	0-1 ft	N/A	ug/kg	40,000	37	37	-	0.0503	6.60	0	1.13	27.0	0
Soil	VOCs	Total	Chlorobenzene	0-3 ft	N/A	ug/kg	40,000	46	46	-	0.0503	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Chloroethane	0-1 ft	N/A	ug/kg	NV	37	37	-	0.300	24.0	-	1.13	67.0	-
Soil	VOCs	Total	Chloroethane	0-3 ft	N/A	ug/kg	NV	46	46	-	0.300	6,200	-	1.13	12,000	-

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	VOCs	Total	Chloroform	0-1 ft	N/A	ug/kg	1,875,000	37	34	3	0.0480	1.00	0	1.13	41.0	0
Soil	VOCs	Total	Chloroform	0-3 ft	N/A	ug/kg	1,875,000	46	43	3	0.0480	1,800	0	1.13	6,200	0
Soil	VOCs	Total	Chloromethane	0-1 ft	N/A	ug/kg	730,000	37	35	2	0.0570	8.70	0	1.13	67.0	0
Soil	VOCs	Total	Chloromethane	0-3 ft	N/A	ug/kg	730,000	46	44	2	0.0570	5,000	0	1.13	12,000	0
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	2,500,000	37	36	1	0.0810	2.00	0	1.13	27.0	0
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-3 ft	N/A	ug/kg	2,500,000	46	44	1	0.0810	2,500	0	1.13	6,200	0
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0310	8.30	-	1.13	67.0	-
Soil	VOCs	Total	cis-1,3-Dichloropropene	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0310	2,500	-	1.13	6,200	-
Soil	VOCs	Total	Dibromochloromethane	0-1 ft	N/A	ug/kg	730,000	37	37	-	0.0730	9.10	0	1.13	67.0	0
Soil	VOCs	Total	Dibromochloromethane	0-3 ft	N/A	ug/kg	730,000	46	46	-	0.0730	2,500	0	1.13	6,200	0
Soil	VOCs	Total	Dibromomethane	0-1 ft	N/A	ug/kg	730,000	37	37	-	0.0734	18.0	0	1.13	27.0	0
Soil	VOCs	Total	Dibromomethane	0-3 ft	N/A	ug/kg	730,000	46	46	-	0.0734	2,800	0	1.13	6,200	0
Soil	VOCs	Total	Dichlorodifluoromethane	0-1 ft	N/A	ug/kg	730,000	37	33	2	0.0463	1.00	0	1.13	10.0	0
Soil	VOCs	Total	Dichlorodifluoromethane	0-3 ft	N/A	ug/kg	730,000	46	42	2	0.0463	4,200	0	1.13	12,000	0
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	N/A	ug/kg	730,000	37	25	11	0.140	5.38	0	1.47	14.0	0
Soil	VOCs	Total	Dichloromethane (Methylene Chloride)	0-3 ft	N/A	ug/kg	730,000	46	29	16	0.140	1,200	0	1.47	6,200	0
Soil	VOCs	Total	Ethylbenzene	0-1 ft	N/A	ug/kg	2,260	37	29	8	0.0410	6.10	0	1.13	27.0	0
Soil	VOCs	Total	Ethylbenzene	0-3 ft	N/A	ug/kg	2,260	46	36	9	0.0410	1,800	0	1.13	6,200	1
Soil	VOCs	Total	Hexachlorobutadiene	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0664	15.0	-	1.13	67.0	-
Soil	VOCs	Total	Hexachlorobutadiene	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0664	1,800	-	1.13	6,200	-
Soil	VOCs	Total	Isopropylbenzene	0-1 ft	N/A	ug/kg	2,260	37	37	-	0.0310	6.10	0	1.13	67.0	0
Soil	VOCs	Total	Isopropylbenzene	0-3 ft	N/A	ug/kg	2,260	46	45	-	0.0310	3,000	1	1.13	6,200	1
Soil	VOCs	Total	m,p-Xylenes	0-1 ft	N/A	ug/kg	120,000	37	29	8	0.0930	13.0	0	2.26	54.0	0
Soil	VOCs	Total	m,p-Xylenes	0-3 ft	N/A	ug/kg	120,000	46	35	9	0.0930	13.0	0	2.26	54.0	0
Soil	VOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	NV (1)	37	29	8	0.320	7.90	0	1.13	270	0
Soil	VOCs	Total	Naphthalene	0-3 ft	N/A	ug/kg	NV (1)	46	35	10	0.320	2,500	0	1.13	6,200	0
Soil	VOCs	Total	n-Butylbenzene	0-1 ft	N/A	ug/kg	NV	37	36	1	0.0880	6.50	-	1.13	270	-
Soil	VOCs	Total	n-Butylbenzene	0-3 ft	N/A	ug/kg	NV	46	45	1	0.0880	1,800	-	1.13	6,200	-
Soil	VOCs	Total	n-Propylbenzene	0-1 ft	N/A	ug/kg	2,260	37	36	1	0.0531	5.70	0	1.13	270	0
Soil	VOCs	Total	n-Propylbenzene	0-3 ft	N/A	ug/kg	2,260	46	43	2	0.0531	2,800	1	1.13	6,200	1
Soil	VOCs	Total	o-Xylene	0-1 ft	N/A	ug/kg	1,000	37	35	2	0.0411	6.90	0	1.13	27.0	0
Soil	VOCs	Total	o-Xylene	0-3 ft	N/A	ug/kg	1,000	46	41	4	0.0411	6.90	0	1.13	6,200	1
Soil	VOCs	Total	sec-Butylbenzene	0-1 ft	N/A	ug/kg	2,260	37	37	-	0.0442	6.50	0	1.13	270	0
Soil	VOCs	Total	sec-Butylbenzene	0-3 ft	N/A	ug/kg	2,260	46	44	1	0.0442	1,800	0	1.13	6,200	1
Soil	VOCs	Total	Styrene	0-1 ft	N/A	ug/kg	300,000	37	37	-	0.0403	6.10	0	1.13	27.0	0
Soil	VOCs	Total	Styrene	0-3 ft	N/A	ug/kg	300,000	46	46	-	0.0340	2,500	0	1.13	12,000	0
Soil	VOCs	Total	tert-Butylbenzene	0-1 ft	N/A	ug/kg	2,260	37	37	-	0.0273	4.30	0	1.13	270	0
Soil	VOCs	Total	tert-Butylbenzene	0-3 ft	N/A	ug/kg	2,260	46	46	-	0.0273	1,800	0	1.13	6,200	1
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	N/A	ug/kg	10,000	37	35	2	0.114	8.30	0	1.13	67.0	0
Soil	VOCs	Total	Tetrachloroethene (PCE)	0-3 ft	N/A	ug/kg	10,000	46	41	2	0.114	8.30	0	1.13	67.0	0
Soil	VOCs	Total	Toluene	0-1 ft	N/A	ug/kg	200,000	37	19	18	0.0440	6.10	0	1.13	27.0	0
Soil	VOCs	Total	Toluene	0-3 ft	N/A	ug/kg	200,000	46	20	24	0.0440	6.10	0	1.13	27.0	0
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	2,500,000	37	37	-	0.0480	9.90	0	1.13	27.0	0
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-3 ft	N/A	ug/kg	2,500,000	46	45	-	0.0480	3,000	0	1.13	6,200	0
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-1 ft	N/A	ug/kg	NV	37	37	-	0.0513	12.0	-	1.13	67.0	-
Soil	VOCs	Total	trans-1,3-Dichloropropene	0-3 ft	N/A	ug/kg	NV	46	46	-	0.0513	1,800	-	1.13	6,200	-
Soil	VOCs	Total	Trichloroethene (TCE)	0-1 ft	N/A	ug/kg	40,000	37	33	4	0.0440	13.0	0	1.13	27.0	0
Soil	VOCs	Total	Trichloroethene (TCE)	0-3 ft	N/A	ug/kg	40,000	46	39	6	0.0440	13.0	0	1.13	6,200	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	VOCs	Total	Trichlorofluoromethane	0-1 ft	N/A	ug/kg	730,000	37	37	-	0.0540	11.0	0	1.13	67.0	0
Soil	VOCs	Total	Trichlorofluoromethane	0-3 ft	N/A	ug/kg	730,000	46	46	-	0.0540	1,800	0	1.13	12,000	0
Soil	VOCs	Total	Vinyl Acetate	0-1 ft	N/A	ug/kg	NV	37	37	-	0.600	52.0	-	5.66	670	-
Soil	VOCs	Total	Vinyl Acetate	0-3 ft	N/A	ug/kg	NV	46	46	-	0.600	6,200	-	5.66	12,000	-
Soil	VOCs	Total	Vinyl Chloride	0-1 ft	N/A	ug/kg	20,000	37	37	-	0.0570	13.0	0	1.13	27.0	0
Soil	VOCs	Total	Vinyl Chloride	0-3 ft	N/A	ug/kg	20,000	46	46	-	0.0570	3,800	0	1.13	12,000	0
Erodible Soil Subset	Metals	Total	Beryllium	0-1 ft	N/A	mg/kg	21	2	0	2	-	-	0	0.740	1.23	0
Erodible Soil Subset	Metals	Total	Selenium	0-1 ft	N/A	mg/kg	0.52	2	0	2	-	-	0	1.50	2.50	2
Erodible Soil Subset	Pesticides	Total	4,4'-DDD	0-1 ft	N/A	ug/kg	21	2	2	-	0.110	0.300	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	4,4'-DDE	0-1 ft	N/A	ug/kg	21	2	0	2	-	-	0	0.660	0.710	0
Erodible Soil Subset	Pesticides	Total	Aldrin	0-1 ft	N/A	ug/kg	4.9	2	2	-	0.160	0.160	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	BHC (alpha)	0-1 ft	N/A	ug/kg	8,000	2	2	-	0.110	0.110	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	BHC (beta)	0-1 ft	N/A	ug/kg	8,000	2	2	-	0.180	0.660	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	BHC (delta)	0-1 ft	N/A	ug/kg	8,000	2	1	1	0.140	0.140	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	BHC (gamma) Lindane	0-1 ft	N/A	ug/kg	8,000	2	2	-	0.0800	1.30	0	0.630	1.30	0
Erodible Soil Subset	Pesticides	Total	Chlordane (alpha)	0-1 ft	N/A	ug/kg	9,000	2	2	-	0.100	0.100	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	Chlordane (gamma)	0-1 ft	N/A	ug/kg	9,000	2	2	-	0.630	0.660	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	Dieldrin	0-1 ft	N/A	ug/kg	4.9	2	2	-	0.140	0.810	0	0.630	0.810	0
Erodible Soil Subset	Pesticides	Total	Endosulfan I	0-1 ft	N/A	ug/kg	20,000	2	2	-	0.110	0.660	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	Endosulfan II	0-1 ft	N/A	ug/kg	20,000	2	1	1	0.140	0.140	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	Endosulfan Sulfate	0-1 ft	N/A	ug/kg	20,000	2	1	-	0.110	0.110	0	0.630	0.630	0
Erodible Soil Subset	Pesticides	Total	Endrin Aldehyde	0-1 ft	N/A	ug/kg	4.9	2	2	-	0.630	0.700	0	0.630	0.700	0
Erodible Soil Subset	Pesticides	Total	Endrin Ketone	0-1 ft	N/A	ug/kg	4.9	2	2	-	0.630	2.90	0	0.630	2.90	0
Erodible Soil Subset	Pesticides	Total	Endrin	0-1 ft	N/A	ug/kg	4.9	2	2	-	0.0940	0.660	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	Heptachlor Epoxide	0-1 ft	N/A	ug/kg	15,000	2	2	-	0.0840	0.180	0	0.630	0.660	0
Erodible Soil Subset	Pesticides	Total	Heptachlor	0-1 ft	N/A	ug/kg	15,000	2	0	2	-	-	0	0.660	0.710	0
Erodible Soil Subset	Pesticides	Total	Methoxychlor	0-1 ft	N/A	ug/kg	500,000	2	2	-	0.630	1.50	0	0.630	1.50	0
Erodible Soil Subset	Pesticides	Total	Toxaphene	0-1 ft	N/A	ug/kg	1,000,000	2	2	-	43.0	190	0	43.0	190	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1016	0-1 ft	N/A	ug/kg	371	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1221	0-1 ft	N/A	ug/kg	371	2	2	-	2.10	2.10	0	13.0	14.0	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1232	0-1 ft	N/A	ug/kg	371	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1242	0-1 ft	N/A	ug/kg	371	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1248	0-1 ft	N/A	ug/kg	371	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1254	0-1 ft	N/A	ug/kg	371	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1262	0-1 ft	N/A	ug/kg	371	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	PCB Aroclors	Total	Aroclor 1268	0-1 ft	N/A	ug/kg	371	2	2	-	2.10	2.10	0	6.30	6.60	0
Erodible Soil Subset	NWTPH-Dx	Total	Diesel Range Organics	0-1 ft	N/A	mg/kg	NV	2	0	1	-	-	-	36.0	36.0	-
Erodible Soil Subset	NWTPH-Gx	Total	Gasoline Range Organics	0-1 ft	N/A	mg/kg	NV	8	4	4	1.50	1.50	-	3.30	5.00	-
Erodible Soil Subset	SVOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	N/A	ug/kg	20,000	2	2	-	38.0	75.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	1,2-Dichlorobenzene	0-1 ft	N/A	ug/kg	2,260	2	2	-	33.0	65.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	1,3-Dichlorobenzene	0-1 ft	N/A	ug/kg	2,260	2	2	-	40.0	80.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	20,000	2	2	-	48.0	95.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2,4,5-Trichlorophenol	0-1 ft	N/A	ug/kg	4,000	2	2	-	75.0	150	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2,4,6-Trichlorophenol	0-1 ft	N/A	ug/kg	10,000	2	2	-	45.0	90.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2,4-Dichlorophenol	0-1 ft	N/A	ug/kg	20,000	2	2	-	45.0	90.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2,4-Dimethylphenol	0-1 ft	N/A	ug/kg	20,000	2	2	-	140	280	0	780	1,700	0
Erodible Soil Subset	SVOCs	Total	2,4-Dinitrophenol	0-1 ft	N/A	ug/kg	20,000	2	2	-	900	1,800	0	3,200	6,700	0
Erodible Soil Subset	SVOCs	Total	2,4-Dinitrotoluene	0-1 ft	N/A	ug/kg	NV	2	2	-	70.0	140	-	160	340	-

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Erodible Soil Subset	SVOCs	Total	2,6-Dinitrotoluene	0-1 ft	N/A	ug/kg	NV	2	2	-	70.0	140	-	160	340	-
Erodible Soil Subset	SVOCs	Total	2-Chloronaphthalene	0-1 ft	N/A	ug/kg	NV	2	2	-	90.0	180	-	160	340	-
Erodible Soil Subset	SVOCs	Total	2-Chlorophenol	0-1 ft	N/A	ug/kg	60,000	2	2	-	43.0	85.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2-Methylphenol	0-1 ft	N/A	ug/kg	50,000	2	2	-	85.0	170	0	160	340	0
Erodible Soil Subset	SVOCs	Total	2-Nitroaniline	0-1 ft	N/A	ug/kg	NV	2	2	-	68.0	140	-	320	670	-
Erodible Soil Subset	SVOCs	Total	2-Nitrophenol	0-1 ft	N/A	ug/kg	NV	2	2	-	65.0	130	-	160	340	-
Erodible Soil Subset	SVOCs	Total	3,3'-Dichlorobenzidine	0-1 ft	N/A	ug/kg	NV	2	2	-	93.0	190	-	1,600	3,400	-
Erodible Soil Subset	SVOCs	Total	3-Nitroaniline	0-1 ft	N/A	ug/kg	70,000	2	2	-	65.0	130	0	320	670	0
Erodible Soil Subset	SVOCs	Total	4,6-Dinitro-2-methylphenol	0-1 ft	N/A	ug/kg	NV	2	2	-	43.0	85.0	-	1,600	3,400	-
Erodible Soil Subset	SVOCs	Total	4-Bromophenyl Phenyl Ether	0-1 ft	N/A	ug/kg	NV	2	2	-	35.0	70.0	-	160	340	-
Erodible Soil Subset	SVOCs	Total	4-Chloro-3-methylphenol	0-1 ft	N/A	ug/kg	NV	2	2	-	53.0	110	-	160	340	-
Erodible Soil Subset	SVOCs	Total	4-Chloroaniline	0-1 ft	N/A	ug/kg	40,000	2	2	-	53.0	110	0	160	340	0
Erodible Soil Subset	SVOCs	Total	4-Chlorophenyl Phenyl Ether	0-1 ft	N/A	ug/kg	NV	2	2	-	50.0	100	-	160	340	-
Erodible Soil Subset	SVOCs	Total	4-Nitroaniline	0-1 ft	N/A	ug/kg	40,000	2	2	-	85.0	170	0	320	670	0
Erodible Soil Subset	SVOCs	Total	4-Nitrophenol	0-1 ft	N/A	ug/kg	7,000	2	2	-	750	1,500	0	1,600	3,400	0
Erodible Soil Subset	SVOCs	Total	Aniline	0-1 ft	N/A	ug/kg	200,000	2	2	-	38.0	75.0	0	320	670	0
Erodible Soil Subset	SVOCs	Total	Benzoic Acid	0-1 ft	N/A	ug/kg	200,000	2	2	-	2,400	4,800	0	3,200	6,700	0
Erodible Soil Subset	SVOCs	Total	Benzyl Alcohol	0-1 ft	N/A	ug/kg	2,260	2	2	-	93.0	190	0	320	670	0
Erodible Soil Subset	SVOCs	Total	Bis(2-chloroethoxy)methane	0-1 ft	N/A	ug/kg	730,000	2	2	-	33.0	65.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Bis(2-chloroethyl) Ether	0-1 ft	N/A	ug/kg	NV	2	2	-	60.0	120	-	160	340	-
Erodible Soil Subset	SVOCs	Total	Bis(2-chloroisopropyl) Ether	0-1 ft	N/A	ug/kg	NV	2	2	-	30.0	60.0	-	160	340	-
Erodible Soil Subset	SVOCs	Total	Butyl Benzyl Phthalate	0-1 ft	N/A	ug/kg	450	2	2	-	38.0	75.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Carbazole	0-1 ft	N/A	ug/kg	2,260	2	0	2	-	-	0	180	340	0
Erodible Soil Subset	SVOCs	Total	Dibenzofuran	0-1 ft	N/A	ug/kg	2	2	2	-	33.0	65.0	2	160	340	2
Erodible Soil Subset	SVOCs	Total	Diethyl Phthalate	0-1 ft	N/A	ug/kg	100,000	2	2	-	88.0	180	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Dimethyl Phthalate	0-1 ft	N/A	ug/kg	200,000	2	2	-	45.0	90.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Di-n-butyl Phthalate	0-1 ft	N/A	ug/kg	450	2	2	-	65.0	130	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Di-n-octyl Phthalate	0-1 ft	N/A	ug/kg	450	2	2	-	30.0	60.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Hexachlorobenzene	0-1 ft	N/A	ug/kg	1,000,000	2	2	-	53.0	110	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Hexachlorobutadiene	0-1 ft	N/A	ug/kg	NV	2	2	-	35.0	70.0	-	160	340	-
Erodible Soil Subset	SVOCs	Total	Hexachlorocyclopentadiene	0-1 ft	N/A	ug/kg	10,000	2	2	-	380	750	0	780	1,700	0
Erodible Soil Subset	SVOCs	Total	Hexachloroethane	0-1 ft	N/A	ug/kg	NV	2	2	-	55.0	110	-	160	340	-
Erodible Soil Subset	SVOCs	Total	Isophorone	0-1 ft	N/A	ug/kg	NV	2	2	-	40.0	80.0	-	160	340	-
Erodible Soil Subset	SVOCs	Total	Nitrobenzene	0-1 ft	N/A	ug/kg	8,000	2	2	-	50.0	100	0	160	340	0
Erodible Soil Subset	SVOCs	Total	N-Nitrosodimethylamine	0-1 ft	N/A	ug/kg	NV	2	2	-	160	310	-	780	1,700	-
Erodible Soil Subset	SVOCs	Total	N-Nitrosodi-n-propylamine	0-1 ft	N/A	ug/kg	NV	2	2	-	80.0	160	-	160	340	-
Erodible Soil Subset	SVOCs	Total	N-Nitrosodiphenylamine	0-1 ft	N/A	ug/kg	20,000	2	2	-	55.0	110	0	160	340	0
Erodible Soil Subset	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	N/A	ug/kg	50,000	2	2	-	73.0	150	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Pentachlorophenol	0-1 ft	N/A	ug/kg	2,100	2	2	-	220	430	0	1,600	3,400	1
Erodible Soil Subset	SVOCs	Total	Phenol	0-1 ft	N/A	ug/kg	30,000	2	2	-	48.0	95.0	0	470	1,000	0
Erodible Soil Subset	SVOCs	Total	2-Methylnaphthalene	0-1 ft	N/A	ug/kg	NV (1)	2	2	-	30.0	60.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Acenaphthene	0-1 ft	N/A	ug/kg	NV (1)	2	0	2	-	-	0	180	340	0
Erodible Soil Subset	SVOCs	Total	Acenaphthylene	0-1 ft	N/A	ug/kg	NV (1)	2	2	-	35.0	70.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Anthracene	0-1 ft	N/A	ug/kg	NV (1)	2	0	2	-	-	0	180	340	0
Erodible Soil Subset	SVOCs	Total	Fluorene	0-1 ft	N/A	ug/kg	NV (1)	2	2	-	43.0	85.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	NV (1)	2	2	-	33.0	65.0	0	160	340	0
Erodible Soil Subset	SVOCs	Total	Dibenz(a,h)anthracene	0-1 ft	N/A	ug/kg	NV (2)	2	0	2	-	-	0	180	340	0
Erodible Soil Subset	VOCs	Total	1,1,1,2-Tetrachloroethane	0-1 ft	N/A	ug/kg	NV	8	8	-	0.190	9.40	-	5.10	67.0	-

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Erodible Soil Subset	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-1 ft	N/A	ug/kg	55,550,000	8	8	-	0.160	4.30	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,1,2,2-Tetrachloroethane	0-1 ft	N/A	ug/kg	NV	8	8	-	0.0900	7.40	-	5.10	27.0	-
Erodible Soil Subset	VOCs	Total	1,1,2-Trichloroethane	0-1 ft	N/A	ug/kg	NV	8	8	-	0.0890	7.90	-	5.10	27.0	-
Erodible Soil Subset	VOCs	Total	1,1-Dichloroethane	0-1 ft	N/A	ug/kg	70,000	8	8	-	0.0490	9.30	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,1-Dichloroethene	0-1 ft	N/A	ug/kg	3,750,000	8	8	-	0.0710	7.30	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,1-Dichloropropene	0-1 ft	N/A	ug/kg	NV	8	8	-	0.160	9.40	-	5.10	67.0	-
Erodible Soil Subset	VOCs	Total	1,2,3-Trichlorobenzene	0-1 ft	N/A	ug/kg	20,000	8	8	-	0.150	12.0	0	21.0	270	0
Erodible Soil Subset	VOCs	Total	1,2,3-Trichloropropane	0-1 ft	N/A	ug/kg	NV	8	8	-	0.280	17.0	-	5.10	27.0	-
Erodible Soil Subset	VOCs	Total	1,2,4-Trichlorobenzene	0-1 ft	N/A	ug/kg	20,000	8	8	-	0.230	6.50	0	21.0	67.0	0
Erodible Soil Subset	VOCs	Total	1,2,4-Trimethylbenzene	0-1 ft	N/A	ug/kg	200,000	8	2	6	0.110	3.70	0	21.0	67.0	0
Erodible Soil Subset	VOCs	Total	1,2-Dibromo-3-chloropropane	0-1 ft	N/A	ug/kg	NV	8	8	-	0.790	140	-	21.0	270	-
Erodible Soil Subset	VOCs	Total	1,2-Dibromoethane (EDB)	0-1 ft	N/A	ug/kg	NV	8	8	-	0.200	6.90	-	21.0	27.0	-
Erodible Soil Subset	VOCs	Total	1,2-Dichlorobenzene	0-1 ft	N/A	ug/kg	2,260	8	8	-	0.0640	6.60	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,2-Dichloroethane (EDC)	0-1 ft	N/A	ug/kg	70,000	8	8	-	0.0550	9.70	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,2-Dichloropropane	0-1 ft	N/A	ug/kg	700,000	8	8	-	0.0660	11.0	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,3,5-Trimethylbenzene	0-1 ft	N/A	ug/kg	200,000	8	8	-	0.0410	6.50	0	21.0	67.0	0
Erodible Soil Subset	VOCs	Total	1,3-Dichlorobenzene	0-1 ft	N/A	ug/kg	2,260	8	8	-	0.0710	6.10	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	1,3-Dichloropropane	0-1 ft	N/A	ug/kg	NV	8	8	-	0.0600	5.30	-	5.10	67.0	-
Erodible Soil Subset	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	N/A	ug/kg	20,000	8	8	-	0.110	5.70	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	2,2-Dichloropropane	0-1 ft	N/A	ug/kg	NV	8	8	-	0.110	9.50	-	5.10	67.0	-
Erodible Soil Subset	VOCs	Total	2-Butanone (MEK)	0-1 ft	N/A	ug/kg	200,000,000	8	1	2	290	290	0	21.0	540	0
Erodible Soil Subset	VOCs	Total	2-Chlorotoluene	0-1 ft	N/A	ug/kg	NV	8	8	-	0.0520	4.90	-	21.0	270	-
Erodible Soil Subset	VOCs	Total	2-Hexanone	0-1 ft	N/A	ug/kg	1,250,000	8	5	3	0.820	170	0	21.0	2,700	0
Erodible Soil Subset	VOCs	Total	4-Chlorotoluene	0-1 ft	N/A	ug/kg	NV	8	8	-	0.0930	5.50	-	21.0	270	-
Erodible Soil Subset	VOCs	Total	4-Isopropyltoluene	0-1 ft	N/A	ug/kg	200,000	8	5	3	0.0840	6.10	0	21.0	270	0
Erodible Soil Subset	VOCs	Total	4-Methyl-2-pentanone (MIBK)	0-1 ft	N/A	ug/kg	1,250,000	8	5	3	0.260	460	0	21.0	2,700	0
Erodible Soil Subset	VOCs	Total	Acetone	0-1 ft	N/A	ug/kg	1,250,000	8	1	-	230	230	0	810	810	0
Erodible Soil Subset	VOCs	Total	Benzene	0-1 ft	N/A	ug/kg	3,300,000	8	4	4	0.230	5.70	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Bromobenzene	0-1 ft	N/A	ug/kg	NV	8	8	-	0.0930	8.20	-	5.10	270	-
Erodible Soil Subset	VOCs	Total	Bromochloromethane	0-1 ft	N/A	ug/kg	730,000	8	8	-	0.260	9.40	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Bromodichloromethane	0-1 ft	N/A	ug/kg	730,000	8	8	-	0.0450	6.20	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Bromoform	0-1 ft	N/A	ug/kg	NV	8	8	-	0.260	13.0	-	5.10	67.0	-
Erodible Soil Subset	VOCs	Total	Bromomethane	0-1 ft	N/A	ug/kg	730,000	8	6	2	0.430	29.0	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Carbon Disulfide	0-1 ft	N/A	ug/kg	1,000,000	8	1	7	7.40	7.40	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Carbon Tetrachloride	0-1 ft	N/A	ug/kg	1,000,000	8	8	-	0.0790	11.0	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Chlorobenzene	0-1 ft	N/A	ug/kg	40,000	8	8	-	0.0550	6.60	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Chloroethane	0-1 ft	N/A	ug/kg	NV	8	8	-	0.310	24.0	-	5.10	67.0	-
Erodible Soil Subset	VOCs	Total	Chloroform	0-1 ft	N/A	ug/kg	1,875,000	8	5	3	0.0490	0.0630	0	5.10	41.0	0
Erodible Soil Subset	VOCs	Total	Chloromethane	0-1 ft	N/A	ug/kg	730,000	8	6	2	0.0580	8.70	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	2,500,000	8	7	1	0.0820	0.110	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	cis-1,3-Dichloropropene	0-1 ft	N/A	ug/kg	NV	8	8	-	0.0320	8.30	-	5.10	67.0	-
Erodible Soil Subset	VOCs	Total	Dibromochloromethane	0-1 ft	N/A	ug/kg	730,000	8	8	-	0.170	9.10	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Dibromomethane	0-1 ft	N/A	ug/kg	730,000	8	8	-	0.190	18.0	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Dichlorodifluoromethane	0-1 ft	N/A	ug/kg	730,000	8	7	-	0.0730	0.0940	0	5.10	6.60	0
Erodible Soil Subset	VOCs	Total	Dichloromethane (Methylene Chloride)	0-1 ft	N/A	ug/kg	730,000	8	4	3	0.160	0.190	0	11.0	14.0	0
Erodible Soil Subset	VOCs	Total	Ethylbenzene	0-1 ft	N/A	ug/kg	2,260	8	5	3	0.0430	6.10	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Hexachlorobutadiene	0-1 ft	N/A	ug/kg	NV	8	8	-	0.180	15.0	-	21.0	67.0	-
Erodible Soil Subset	VOCs	Total	Isopropylbenzene	0-1 ft	N/A	ug/kg	2,260	8	8	-	0.0320	6.10	0	21.0	67.0	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(12 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Erodible Soil Subset	VOCs	Total	m,p-Xylenes	0-1 ft	N/A	ug/kg	120,000	8	5	3	0.0980	13.0	0	5.10	54.0	0
Erodible Soil Subset	VOCs	Total	Naphthalene	0-1 ft	N/A	ug/kg	NV (1)	8	6	2	0.340	7.90	0	21.0	270	0
Erodible Soil Subset	VOCs	Total	n-Butylbenzene	0-1 ft	N/A	ug/kg	NV	8	8	-	0.0890	6.50	-	21.0	270	-
Erodible Soil Subset	VOCs	Total	n-Propylbenzene	0-1 ft	N/A	ug/kg	2,260	8	8	-	0.0630	5.70	0	21.0	270	0
Erodible Soil Subset	VOCs	Total	o-Xylene	0-1 ft	N/A	ug/kg	1,000	8	8	-	0.0600	6.90	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	sec-Butylbenzene	0-1 ft	N/A	ug/kg	2,260	8	8	-	0.0660	6.50	0	21.0	270	0
Erodible Soil Subset	VOCs	Total	Styrene	0-1 ft	N/A	ug/kg	300,000	8	8	-	0.0770	6.10	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	tert-Butylbenzene	0-1 ft	N/A	ug/kg	2,260	8	8	-	0.0550	4.30	0	21.0	270	0
Erodible Soil Subset	VOCs	Total	Tetrachloroethene (PCE)	0-1 ft	N/A	ug/kg	10,000	8	8	-	0.130	8.30	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Toluene	0-1 ft	N/A	ug/kg	200,000	8	1	7	6.10	6.10	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	trans-1,2-Dichloroethene	0-1 ft	N/A	ug/kg	2,500,000	8	8	-	0.0490	9.90	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	trans-1,3-Dichloropropene	0-1 ft	N/A	ug/kg	NV	8	8	-	0.110	12.0	-	5.10	67.0	-
Erodible Soil Subset	VOCs	Total	Trichloroethene (TCE)	0-1 ft	N/A	ug/kg	40,000	8	8	-	0.140	13.0	0	5.10	27.0	0
Erodible Soil Subset	VOCs	Total	Trichlorofluoromethane	0-1 ft	N/A	ug/kg	730,000	8	8	-	0.0550	11.0	0	5.10	67.0	0
Erodible Soil Subset	VOCs	Total	Vinyl Acetate	0-1 ft	N/A	ug/kg	NV	8	8	-	0.610	52.0	-	21.0	670	-
Erodible Soil Subset	VOCs	Total	Vinyl Chloride	0-1 ft	N/A	ug/kg	20,000	8	8	-	0.0580	13.0	0	5.10	27.0	0
Groundwater	Metals	Dissolved	Iron	N/A	N/A	ug/L	1,000	20	13	3	4.00	20.0	0	20.0	20.0	0
Groundwater	Metals	Dissolved	Potassium	N/A	N/A	ug/L	53,000	5	0	3	-	-	0	2,000	2,000	0
Groundwater	Metals	Dissolved	Vanadium	N/A	N/A	ug/L	20	20	5	5	0.0700	0.800	0	0.200	10.0	0
Groundwater	Butyltins	Total	Monobutyltin	N/A	N/A	ug/L	0.063	20	18	2	0.0110	0.0290	0	0.0500	0.0870	15
Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	N/A	ug/L	NV	20	18	2	11.0	120	-	100	120	-
Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	N/A	ug/L	NV	20	20	-	19.0	120	-	100	120	-
Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	N/A	ug/L	NV	20	17	3	13.0	13.0	-	250	250	-
Groundwater	SVOCs	Total	Benzo(b)fluoranthene	N/A	N/A	ug/L	0.6774	20	19	1	0.0170	0.0200	0	0.190	0.230	0
Groundwater	SVOCs	Total	Benzo(k)fluoranthene	N/A	N/A	ug/L	0.6415	20	20	-	0.0240	0.0280	0	0.190	0.230	0
Groundwater	SVOCs	Total	Phenanthrene	N/A	N/A	ug/L	6.3	20	19	1	0.0220	0.0250	0	0.190	0.230	0
Groundwater	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	N/A	ug/L	186	5	5	-	0.0450	0.0450	0	0.500	0.500	0
Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/L	11	5	3	1	0.0620	0.0620	0	0.500	0.500	0
Groundwater	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	N/A	ug/L	2,400	5	5	-	0.0880	0.0880	0	0.500	0.500	0
Groundwater	VOCs	Total	1,1,2-Trichloroethane	N/A	N/A	ug/L	9,400	5	5	-	0.0940	0.0940	0	0.500	0.500	0
Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	N/A	ug/L	47	5	3	1	0.0590	0.0590	0	0.500	0.500	0
Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	N/A	ug/L	25	5	4	-	0.100	0.100	0	0.500	0.500	0
Groundwater	VOCs	Total	1,1-Dichloropropene	N/A	N/A	ug/L	NV	5	5	-	0.0620	0.0620	-	0.500	0.500	-
Groundwater	VOCs	Total	1,2,3-Trichlorobenzene	N/A	N/A	ug/L	8	5	5	-	0.0840	0.0840	0	2.00	2.00	0
Groundwater	VOCs	Total	1,2,3-Trichloropropane	N/A	N/A	ug/L	NV	5	5	-	0.240	0.240	-	0.500	0.500	-
Groundwater	VOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	110	5	5	-	0.180	0.180	0	2.00	2.00	0
Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	N/A	ug/L	7.3	5	5	-	0.0620	0.0620	0	2.00	2.00	0
Groundwater	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	N/A	ug/L	NV	5	5	-	0.500	0.500	-	2.00	2.00	-
Groundwater	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	N/A	ug/L	NV	5	5	-	0.0720	0.0720	-	2.00	2.00	-
Groundwater	VOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	14	5	5	-	0.0690	0.0690	0	0.500	0.500	0
Groundwater	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	N/A	ug/L	20,000	5	5	-	0.0660	0.0660	0	0.500	0.500	0
Groundwater	VOCs	Total	1,2-Dichloropropane	N/A	N/A	ug/L	5,700	5	5	-	0.0620	0.0620	0	0.500	0.500	0
Groundwater	VOCs	Total	1,3,5-Trimethylbenzene	N/A	N/A	ug/L	7.3	5	5	-	0.0660	0.0660	0	5.00	5.00	0
Groundwater	VOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	71	5	5	-	0.0820	0.0820	0	0.500	0.500	0
Groundwater	VOCs	Total	1,3-Dichloropropane	N/A	N/A	ug/L	5,700	5	5	-	0.0570	0.0570	0	0.500	0.500	0
Groundwater	VOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	15	5	5	-	0.0840	0.0840	0	0.500	0.500	0
Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	N/A	ug/L	5,700	20	20	-	0.0830	0.420	0	0.500	2.50	0
Groundwater	VOCs	Total	2-Butanone (MEK)	N/A	N/A	ug/L	14,000	5	5	-	2.30	2.30	0	20.0	20.0	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(13 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Groundwater	VOCs	Total	2-Chlorotoluene	N/A	N/A	ug/L	NV	5	5	-	0.0790	0.0790	-	2.00	2.00	-
Groundwater	VOCs	Total	2-Hexanone	N/A	N/A	ug/L	99	5	5	-	2.40	2.40	0	20.0	20.0	0
Groundwater	VOCs	Total	4-Chlorotoluene	N/A	N/A	ug/L	NV	5	5	-	0.0570	0.0570	-	4.00	4.00	-
Groundwater	VOCs	Total	4-Isopropyltoluene	N/A	N/A	ug/L	NV	5	5	-	0.0700	0.0700	-	2.00	2.00	-
Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	N/A	ug/L	170	5	5	-	1.40	1.40	0	20.0	20.0	0
Groundwater	VOCs	Total	Acetone	N/A	N/A	ug/L	1,500	5	5	-	3.00	3.00	0	20.0	20.0	0
Groundwater	VOCs	Total	Benzene	N/A	N/A	ug/L	130	5	5	-	0.0620	0.0620	0	0.500	0.500	0
Groundwater	VOCs	Total	Bromobenzene	N/A	N/A	ug/L	NV	5	5	-	0.0660	0.0660	-	2.00	2.00	-
Groundwater	VOCs	Total	Bromochloromethane	N/A	N/A	ug/L	NV	5	5	-	0.0990	0.0990	-	0.500	0.500	-
Groundwater	VOCs	Total	Bromodichloromethane	N/A	N/A	ug/L	NV	5	5	-	0.0550	0.0550	-	0.500	0.500	-
Groundwater	VOCs	Total	Bromoform	N/A	N/A	ug/L	320	5	5	-	0.0990	0.0990	0	0.500	0.500	0
Groundwater	VOCs	Total	Bromomethane	N/A	N/A	ug/L	16	5	5	-	0.120	0.120	0	0.500	0.500	0
Groundwater	VOCs	Total	Carbon Disulfide	N/A	N/A	ug/L	0.92	5	0	5	-	-	0	0.500	0.500	0
Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	N/A	ug/L	74	5	5	-	0.0480	0.0480	0	0.500	0.500	0
Groundwater	VOCs	Total	Chlorobenzene	N/A	N/A	ug/L	50	5	5	-	0.0640	0.0640	0	0.500	0.500	0
Groundwater	VOCs	Total	Chloroethane	N/A	N/A	ug/L	NV	5	5	-	0.130	0.130	-	0.500	0.500	-
Groundwater	VOCs	Total	Chloroform	N/A	N/A	ug/L	1,240	20	19	1	0.0820	0.410	0	0.500	2.50	0
Groundwater	VOCs	Total	Chloromethane	N/A	N/A	ug/L	NV	5	5	-	0.110	0.110	-	0.500	0.500	-
Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/L	590	20	5	3	0.0660	0.0660	0	0.500	0.500	0
Groundwater	VOCs	Total	cis-1,3-Dichloropropene	N/A	N/A	ug/L	0.055	5	5	-	0.0550	0.0550	0	0.500	0.500	5
Groundwater	VOCs	Total	Dibromochloromethane	N/A	N/A	ug/L	NV	5	5	-	0.0720	0.0720	-	0.500	0.500	-
Groundwater	VOCs	Total	Dibromomethane	N/A	N/A	ug/L	NV	5	5	-	0.120	0.120	-	0.500	0.500	-
Groundwater	VOCs	Total	Dichlorodifluoromethane	N/A	N/A	ug/L	NV	5	5	-	0.0750	0.0750	-	0.500	0.500	-
Groundwater	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	N/A	ug/L	2,200	5	4	1	0.0840	0.0840	0	2.00	2.00	0
Groundwater	VOCs	Total	Ethylbenzene	N/A	N/A	ug/L	7.3	5	5	-	0.0680	0.0680	0	0.500	0.500	0
Groundwater	VOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	9.3	5	5	-	0.150	0.150	0	2.00	2.00	0
Groundwater	VOCs	Total	Isopropylbenzene	N/A	N/A	ug/L	7.3	5	5	-	0.0760	0.0760	0	0.500	0.500	0
Groundwater	VOCs	Total	m,p-Xylenes	N/A	N/A	ug/L	13	5	5	-	0.110	0.110	0	0.500	0.500	0
Groundwater	VOCs	Total	Naphthalene	N/A	N/A	ug/L	193.5	5	5	-	0.0960	0.0960	0	2.00	2.00	0
Groundwater	VOCs	Total	n-Butylbenzene	N/A	N/A	ug/L	NV	5	5	-	0.0850	0.0850	-	2.00	2.00	-
Groundwater	VOCs	Total	n-Propylbenzene	N/A	N/A	ug/L	7.3	5	5	-	0.00590	0.00590	0	2.00	2.00	0
Groundwater	VOCs	Total	o-Xylene	N/A	N/A	ug/L	350	5	5	-	0.0680	0.0680	0	0.500	0.500	0
Groundwater	VOCs	Total	sec-Butylbenzene	N/A	N/A	ug/L	NV	5	5	-	0.0710	0.0710	-	2.00	2.00	-
Groundwater	VOCs	Total	Styrene	N/A	N/A	ug/L	72	5	5	-	0.0770	0.0770	0	0.500	0.500	0
Groundwater	VOCs	Total	tert-Butylbenzene	N/A	N/A	ug/L	NV	5	5	-	0.0590	0.0590	-	2.00	2.00	-
Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	N/A	ug/L	840	20	4	3	0.0970	0.0970	0	0.500	0.500	0
Groundwater	VOCs	Total	Toluene	N/A	N/A	ug/L	9.8	5	0	2	-	-	0	0.500	0.500	0
Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	N/A	ug/L	590	5	3	1	0.0690	0.0690	0	0.500	0.500	0
Groundwater	VOCs	Total	trans-1,3-Dichloropropene	N/A	N/A	ug/L	0.055	5	5	-	0.0750	0.0750	5	0.500	0.500	5
Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/L	3,000	20	5	4	0.0730	0.0730	0	0.500	0.500	0
Groundwater	VOCs	Total	Trichlorofluoromethane	N/A	N/A	ug/L	NV	5	5	-	0.0990	0.0990	-	0.500	0.500	-
Groundwater	VOCs	Total	Vinyl Acetate	N/A	N/A	ug/L	16	5	5	-	0.910	0.910	0	5.00	5.00	0
Groundwater	VOCs	Total	Vinyl Chloride	N/A	N/A	ug/L	1,300	20	16	2	0.0440	0.0440	0	0.500	2.50	0
DP Groundwater	Metals	Dissolved	Aluminum	N/A	N/A	ug/L	87	10	3	5	5.88	5.88	0	100	100	8
DP Groundwater	Metals	Dissolved	Antimony	N/A	N/A	ug/L	1,000	10	0	9	-	-	0	0.500	0.500	0
DP Groundwater	Metals	Dissolved	Arsenic	N/A	N/A	ug/L	150	10	0	1	-	-	0	0.500	0.500	0
DP Groundwater	Metals	Dissolved	Beryllium	N/A	N/A	ug/L	5.3	10	10	-	0.0782	0.0782	0	0.500	0.500	0
DP Groundwater	Metals	Dissolved	Cadmium	N/A	N/A	ug/L	0.17	10	9	1	0.0247	0.0247	0	0.500	0.500	10

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(14 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
DP Groundwater	Metals	Dissolved	Cobalt	N/A	N/A	ug/L	23	10	2	7	0.770	0.770	0	5.00	5.00	0
DP Groundwater	Metals	Dissolved	Copper	N/A	N/A	ug/L	5.8	10	3	-	0.500	1.23	0	0.500	1.23	0
DP Groundwater	Metals	Dissolved	Iron	N/A	N/A	ug/L	1,000	10	6	1	14.0	14.0	0	100	100	0
DP Groundwater	Metals	Dissolved	Lead	N/A	N/A	ug/L	1.44	10	4	6	0.0240	0.500	0	0.500	0.500	0
DP Groundwater	Metals	Dissolved	Mercury	N/A	N/A	ug/L	0.77	10	8	2	0.0530	0.0530	0	0.200	0.200	0
DP Groundwater	Metals	Dissolved	Nickel	N/A	N/A	ug/L	34	10	7	3	0.370	10.0	0	10.0	10.0	0
DP Groundwater	Metals	Dissolved	Potassium	N/A	N/A	ug/L	53,000	10	0	3	-	-	0	1,000	1,000	0
DP Groundwater	Metals	Dissolved	Selenium	N/A	N/A	ug/L	5	10	0	3	-	-	0	0.500	0.500	0
DP Groundwater	Metals	Dissolved	Silver	N/A	N/A	ug/L	0.12	10	2	8	0.0188	0.0188	0	0.100	0.100	0
DP Groundwater	Metals	Dissolved	Thallium	N/A	N/A	ug/L	40	10	7	3	0.0292	0.0292	0	0.500	0.500	0
DP Groundwater	Metals	Dissolved	Vanadium	N/A	N/A	ug/L	20	10	4	6	0.488	10.0	0	10.0	10.0	0
DP Groundwater	Metals	Dissolved	Zinc	N/A	N/A	ug/L	77	10	6	-	2.00	2.00	0	2.00	2.00	0
DP Groundwater	Butyltins	Total	Dibutyltin	N/A	N/A	ug/L	0.063	4	4	-	0.000231	0.000287	0	0.000793	0.000988	0
DP Groundwater	Butyltins	Total	Monobutyltin	N/A	N/A	ug/L	0.063	4	2	-	0.000114	0.000142	0	0.000396	0.000494	0
DP Groundwater	Butyltins	Total	Tetrabutyltin	N/A	N/A	ug/L	0.063	4	4	-	0.000600	0.000748	0	0.00198	0.00247	0
DP Groundwater	Butyltins	Total	Tributyltin	N/A	N/A	ug/L	0.063	4	2	-	0.000454	0.000552	0	0.00142	0.00173	0
DP Groundwater	Pesticides	Total	4,4'-DDD	N/A	N/A	ug/L	0.001	3	3	-	0.000453	0.000575	0	0.00385	0.00488	3
DP Groundwater	Pesticides	Total	4,4'-DDE	N/A	N/A	ug/L	0.001	3	3	-	0.000375	0.000476	0	0.00385	0.00488	3
DP Groundwater	Pesticides	Total	4,4'-DDT	N/A	N/A	ug/L	0.001	3	3	-	0.000480	0.000609	0	0.00385	0.00488	3
DP Groundwater	Pesticides	Total	Aldrin	N/A	N/A	ug/L	0.06	3	3	-	0.000110	0.000140	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	BHC (alpha)	N/A	N/A	ug/L	2.2	3	3	-	0.000354	0.000449	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	BHC (beta)	N/A	N/A	ug/L	2.2	3	3	-	0.000411	0.000521	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	BHC (delta)	N/A	N/A	ug/L	2.2	3	3	-	0.000226	0.000286	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	BHC (gamma) Lindane	N/A	N/A	ug/L	0.08	3	0	1	-	-	0	0.00111	0.00111	0
DP Groundwater	Pesticides	Total	Chlordane (alpha)	N/A	N/A	ug/L	0.0043	3	3	-	0.000339	0.000429	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	Chlordane (gamma)	N/A	N/A	ug/L	0.0043	3	3	-	0.000461	0.000584	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	Dieldrin	N/A	N/A	ug/L	0.056	3	3	-	0.000290	0.000368	0	0.00192	0.00244	0
DP Groundwater	Pesticides	Total	Endosulfan I	N/A	N/A	ug/L	0.056	3	3	-	0.000480	0.000608	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	Endosulfan II	N/A	N/A	ug/L	0.056	3	3	-	0.000411	0.00192	0	0.00192	0.00244	0
DP Groundwater	Pesticides	Total	Endosulfan Sulfate	N/A	N/A	ug/L	0.051	3	3	-	0.000517	0.000655	0	0.00192	0.00244	0
DP Groundwater	Pesticides	Total	Endrin Aldehyde	N/A	N/A	ug/L	0.15	3	3	-	0.000936	0.00119	0	0.00192	0.00244	0
DP Groundwater	Pesticides	Total	Endrin Ketone	N/A	N/A	ug/L	NV	3	3	-	0.000332	0.000421	-	0.00192	0.00244	-
DP Groundwater	Pesticides	Total	Endrin	N/A	N/A	ug/L	0.036	3	3	-	0.000298	0.000378	0	0.00192	0.00244	0
DP Groundwater	Pesticides	Total	Heptachlor Epoxide	N/A	N/A	ug/L	0.0038	3	3	-	0.000360	0.000456	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	Heptachlor	N/A	N/A	ug/L	0.0038	3	3	-	0.000724	0.000919	0	0.000962	0.00122	0
DP Groundwater	Pesticides	Total	Methoxychlor	N/A	N/A	ug/L	0.03	3	1	2	0.000584	0.000584	0	0.0109	0.0122	0
DP Groundwater	Pesticides	Total	Toxaphene	N/A	N/A	ug/L	0.002	3	3	-	0.0112	0.0142	3	0.0962	0.122	3
DP Groundwater	PCB Aroclors	Total	Aroclor 1016	N/A	N/A	ug/L	0.014	7	7	-	0.00206	0.00244	0	0.00941	0.0112	0
DP Groundwater	PCB Aroclors	Total	Aroclor 1221	N/A	N/A	ug/L	0.014	7	7	-	0.00206	0.00244	0	0.00941	0.0112	0
DP Groundwater	PCB Aroclors	Total	Aroclor 1232	N/A	N/A	ug/L	0.014	7	7	-	0.00206	0.00244	0	0.00941	0.0112	0
DP Groundwater	PCB Aroclors	Total	Aroclor 1242	N/A	N/A	ug/L	0.014	7	7	-	0.00206	0.00244	0	0.00941	0.0112	0
DP Groundwater	PCB Aroclors	Total	Aroclor 1248	N/A	N/A	ug/L	0.014	7	7	-	0.00206	0.00244	0	0.00941	0.0112	0
DP Groundwater	PCB Aroclors	Total	Aroclor 1254	N/A	N/A	ug/L	0.014	7	7	-	0.00227	0.00269	0	0.00941	0.0112	0
DP Groundwater	PCB Aroclors	Total	Aroclor 1260	N/A	N/A	ug/L	0.014	7	7	-	0.00227	0.00269	0	0.00941	0.0112	0
DP Groundwater	NWTPH-Dx	Total	Diesel Range Organics	N/A	N/A	ug/L	NV	4	4	-	74.7	89.7	-	244	293	-
DP Groundwater	NWTPH-Dx	Total	Residual Range Organics	N/A	N/A	ug/L	NV	4	3	1	92.5	111	-	487	585	-
DP Groundwater	NWTPH-Gx	Total	Gasoline Range Organics	N/A	N/A	ug/L	NV	6	4	2	13.0	13.0	-	100	100	-
DP Groundwater	SVOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	110	9	9	-	0.0117	0.0151	0	0.190	1.00	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(15 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
DP Groundwater	SVOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	14	9	9	-	0.0264	0.0340	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	71	9	9	-	0.0349	0.0449	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	15	9	9	-	0.0300	0.0387	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2,4,5-Trichlorophenol	N/A	N/A	ug/L	18	6	6	-	0.0421	0.0542	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2,4,6-Trichlorophenol	N/A	N/A	ug/L	970	6	6	-	0.0305	0.0393	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2,4-Dichlorophenol	N/A	N/A	ug/L	3,650	6	6	-	0.0177	0.0228	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2,4-Dimethylphenol	N/A	N/A	ug/L	42	6	6	-	0.174	0.224	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	2,4-Dinitrophenol	N/A	N/A	ug/L	19	6	6	-	0.197	0.253	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	2,4-Dinitrotoluene	N/A	N/A	ug/L	230	9	9	-	0.0545	0.0703	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2,6-Dinitrotoluene	N/A	N/A	ug/L	230	9	9	-	0.0361	0.0465	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2-Chloronaphthalene	N/A	N/A	ug/L	32	9	9	-	0.00456	0.00588	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	2-Chlorophenol	N/A	N/A	ug/L	2,000	6	6	-	0.0400	0.0515	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2-Methylnaphthalene	N/A	N/A	ug/L	72.16	9	3	3	0.0142	0.0149	0	0.0475	0.0553	0
DP Groundwater	SVOCs	Total	2-Methylphenol	N/A	N/A	ug/L	13	6	6	-	0.0371	0.0479	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	2-Nitroaniline	N/A	N/A	ug/L	NV	9	9	-	0.0284	0.0366	-	0.190	0.245	-
DP Groundwater	SVOCs	Total	2-Nitrophenol	N/A	N/A	ug/L	NV	6	6	-	0.0406	0.0524	-	0.190	0.245	-
DP Groundwater	SVOCs	Total	3,3'-Dichlorobenzidine	N/A	N/A	ug/L	4.5	9	9	-	0.178	0.229	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	3-Nitroaniline	N/A	N/A	ug/L	NV	9	9	-	0.0537	0.0692	-	0.190	0.245	-
DP Groundwater	SVOCs	Total	4,6-Dinitro-2-methylphenol	N/A	N/A	ug/L	NV	6	6	-	0.294	0.379	-	0.950	1.22	-
DP Groundwater	SVOCs	Total	4-Bromophenyl Phenyl Ether	N/A	N/A	ug/L	1.5	9	9	-	0.0208	0.0268	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	4-Chloro-3-methylphenol	N/A	N/A	ug/L	NV	6	6	-	0.0232	0.0299	-	0.190	0.245	-
DP Groundwater	SVOCs	Total	4-Chloroaniline	N/A	N/A	ug/L	50	9	9	-	0.0687	0.0885	0	0.285	0.367	0
DP Groundwater	SVOCs	Total	4-Chlorophenyl Phenyl Ether	N/A	N/A	ug/L	NV	9	9	-	0.0306	0.0394	-	0.190	0.245	-
DP Groundwater	SVOCs	Total	4-Nitroaniline	N/A	N/A	ug/L	NV	9	9	-	0.0368	0.0475	-	0.190	0.245	-
DP Groundwater	SVOCs	Total	4-Nitrophenol	N/A	N/A	ug/L	150	6	6	-	0.112	0.144	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	Acenaphthene	N/A	N/A	ug/L	55.85	9	4	5	0.00323	0.00356	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	Acenaphthylene	N/A	N/A	ug/L	306.9	9	9	-	0.00228	0.00294	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	Aniline	N/A	N/A	ug/L	2.2	9	9	-	0.0310	0.367	0	0.285	0.367	0
DP Groundwater	SVOCs	Total	Anthracene	N/A	N/A	ug/L	13	9	8	1	0.00180	0.00209	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	Benzidine	N/A	N/A	ug/L	3.9	9	9	-	0.950	1.22	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	Benzo(a)anthracene	N/A	N/A	ug/L	0.027	9	9	-	0.00494	0.00636	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	Benzo(a)pyrene	N/A	N/A	ug/L	0.014	9	8	1	0.00313	0.00363	0	0.0190	0.0245	9
DP Groundwater	SVOCs	Total	Benzo(g,h,i)perylene	N/A	N/A	ug/L	0.4391	9	9	-	0.00484	0.00624	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	Benzofluoranthenes, Total	N/A	N/A	ug/L	0.014	9	8	1	0.0113	0.0131	0	0.0950	0.122	9
DP Groundwater	SVOCs	Total	Benzoic Acid	N/A	N/A	ug/L	42	6	6	-	0.127	0.164	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	Benzyl Alcohol	N/A	N/A	ug/L	8.6	7	5	2	0.0404	0.0520	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Bis(2-chloroethoxy)methane	N/A	N/A	ug/L	NV	9	9	-	0.0172	0.0222	-	0.190	0.245	-
DP Groundwater	SVOCs	Total	Bis(2-chloroethyl) Ether	N/A	N/A	ug/L	1,900	9	9	-	0.0308	0.0397	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Bis(2-chloroisopropyl) Ether	N/A	N/A	ug/L	NV	9	9	-	0.0407	0.0525	-	0.190	0.245	-
DP Groundwater	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	N/A	N/A	ug/L	3	9	8	1	0.362	0.466	0	1.42	1.84	0
DP Groundwater	SVOCs	Total	Butyl Benzyl Phthalate	N/A	N/A	ug/L	19	9	3	6	0.102	0.285	0	0.285	0.367	0
DP Groundwater	SVOCs	Total	Carbazole	N/A	N/A	ug/L	NV	9	9	-	0.0206	0.0266	-	0.190	0.245	-
DP Groundwater	SVOCs	Total	Chrysene	N/A	N/A	ug/L	2.042	9	9	-	0.00798	0.0103	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	Dibenz(a,h)anthracene	N/A	N/A	ug/L	0.2825	9	8	1	0.00294	0.00341	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	Dibenzofuran	N/A	N/A	ug/L	3.7	9	7	2	0.0195	0.0215	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Diethyl Phthalate	N/A	N/A	ug/L	210	9	9	-	0.0529	0.0682	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Dimethyl Phthalate	N/A	N/A	ug/L	3	9	9	-	0.0370	0.0477	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Di-n-butyl Phthalate	N/A	N/A	ug/L	35	9	3	5	0.190	0.608	0	0.190	0.608	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(16 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
DP Groundwater	SVOCs	Total	Di-n-octyl Phthalate	N/A	N/A	ug/L	708	9	9	-	0.0259	0.0334	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Fluoranthene	N/A	N/A	ug/L	6.16	9	8	-	0.00541	0.00626	0	0.0190	0.0220	0
DP Groundwater	SVOCs	Total	Fluorene	N/A	N/A	ug/L	3.9	9	3	5	0.00161	0.00178	0	0.0190	0.0221	0
DP Groundwater	SVOCs	Total	Hexachlorobenzene	N/A	N/A	ug/L	0.0003	9	9	-	0.0237	0.0306	9	0.190	0.245	9
DP Groundwater	SVOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	9.3	9	9	-	0.0140	0.0180	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Hexachlorocyclopentadiene	N/A	N/A	ug/L	5.2	9	9	-	0.294	0.379	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	Hexachloroethane	N/A	N/A	ug/L	540	9	9	-	0.0362	0.0466	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Indeno(1,2,3-cd)pyrene	N/A	N/A	ug/L	0.275	9	8	1	0.00266	0.00308	0	0.0190	0.0245	0
DP Groundwater	SVOCs	Total	Isophorone	N/A	N/A	ug/L	2,340	9	7	2	0.0278	0.0311	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Naphthalene	N/A	N/A	ug/L	193.5	9	5	4	0.0165	0.0191	0	0.0475	1.00	0
DP Groundwater	SVOCs	Total	Nitrobenzene	N/A	N/A	ug/L	540	9	9	-	0.0494	0.0636	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	N-Nitrosodimethylamine	N/A	N/A	ug/L	117	9	9	-	0.950	1.22	0	0.950	1.22	0
DP Groundwater	SVOCs	Total	N-Nitrosodi-n-propylamine	N/A	N/A	ug/L	117	9	9	-	0.0350	0.0452	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	N-Nitrosodiphenylamine	N/A	N/A	ug/L	210	9	9	-	0.00807	0.0104	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	N/A	ug/L	13	6	6	-	0.0419	0.0540	0	0.380	0.490	0
DP Groundwater	SVOCs	Total	Pentachlorophenol	N/A	N/A	ug/L	15	6	6	-	0.190	0.245	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Phenanthrene	N/A	N/A	ug/L	6.3	9	1	7	0.00351	0.00351	0	0.0190	0.0221	0
DP Groundwater	SVOCs	Total	Phenol	N/A	N/A	ug/L	110	8	3	5	0.00437	0.00563	0	0.190	0.245	0
DP Groundwater	SVOCs	Total	Pyrene	N/A	N/A	ug/L	10.11	9	6	2	0.00275	0.00319	0	0.0190	0.0220	0
DP Groundwater	SVOCs	Dissolved	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	110	8	8	-	0.0120	0.0139	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	1,2-Dichlorobenzene	N/A	N/A	ug/L	14	8	8	-	0.0272	0.0313	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	1,3-Dichlorobenzene	N/A	N/A	ug/L	71	8	8	-	0.0359	0.0413	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	1,4-Dichlorobenzene	N/A	N/A	ug/L	15	8	8	-	0.0310	0.0356	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	2,4,5-Trichlorophenol	N/A	N/A	ug/L	18	3	3	-	0.0457	0.0499	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	2,4,6-Trichlorophenol	N/A	N/A	ug/L	970	3	3	-	0.0331	0.0361	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	2,4-Dichlorophenol	N/A	N/A	ug/L	3,650	3	3	-	0.0192	0.0209	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	2,4-Dimethylphenol	N/A	N/A	ug/L	42	3	3	-	0.189	0.206	0	1.03	1.13	0
DP Groundwater	SVOCs	Dissolved	2,4-Dinitrophenol	N/A	N/A	ug/L	19	3	3	-	0.214	0.233	0	1.03	1.13	0
DP Groundwater	SVOCs	Dissolved	2,4-Dinitrotoluene	N/A	N/A	ug/L	230	8	8	-	0.0562	0.0646	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	2,6-Dinitrotoluene	N/A	N/A	ug/L	230	8	8	-	0.0372	0.0428	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	2-Chloronaphthalene	N/A	N/A	ug/L	32	8	8	-	0.00470	0.00541	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	2-Chlorophenol	N/A	N/A	ug/L	2,000	3	3	-	0.0434	0.0474	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	2-Methylnaphthalene	N/A	N/A	ug/L	72.16	8	2	4	0.0147	0.0168	0	0.0490	0.0563	0
DP Groundwater	SVOCs	Dissolved	2-Methylphenol	N/A	N/A	ug/L	13	3	3	-	0.0404	0.0440	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	2-Nitroaniline	N/A	N/A	ug/L	NV	8	8	-	0.0293	0.0337	-	0.196	0.225	-
DP Groundwater	SVOCs	Dissolved	2-Nitrophenol	N/A	N/A	ug/L	NV	3	3	-	0.0442	0.0482	-	0.206	0.225	-
DP Groundwater	SVOCs	Dissolved	3,3'-Dichlorobenzidine	N/A	N/A	ug/L	4.5	8	8	-	0.183	0.211	0	0.979	1.13	0
DP Groundwater	SVOCs	Dissolved	3-Nitroaniline	N/A	N/A	ug/L	NV	8	8	-	0.0553	0.0636	-	0.196	0.225	-
DP Groundwater	SVOCs	Dissolved	4,6-Dinitro-2-methylphenol	N/A	N/A	ug/L	NV	3	3	-	0.320	0.349	-	1.03	1.13	-
DP Groundwater	SVOCs	Dissolved	4-Bromophenyl Phenyl Ether	N/A	N/A	ug/L	1.5	8	8	-	0.0214	0.0247	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	4-Chloro-3-methylphenol	N/A	N/A	ug/L	NV	3	3	-	0.0252	0.0275	-	0.206	0.225	-
DP Groundwater	SVOCs	Dissolved	4-Chloroaniline	N/A	N/A	ug/L	50	8	8	-	0.0708	0.0814	0	0.294	0.338	0
DP Groundwater	SVOCs	Dissolved	4-Chlorophenyl Phenyl Ether	N/A	N/A	ug/L	NV	8	8	-	0.0315	0.0363	-	0.196	0.225	-
DP Groundwater	SVOCs	Dissolved	4-Nitroaniline	N/A	N/A	ug/L	NV	8	8	-	0.0380	0.0437	-	0.196	0.225	-
DP Groundwater	SVOCs	Dissolved	4-Nitrophenol	N/A	N/A	ug/L	150	3	3	-	0.122	0.133	0	1.03	1.13	0
DP Groundwater	SVOCs	Dissolved	Acenaphthene	N/A	N/A	ug/L	55.85	8	3	4	0.00333	0.00345	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Acenaphthylene	N/A	N/A	ug/L	306.9	8	7	1	0.00235	0.00270	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Anthracene	N/A	N/A	ug/L	13	8	8	-	0.00186	0.00214	0	0.0196	0.0225	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(17 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
DP Groundwater	SVOCs	Dissolved	Benzidine	N/A	N/A	ug/L	3.9	8	8	-	0.979	1.13	0	0.979	1.13	0
DP Groundwater	SVOCs	Dissolved	Benzo(a)anthracene	N/A	N/A	ug/L	0.027	8	8	-	0.00509	0.00586	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Benzo(a)pyrene	N/A	N/A	ug/L	0.014	8	7	1	0.00323	0.00372	0	0.0196	0.0225	8
DP Groundwater	SVOCs	Dissolved	Benzo(g,h,i)perylene	N/A	N/A	ug/L	0.4391	8	8	-	0.00500	0.00574	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Benzofluoranthenes, Total	N/A	N/A	ug/L	0.014	8	8	-	0.0117	0.0134	0	0.0979	0.113	8
DP Groundwater	SVOCs	Dissolved	Benzoic Acid	N/A	N/A	ug/L	42	4	3	1	0.138	0.151	0	1.03	1.21	0
DP Groundwater	SVOCs	Dissolved	Benzyl Alcohol	N/A	N/A	ug/L	8.6	3	3	-	0.0439	0.0479	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	Bis(2-chloroethoxy)methane	N/A	N/A	ug/L	NV	8	8	-	0.0177	0.0204	-	0.196	0.225	-
DP Groundwater	SVOCs	Dissolved	Bis(2-chloroethyl) Ether	N/A	N/A	ug/L	1,900	8	8	-	0.0317	0.0365	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Bis(2-chloroisopropyl) Ether	N/A	N/A	ug/L	NV	8	8	-	0.0420	0.0483	-	0.196	0.225	-
DP Groundwater	SVOCs	Dissolved	Bis(2-ethylhexyl) Phthalate	N/A	N/A	ug/L	3	8	8	-	0.373	0.429	0	1.47	1.69	0
DP Groundwater	SVOCs	Dissolved	Butyl Benzyl Phthalate	N/A	N/A	ug/L	19	8	2	6	0.327	0.338	0	0.294	0.363	0
DP Groundwater	SVOCs	Dissolved	Carbazole	N/A	N/A	ug/L	NV	8	8	-	0.0213	0.0244	-	0.196	0.225	-
DP Groundwater	SVOCs	Dissolved	Chrysene	N/A	N/A	ug/L	2.042	8	8	-	0.00823	0.00946	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Dibenz(a,h)anthracene	N/A	N/A	ug/L	0.2825	8	7	1	0.00304	0.00349	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Dibenzofuran	N/A	N/A	ug/L	3.7	8	8	-	0.0201	0.0231	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Diethyl Phthalate	N/A	N/A	ug/L	210	8	5	3	0.0546	0.0584	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Dimethyl Phthalate	N/A	N/A	ug/L	3	8	8	-	0.0382	0.0439	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Di-n-butyl Phthalate	N/A	N/A	ug/L	35	8	2	6	0.218	0.275	0	0.196	0.275	0
DP Groundwater	SVOCs	Dissolved	Di-n-octyl Phthalate	N/A	N/A	ug/L	708	8	8	-	0.0267	0.0307	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Fluoranthene	N/A	N/A	ug/L	6.16	8	8	-	0.00558	0.00642	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Fluorene	N/A	N/A	ug/L	3.9	8	3	5	0.00167	0.00191	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Hexachlorobenzene	N/A	N/A	ug/L	0.0003	8	8	-	0.0245	0.0282	8	0.196	0.225	8
DP Groundwater	SVOCs	Dissolved	Hexachlorobutadiene	N/A	N/A	ug/L	9.3	8	8	-	0.0144	0.0166	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Hexachlorocyclopentadiene	N/A	N/A	ug/L	5.2	8	8	-	0.304	0.349	0	0.979	1.13	0
DP Groundwater	SVOCs	Dissolved	Hexachloroethane	N/A	N/A	ug/L	540	8	8	-	0.0373	0.0429	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Indeno(1,2,3-cd)pyrene	N/A	N/A	ug/L	0.275	8	7	1	0.00274	0.00315	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Isophorone	N/A	N/A	ug/L	2,340	8	6	2	0.0277	0.0297	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Naphthalene	N/A	N/A	ug/L	193.5	8	2	3	0.0190	0.0196	0	0.0502	0.0605	0
DP Groundwater	SVOCs	Dissolved	Nitrobenzene	N/A	N/A	ug/L	540	8	8	-	0.0509	0.0586	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	N-Nitrosodimethylamine	N/A	N/A	ug/L	117	8	8	-	0.979	1.13	0	0.979	1.13	0
DP Groundwater	SVOCs	Dissolved	N-Nitrosodi-n-propylamine	N/A	N/A	ug/L	117	8	8	-	0.0361	0.0416	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	N-Nitrosodiphenylamine	N/A	N/A	ug/L	210	8	8	-	0.00833	0.00957	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	p-cresol (4-Methylphenol)	N/A	N/A	ug/L	13	3	3	-	0.0455	0.0497	0	0.413	0.450	0
DP Groundwater	SVOCs	Dissolved	Pentachlorophenol	N/A	N/A	ug/L	15	3	3	-	0.206	0.225	0	0.206	0.225	0
DP Groundwater	SVOCs	Dissolved	Phenanthrene	N/A	N/A	ug/L	6.3	8	2	6	0.00403	0.00417	0	0.0196	0.0225	0
DP Groundwater	SVOCs	Dissolved	Phenol	N/A	N/A	ug/L	110	4	1	3	0.00483	0.00483	0	0.196	0.225	0
DP Groundwater	SVOCs	Dissolved	Pyrene	N/A	N/A	ug/L	10.11	8	8	-	0.00284	0.00327	0	0.0196	0.0225	0
DP Groundwater	VOCs	Total	1,1,1,2-Tetrachloroethane	N/A	N/A	ug/L	186	10	10	-	0.0528	0.0528	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,1,1-Trichloroethane (TCA)	N/A	N/A	ug/L	11	10	3	6	0.0477	0.0477	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,1,2,2-Tetrachloroethane	N/A	N/A	ug/L	2,400	10	10	-	0.0680	0.0680	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,1,2-Trichloroethane	N/A	N/A	ug/L	9,400	10	10	-	0.0627	0.0627	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,1-Dichloroethane	N/A	N/A	ug/L	47	10	5	4	0.0360	0.0360	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,1-Dichloroethene	N/A	N/A	ug/L	25	10	8	1	0.0595	0.0595	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,1-Dichloropropene	N/A	N/A	ug/L	NV	10	10	-	0.0695	0.0695	-	1.00	1.00	-
DP Groundwater	VOCs	Total	1,2,3-Trichlorobenzene	N/A	N/A	ug/L	8	10	10	-	0.0605	0.0605	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,2,3-Trichloropropane	N/A	N/A	ug/L	NV	10	10	-	0.123	0.123	-	1.00	1.00	-
DP Groundwater	VOCs	Total	1,2,4-Trichlorobenzene	N/A	N/A	ug/L	110	10	10	-	0.0513	1.00	0	1.00	1.00	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
DP Groundwater	VOCs	Total	1,2,4-Trimethylbenzene	N/A	N/A	ug/L	7.3	10	7	3	0.0283	0.0283	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,2-Dibromo-3-chloropropane	N/A	N/A	ug/L	NV	10	10	-	0.222	0.222	-	1.00	1.00	-
DP Groundwater	VOCs	Total	1,2-Dibromoethane (EDB)	N/A	N/A	ug/L	NV	10	10	-	0.0637	0.0637	-	1.00	1.00	-
DP Groundwater	VOCs	Total	1,2-Dichlorobenzene	N/A	N/A	ug/L	14	10	10	-	0.0383	0.0383	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,2-Dichloroethane (EDC)	N/A	N/A	ug/L	20,000	10	10	-	0.0533	0.0533	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,2-Dichloropropane	N/A	N/A	ug/L	5,700	10	10	-	0.0380	0.0380	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,3,5-Trimethylbenzene	N/A	N/A	ug/L	7.3	10	9	1	0.0249	0.0249	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,3-Dichlorobenzene	N/A	N/A	ug/L	71	10	10	-	0.0599	0.0599	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,3-Dichloropropane	N/A	N/A	ug/L	5,700	10	10	-	0.0738	0.0738	0	1.00	1.00	0
DP Groundwater	VOCs	Total	1,4-Dichlorobenzene	N/A	N/A	ug/L	15	10	10	-	0.0180	0.0180	0	1.00	1.00	0
DP Groundwater	VOCs	Total	2,2-Dichloropropane	N/A	N/A	ug/L	5,700	10	7	3	0.0487	0.0487	0	1.00	1.00	0
DP Groundwater	VOCs	Total	2-Butanone (MEK)	N/A	N/A	ug/L	14,000	10	10	-	1.71	1.71	0	5.00	5.00	0
DP Groundwater	VOCs	Total	2-Chlorotoluene	N/A	N/A	ug/L	NV	10	10	-	0.0857	0.0857	-	1.00	1.00	-
DP Groundwater	VOCs	Total	2-Hexanone	N/A	N/A	ug/L	99	10	10	-	0.993	0.993	0	5.00	5.00	0
DP Groundwater	VOCs	Total	4-Chlorotoluene	N/A	N/A	ug/L	NV	10	10	-	0.0491	0.0491	-	1.00	1.00	-
DP Groundwater	VOCs	Total	4-Isopropyltoluene	N/A	N/A	ug/L	NV	10	10	-	0.0397	0.0397	-	1.00	1.00	-
DP Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	N/A	ug/L	170	10	10	-	0.309	0.309	0	5.00	5.00	0
DP Groundwater	VOCs	Total	Acetone	N/A	N/A	ug/L	1,500	10	7	3	1.20	1.20	0	5.00	5.00	0
DP Groundwater	VOCs	Total	Benzene	N/A	N/A	ug/L	130	10	4	6	0.0417	0.0417	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Bromobenzene	N/A	N/A	ug/L	NV	10	10	-	0.0475	0.0475	-	1.00	1.00	-
DP Groundwater	VOCs	Total	Bromochloromethane	N/A	N/A	ug/L	NV	10	10	-	0.0573	0.0573	-	1.00	1.00	-
DP Groundwater	VOCs	Total	Bromodichloromethane	N/A	N/A	ug/L	NV	10	10	-	0.0785	0.0785	-	1.00	1.00	-
DP Groundwater	VOCs	Total	Bromoform	N/A	N/A	ug/L	320	10	9	1	0.0830	0.0830	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Bromomethane	N/A	N/A	ug/L	16	10	10	-	0.0748	1.00	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Carbon Disulfide	N/A	N/A	ug/L	0.92	10	9	1	0.0494	1.00	4	1.00	1.00	10
DP Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	N/A	ug/L	74	10	10	-	0.0970	0.0970	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Chlorobenzene	N/A	N/A	ug/L	50	10	10	-	0.0376	0.0376	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Chloroethane	N/A	N/A	ug/L	NV	10	10	-	0.187	0.187	-	1.00	1.00	-
DP Groundwater	VOCs	Total	Chloroform	N/A	N/A	ug/L	1,240	10	8	2	0.0717	0.0717	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Chloromethane	N/A	N/A	ug/L	NV	10	10	-	0.110	0.110	-	1.00	1.00	-
DP Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	N/A	ug/L	590	10	1	3	0.0433	0.0433	0	1.00	1.00	0
DP Groundwater	VOCs	Total	cis-1,3-Dichloropropene	N/A	N/A	ug/L	0.055	10	10	-	0.0301	0.0301	0	1.00	1.00	10
DP Groundwater	VOCs	Total	Dibromochloromethane	N/A	N/A	ug/L	NV	10	10	-	0.0539	0.0539	-	1.00	1.00	-
DP Groundwater	VOCs	Total	Dibromomethane	N/A	N/A	ug/L	NV	10	10	-	0.0864	0.0864	-	1.00	1.00	-
DP Groundwater	VOCs	Total	Dichlorodifluoromethane	N/A	N/A	ug/L	NV	10	10	-	0.0575	0.0575	-	1.00	1.00	-
DP Groundwater	VOCs	Total	Dichloromethane (Methylene Chloride)	N/A	N/A	ug/L	2,200	10	10	-	0.0752	1.00	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Ethylbenzene	N/A	N/A	ug/L	7.3	10	6	4	0.0226	1.00	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Hexachlorobutadiene	N/A	N/A	ug/L	9.3	10	10	-	0.152	0.152	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Isopropylbenzene	N/A	N/A	ug/L	7.3	10	9	1	0.0165	0.0165	0	1.00	1.00	0
DP Groundwater	VOCs	Total	m,p-Xylenes	N/A	N/A	ug/L	13	10	6	4	0.0718	0.0718	0	2.00	2.00	0
DP Groundwater	VOCs	Total	Naphthalene	N/A	N/A	ug/L	193.5	10	8	2	0.0317	1.00	0	1.00	1.00	0
DP Groundwater	VOCs	Total	n-Butylbenzene	N/A	N/A	ug/L	NV	10	10	-	0.0603	0.0603	-	1.00	1.00	-
DP Groundwater	VOCs	Total	n-Propylbenzene	N/A	N/A	ug/L	7.3	10	10	-	0.0356	0.0356	0	1.00	1.00	0
DP Groundwater	VOCs	Total	o-Xylene	N/A	N/A	ug/L	350	10	6	4	0.0265	0.0265	0	1.00	1.00	0
DP Groundwater	VOCs	Total	sec-Butylbenzene	N/A	N/A	ug/L	NV	10	10	-	0.0358	0.0358	-	1.00	1.00	-
DP Groundwater	VOCs	Total	Styrene	N/A	N/A	ug/L	72	10	10	-	0.0279	0.0279	0	1.00	1.00	0
DP Groundwater	VOCs	Total	tert-Butylbenzene	N/A	N/A	ug/L	NV	10	10	-	0.0535	0.0535	-	1.00	1.00	-
DP Groundwater	VOCs	Total	Tetrachloroethene (PCE)	N/A	N/A	ug/L	840	10	0	3	-	-	0	1.00	1.00	0

Table K-6
Ecological Data Sensitivity Analysis for Sandblast Area AOPC Samples
Bradford Island - Upland Operable Unit
(19 of 19)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Sieve Size	Unit	Lowest Ecological SLV	Number of Samples	Number of Non-Detects (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
DP Groundwater	VOCs	Total	Toluene	N/A	N/A	ug/L	9.8	10	4	6	0.0588	1.00	0	1.00	1.00	0
DP Groundwater	VOCs	Total	trans-1,2-Dichloroethene	N/A	N/A	ug/L	590	10	7	1	0.0584	0.0584	0	1.00	1.00	0
DP Groundwater	VOCs	Total	trans-1,3-Dichloropropene	N/A	N/A	ug/L	0.055	10	10	-	0.0539	0.0539	0	1.00	1.00	10
DP Groundwater	VOCs	Total	Trichloroethene (TCE)	N/A	N/A	ug/L	3,000	10	1	5	0.0641	0.0641	0	1.00	1.00	0
DP Groundwater	VOCs	Total	Trichlorofluoromethane	N/A	N/A	ug/L	NV	10	10	-	0.0620	0.0620	-	1.00	1.00	-
DP Groundwater	VOCs	Total	Vinyl Acetate	N/A	N/A	ug/L	16	10	10	-	0.320	1.01	0	5.00	5.00	0
DP Groundwater	VOCs	Total	Vinyl Chloride	N/A	N/A	ug/L	1,300	10	8	2	0.0604	0.0604	0	1.00	1.00	0

Notes
(1) The SLV for Total LPAHs was used for the individual LPAHs.
(2) The SLV for Total HPAHs was used for the individual HPAHs.
The erodible soil subset is comprised of the following samples: SB-EUA, SB-EUB, SB-EUA-02, SB-EUA-04, SB-EUA-06, SB-EUA-08, SB-EUB-02, SB-EUB-03, SB-EUB-12, SB-EUB-15, and SB-04.
= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.
= When the number of applicable MRLs > SLV is higher than the number of applicable MDLs > SLV, they are highlited pink when the number of MDLs > SLV is zero or difference is more than 1.

DP = Direct Push
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit
N/A = not applicable
ND = non-detect
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
NV = No value
PCB = polychlorinated biphenyl
SVOC = semi-volatile organic carbon
VOC = volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter

Table K-7
Ecological Data Sensitivity Analysis for Pistol Range AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 1)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MRLs > SLV
Soil	Metals	Total	Antimony	0-1 ft	mg/kg	0.270	5	5	-	5.00	6.00	5	5.00	6.00	5
Soil	Metals	Total	Arsenic	0-1 ft	mg/kg	18.0	5	5	-	5.00	6.00	0	5.00	6.00	0
Soil	Metals	Total	Mercury	0-1 ft	mg/kg	0.066	14	14	-	0.0400	0.0600	0	0.0400	0.0600	0
DP Groundwater	Metals	Dissolved	Lead	N/A	ug/L	1.44	2	2	-	0.0200	0.0200	0	0.0200	0.0200	0
DP Groundwater	Metals	Dissolved	Nickel	N/A	ug/L	34	2	1	1	2.00	2.00	0	20.0	20.0	0

Notes

= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

DP = Direct Push
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit
N/A = not applicable
ND = non-detect
ug/L = micrograms per liter

Table K-8
Ecological Data Sensitivity Analysis for Bulb Slope AOPC Samples
Bradford Island - Upland Operable Unit
(1 of 1)

Medium	Analyte Group	Preparation Fraction	Analyte	Depth Category	Unit	Lowest Ecological SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of MDLs > SLV
Soil	PCB Aroclors	Total	Aroclor 1016	0-1 ft	ug/kg	371	12	12	-	19.0	67.0	0	19.0	67.0	0
Soil	PCB Aroclors	Total	Aroclor 1221	0-1 ft	ug/kg	371	12	12	-	38.0	134	0	38.0	134	0
Soil	PCB Aroclors	Total	Aroclor 1232	0-1 ft	ug/kg	371	12	12	-	19.0	67.0	0	19.0	67.0	0
Soil	PCB Aroclors	Total	Aroclor 1242	0-1 ft	ug/kg	371	12	12	-	19.0	67.0	0	19.0	67.0	0
Soil	PCB Aroclors	Total	Aroclor 1248	0-1 ft	ug/kg	371	12	12	-	19.0	67.0	0	19.0	67.0	0
Soil	PCB Aroclors	Total	Aroclor 1254	0-1 ft	ug/kg	371	12	12	-	19.0	67.0	0	19.0	67.0	0
Soil	PCB Aroclors	Total	Aroclor 1260	0-1 ft	ug/kg	371	12	4	-	19.0	67.0	0	19.0	67.0	0
Soil	PCB Aroclors	Total	Total PCBs as Aroclors (NDs at MDL)	0-1 ft	ug/kg	371	12	4	-	19.0	67.0	0	19.0	67.0	0

Notes
MDL = method detection limit
MRL = methode reporting limit
ND = non-detect
PCB = polychlorinated biphenyl
ug/kg = micrograms per kilogram

Table K-9
Human Health Data Sensativity Analysis for Pre-Sediment Removal Forebay Samples
Bradford Island - River Operable Unit
(1 of 1)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	NV	5	0	4	-	-	-	31.0	44.0	-
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	NV	5	0	5	-	-	-	130	180	-
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	0.048	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	0.048	5	5	-	2.60	5.80	5	16.0	34.0	5
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	0.048	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	0.048	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	0.048	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	0.048	5	1	-	5.80	5.80	1	17.0	17.0	1
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	0.048	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	0.048	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	0.048	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Dry	0.048	5	1	-	11.6	11.6	1	34.0	34.0	1
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	NV	5	1	3	7.00	7.00	-	77.0	170	-
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	NV	5	4	1	3.20	3.20	-	7.70	17.0	-
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	NV	5	4	1	1.30	1.30	-	7.70	17.0	-
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	NV	5	0	5	-	-	-	16.0	34.0	-
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	NV	5	5	-	1.70	2.90	-	7.70	85.0	-
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	NV	5	3	1	2.90	4.70	-	8.40	17.0	-
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	62,000	5	5	-	1.40	2.40	0	7.70	17.0	0
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	62,000	5	4	1	1.40	14.0	0	8.40	78.0	0
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	62,000	5	5	-	1.10	1.90	0	7.70	17.0	0
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	62,000	5	0	4	-	-	0	8.10	17.0	0
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	47,000	5	0	5	-	-	0	7.70	17.0	0
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	47,000	5	2	2	2.60	16.0	0	8.40	78.0	0
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	47,000	5	0	4	-	-	0	8.10	17.0	0
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	47,000	5	0	5	-	-	0	7.70	17.0	0
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	47,000	5	0	5	-	-	0	7.70	17.0	0
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	47,000	5	0	4	-	-	0	8.10	17.0	0
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	47,000	5	3	2	1.50	1.50	0	7.70	17.0	0
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	62,000	5	0	3	-	-	0	8.20	17.0	0
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	47,000	5	0	5	-	-	0	7.70	17.0	0
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	47,000	5	0	4	-	-	0	8.10	17.0	0

Notes

= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

Dry = Dry weight
HH = human health
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit
ND = non-detect
NV = No value
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
PCB = polychlorinated biphenyl
SLV = screening level value
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
Wet = Wet Weight

Table K-10a
Human Health Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
(1 of 5)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Surface Water	Metals	Dissolved	Aluminum	ug/L	Wet	37,000	5	5	-	20.0	50.0	0	50.0	50.0	0
Surface Water	Metals	Dissolved	Antimony	ug/L	Wet	5.60	5	5	-	7.00	50.0	5	50.0	50.0	5
Surface Water	Metals	Dissolved	Beryllium	ug/L	Wet	73.0	5	3	2	0.0200	0.0200	0	0.0200	0.0200	0
Surface Water	Metals	Dissolved	Cadmium	ug/L	Wet	18.0	5	3	2	7.00	8.00	0	20.0	20.0	5
Surface Water	Metals	Dissolved	Chromium	ug/L	Wet	55,000	5	5	-	2.00	2.00	0	5.00	5.00	0
Surface Water	Metals	Dissolved	Cobalt	ug/L	Wet	11.0	5	5	-	2.00	2.00	0	10.0	10.0	0
Surface Water	Metals	Dissolved	Lead	ug/L	Wet	15.0	5	2	1	0.00300	0.00900	0	0.0200	0.0200	0
Surface Water	Metals	Dissolved	Mercury	ug/L	Wet	11.0	5	5	-	0.0300	0.0300	0	0.200	0.200	0
Surface Water	Metals	Dissolved	Nickel	ug/L	Wet	610	5	5	-	2.00	2.00	0	20.0	20.0	0
Surface Water	Metals	Dissolved	Vanadium	ug/L	Wet	2.60	5	5	-	5.00	5.00	5	10.0	10.0	5
Surface Water	Metals	Dissolved	Zinc	ug/L	Wet	7,400	5	4	1	7.00	7.00	0	10.0	10.0	0
Surface Water	Metals	Total	Aluminum	ug/L	Wet	37,000	5	2	-	145	152	0	145	152	0
Surface Water	Metals	Total	Antimony	ug/L	Wet	5.60	5	5	-	7.00	50.0	5	50.0	50.0	5
Surface Water	Metals	Total	Beryllium	ug/L	Wet	73.0	5	3	2	0.0200	0.0200	0	0.0200	0.0200	0
Surface Water	Metals	Total	Cadmium	ug/L	Wet	18.0	5	0	5	-	-	0	0.0200	0.0200	0
Surface Water	Metals	Total	Chromium	ug/L	Wet	55,000	5	5	-	2.00	2.00	0	5.00	5.00	0
Surface Water	Metals	Total	Cobalt	ug/L	Wet	11.0	5	5	-	2.00	2.00	0	10.0	10.0	0
Surface Water	Metals	Total	Mercury	ug/L	Wet	11.0	5	5	-	0.0300	0.0300	0	0.200	0.200	0
Surface Water	Metals	Total	Nickel	ug/L	Wet	610	5	5	-	2.00	2.00	0	20.0	20.0	0
Surface Water	Metals	Total	Vanadium	ug/L	Wet	2.60	5	5	-	5.00	5.00	5	10.0	10.0	5
Surface Water	Metals	Total	Zinc	ug/L	Wet	7,400	5	5	-	7.00	7.00	0	10.0	10.0	0
Surface Water	NWTPH-Dx	Dissolved	Diesel Range Organics	ug/L	Wet	90.0	5	0	5	-	-	0	100	120	5
Surface Water	NWTPH-Dx	Dissolved	Residual Range Organics	ug/L	Wet	290	5	5	-	19.0	120	0	100	120	0
Surface Water	NWTPH-Dx	Total	Diesel Range Organics	ug/L	Wet	90.0	5	3	2	11.0	11.0	0	100	120	5
Surface Water	NWTPH-Dx	Total	Residual Range Organics	ug/L	Wet	290	5	5	-	19.0	120	0	100	120	0
Surface Water	SVOCs	Column	Acenaphthene	ng/L	Wet		5	0	0	-	-	0	-	-	0
Surface Water	SVOCs	Filter	Acenaphthene	ng/L	Wet	670,000	5	5	-	0.0150	0.0329	0	0.0150	0.0329	0
Surface Water	SVOCs	C+F	Acenaphthene	ng/L	Wet		5	-	-	0.0150	0.0329	0	0.0150	0.0329	0
Surface Water	SVOCs	Column	Anthracene	ng/L	Wet		5	5	-	0.0569	0.103	0	0.0569	0.103	0
Surface Water	SVOCs	Filter	Anthracene	ng/L	Wet	8,300,000	5	0	0	-	-	0	-	-	0
Surface Water	SVOCs	C+F	Anthracene	ng/L	Wet		5	-	-	0.0569	0.103	0	0.0569	0.103	0
Surface Water	SVOCs	Column	Benzo(a)anthracene	ng/L	Wet		5	2	-	0.00830	0.0116	0	0.0116	0.0116	0
Surface Water	SVOCs	Filter	Benzo(a)anthracene	ng/L	Wet	3.80	5	5	-	0.0288	0.0519	0	0.0288	0.0519	0
Surface Water	SVOCs	C+F	Benzo(a)anthracene	ng/L	Wet		5	-	-	0.0371	0.0635	0	0.0404	0.0635	0
Surface Water	SVOCs	Column	Benzo(a)pyrene	ng/L	Wet		5	5	-	0.0131	0.0269	0	0.0131	0.0269	0
Surface Water	SVOCs	Filter	Benzo(a)pyrene	ng/L	Wet	2.90	5	5	-	0.0221	0.0582	0	0.0221	0.0582	0
Surface Water	SVOCs	C+F	Benzo(a)pyrene	ng/L	Wet		5	-	-	0.0352	0.0851	0	0.0352	0.0851	0
Surface Water	SVOCs	Column	Benzo(b)fluoranthene	ng/L	Wet		5	5	-	0.00920	0.0182	0	0.0107	0.0182	0
Surface Water	SVOCs	Filter	Benzo(b)fluoranthene	ng/L	Wet	3.80	5	3	-	0.0333	0.0774	0	0.0333	0.0422	0
Surface Water	SVOCs	C+F	Benzo(b)fluoranthene	ng/L	Wet		5	-	-	0.0425	0.0956	0	0.0440	0.0604	0
Surface Water	SVOCs	Column	Benzo(g,h,i)perylene	ng/L	Wet		5	5	-	0.00980	0.0195	0	0.00980	0.0195	0
Surface Water	SVOCs	Filter	Benzo(g,h,i)perylene	ng/L	Wet	290	5	5	-	0.0241	0.0523	0	0.0041	0.0523	0
Surface Water	SVOCs	C+F	Benzo(g,h,i)perylene	ng/L	Wet		5	-	-	0.0339	0.0718	0	0.0339	0.0718	0

Table K-10a
Human Health Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
(2 of 5)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Surface Water	SVOCs	Column	Benzo(j,k)flouranthenes	ng/L	Wet	3.80	5	5	-	0.0100	0.0208	0	0.0100	0.0208	0
Surface Water	SVOCs	Filter	Benzo(j,k)flouranthenes	ng/L	Wet		5	5	-	0.0318	0.0497	0	0.0318	0.0497	0
Surface Water	SVOCs	C+F	Benzo(j,k)flouranthenes	ng/L	Wet		5	-	-	0.0418	0.0705	0	0.0418	0.0705	0
Surface Water	SVOCs	Column	Bis(2-ethylhexyl) Phthalate	ng/L	Wet	1,200	5	5	-	6.52	11.8	0	6.52	11.8	0
Surface Water	SVOCs	Filter	Bis(2-ethylhexyl) Phthalate	ng/L	Wet		5	5	-	3.41	4.63	0	3.41	4.63	0
Surface Water	SVOCs	C+F	Bis(2-ethylhexyl) Phthalate	ng/L	Wet		5	-	-	9.93	16.4	0	9.93	16.4	0
Surface Water	SVOCs	Column	Butyl Benzyl Phthalate	ng/L	Wet	35,000	5	5	-	0.260	2.29	0	0.260	2.29	0
Surface Water	SVOCs	Filter	Butyl Benzyl Phthalate	ng/L	Wet		5	5	-	0.150	0.198	0	0.150	0.198	0
Surface Water	SVOCs	C+F	Butyl Benzyl Phthalate	ng/L	Wet		5	-	-	0.410	2.49	0	0.410	2.49	0
Surface Water	SVOCs	Column	Chrysene	ng/L	Wet	3.80	5	0	0	-	-	0	-	-	0
Surface Water	SVOCs	Filter	Chrysene	ng/L	Wet		5	3	-	0.0626	0.0844	0	0.0626	0.0844	0
Surface Water	SVOCs	C+F	Chrysene	ng/L	Wet		5	-	-	0.0626	0.0844	0	0.0626	0.0844	0
Surface Water	SVOCs	Column	Dibenz(a,h)anthracene	ng/L	Wet	2.90	5	5	-	0.0107	0.0212	0	0.0107	0.0212	0
Surface Water	SVOCs	Filter	Dibenz(a,h)anthracene	ng/L	Wet		5	5	-	0.0187	0.0395	0	0.0187	0.0395	0
Surface Water	SVOCs	C+F	Dibenz(a,h)anthracene	ng/L	Wet		5	-	-	0.0294	0.0607	0	0.0294	0.0607	0
Surface Water	SVOCs	Column	Di-n-butyl Phthalate	ng/L	Wet	2,000,000	5	5	-	0.562	1.97	0	0.562	1.97	0
Surface Water	SVOCs	Filter	Di-n-butyl Phthalate	ng/L	Wet		5	5	-	0.200	0.303	0	0.200	0.303	0
Surface Water	SVOCs	C+F	Di-n-butyl Phthalate	ng/L	Wet		5	-	-	0.762	2.27	0	0.7620	2.27	0
Surface Water	SVOCs	Column	Di-n-octyl Phthalate	ng/L	Wet	1,200	5	5	-	0.110	0.852	0	0.110	0.852	0
Surface Water	SVOCs	Filter	Di-n-octyl Phthalate	ng/L	Wet		5	5	-	0.0960	0.249	0	0.0960	0.249	0
Surface Water	SVOCs	C+F	Di-n-octyl Phthalate	ng/L	Wet		5	-	-	0.206	1.10	0	0.206	1.10	0
Surface Water	SVOCs	Column	Fluoranthene	ng/L	Wet	130,000	5	5	-	0.516	0.572	0	0.516	0.572	0
Surface Water	SVOCs	Filter	Fluoranthene	ng/L	Wet		5	0	0	-	-	0	-	-	0
Surface Water	SVOCs	C+F	Fluoranthene	ng/L	Wet		5	-	-	0.516	0.572	0	0.516	0.572	0
Surface Water	SVOCs	Column	Indeno(1,2,3-cd)pyrene	ng/L	Wet	3.80	5	5	-	0.0101	0.0202	0	0.0101	0.0202	0
Surface Water	SVOCs	Filter	Indeno(1,2,3-cd)pyrene	ng/L	Wet		5	5	-	0.0293	0.0459	0	0.0293	0.0459	0
Surface Water	SVOCs	C+F	Indeno(1,2,3-cd)pyrene	ng/L	Wet		5	-	-	0.0394	0.0661	0	0.0394	0.0661	0
Surface Water	SVOCs	Column	Phenanthrene	ng/L	Wet	8,300,000	5	0	0	-	-	0	-	-	0
Surface Water	SVOCs	Filter	Phenanthrene	ng/L	Wet		5	4	-	0.0660	0.107	0	0.0660	0.107	0
Surface Water	SVOCs	C+F	Phenanthrene	ng/L	Wet		5	-	-	0.0660	0.107	0	0.0660	0.107	0
Sediment	Metals	Total	Antimony	mg/kg	Dry	0.427	19	1	2	0.0400	0.0400	0	0.0600	0.0600	0
Sediment	Metals	Total	Cadmium	mg/kg	Dry	0.674	19	2	-	0.115	0.121	0	0.115	0.121	0
Sediment	Metals	Total	Mercury	mg/kg	Dry	0.214	19	0	1	-	-	0	0.0200	0.0200	0
Sediment	Metals	Total	Thallium	mg/kg	Dry	0.354	19	4	-	0.108	0.132	0	0.108	0.132	0
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	NV	19	0	12	-	-	-	13.0	18.0	-
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	NV	19	7	12	130	180	-	130	200	-
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	0.0480	19	19	-	1.70	10.0	19	6.40	10.0	19
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	0.0480	19	19	-	1.70	29.0	19	13.0	29.0	19
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	0.0480	19	19	-	1.70	18.0	19	6.40	18.0	19
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	0.0480	19	19	-	1.70	5.70	19	6.40	10.0	19
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	0.0480	19	19	-	1.70	4.00	19	6.40	10.0	19
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	0.0480	19	17	1	1.70	2.60	17	6.40	10.0	18
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	0.0480	19	19	-	1.70	4.70	19	6.40	10.0	19
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	0.0480	19	19	-	1.70	1.70	19	6.40	10.0	19
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	0.0480	19	19	-	1.70	1.70	19	6.40	10.0	19

Table K-10a
Human Health Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
(3 of 5)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Dry	0.0480	19	17	-	3.40	8.10	17	12.8	20.0	17
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	NV	19	16	2	200	200	-	200	200	-
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	NV	19	19	-	1.50	10.0	-	9.80	10.0	-
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	NV	19	18	1	1.30	1.30	-	9.80	10.0	-
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	NV	19	19	-	9.80	19.0	-	9.80	19.0	-
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	NV	19	19	-	1.20	1.20	-	9.80	10.0	-
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	NV	19	13	3	2.90	2.90	-	9.80	10.0	-
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	62,000	19	19	-	1.00	1.00	0	9.80	10.0	0
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	62,000	19	14	5	1.40	1.40	0	9.80	10.0	0
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	62,000	19	19	-	1.70	1.70	0	9.80	10.0	0
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	62,000	19	5	14	1.30	1.30	0	9.80	10.0	0
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	47,000	19	7	11	1.40	1.40	0	9.80	10.0	0
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	47,000	19	8	11	1.60	1.60	0	9.80	10.0	0
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	47,000	19	10	9	2.50	2.50	0	9.80	10.0	0
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	47,000	19	10	9	2.30	2.30	0	9.80	10.0	0
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	47,000	19	14	5	2.50	2.50	0	9.80	10.0	0
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	47,000	19	3	14	1.40	1.40	0	9.80	10.0	0
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	47,000	19	19	-	2.20	2.20	0	9.80	10.0	0
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	62,000	19	4	13	2.20	2.20	0	9.80	10.0	0
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	47,000	19	10	9	1.90	1.90	0	9.80	10.0	0
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	47,000	19	3	13	1.30	1.30	0	9.80	10.0	0
Crayfish	Metals	Total	Antimony	mg/kg	Wet	NV	17	0	4	-	-	-	0.0120	0.0130	-
Crayfish	Metals	Total	Beryllium	mg/kg	Wet	NV	17	0	17	-	-	-	0.00420	0.00630	-
Crayfish	Metals	Total	Chromium	mg/kg	Wet	NV	17	0	1	-	-	-	0.3	0.3	-
Crayfish	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	0.570	17	17	-	2.40	2.40	17	9.60	10.0	17
Crayfish	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	0.570	17	17	-	2.60	2.60	17	20.0	20.0	17
Crayfish	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	0.570	17	17	-	2.30	2.30	17	9.60	10.0	17
Crayfish	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	0.570	17	17	-	2.20	2.20	17	9.60	10.0	17
Crayfish	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	0.570	17	17	-	0.510	0.510	0	9.60	10.0	17
Crayfish	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	0.570	17	17	-	1.80	19.0	17	9.60	19.0	17
Crayfish	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	0.570	17	17	-	1.90	17.0	17	9.60	17.0	17
Crayfish	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	0.570	17	17	-	2.50	10.0	17	9.60	10.0	17
Crayfish	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	0.570	17	17	-	2.00	2.00	17	9.60	10.0	17
Crayfish	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	0.570	17	17	-	2.60	19.0	17	20.0	20.0	17
Crayfish	SVOCs	Total	Acenaphthene	ug/kg	Wet	15,000	15	8	7	0.110	0.110	0	0.460	0.500	0
Crayfish	SVOCs	Total	Anthracene	ug/kg	Wet	15,000	15	11	4	0.0650	0.0650	0	0.460	0.500	0
Crayfish	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	1.57	15	5	10	0.0660	0.0660	0	0.460	0.500	0
Crayfish	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	0.157	15	12	3	0.0810	0.0810	0	0.460	0.500	15
Crayfish	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1.57	15	8	7	0.0700	0.0700	0	0.460	0.500	0
Crayfish	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	15.7	15	11	4	0.0730	0.0730	0	0.460	0.500	0
Crayfish	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	15.7	15	8	7	0.0560	0.0560	0	0.460	0.500	0
Crayfish	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	81.9	15	11	4	66.0	66.0	0	180	200	15
Crayfish	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	604	15	15	-	7.30	7.30	0	35.0	40.0	0
Crayfish	SVOCs	Total	Carbazole	ug/kg	Wet	NV	15	15	-	9.10	9.10	-	35.0	40.0	-
Crayfish	SVOCs	Total	Chrysene	ug/kg	Wet	157	15	7	8	0.0760	0.0760	0	0.460	0.500	0

Table K-10a
Human Health Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
(4 of 5)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Crayfish	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	0.157	15	15	-	0.0590	0.0590	0	0.460	0.500	15
Crayfish	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	49,200	15	15	-	16.0	180	0	35.0	180	0
Crayfish	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	49,200	15	15	-	11.0	11.0	0	35.0	40.0	0
Crayfish	SVOCs	Total	Fluoranthene	ug/kg	Wet	20,000	15	0	12	-	-	0	0.460	0.500	0
Crayfish	SVOCs	Total	Fluorene	ug/kg	Wet	15,000	15	10	5	0.150	0.150	0	0.460	0.500	0
Crayfish	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	1.57	15	12	3	0.0640	0.0640	0	0.460	0.500	0
Crayfish	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	NV	15	15	-	7.70	7.70	-	35.0	40.0	-
Crayfish	SVOCs	Total	Phenanthrene	ug/kg	Wet	15,000	15	5	4	0.360	0.360	0	0.460	0.500	0
Crayfish	SVOCs	Total	Pyrene	ug/kg	Wet	15,000	15	0	14	-	-	0	0.460	0.500	0
Largescale Sucker	Metals	Total	Antimony	mg/kg	Wet	NV	1	1	-	0.00600	0.00600	-	0.0160	0.0160	-
Largescale Sucker	Metals	Total	Beryllium	mg/kg	Wet	NV	1	1	-	0.000600	0.000600	-	0.00640	0.00640	-
Largescale Sucker	Metals	Total	Thallium	mg/kg	Wet	NV	1	0	1	-	-	-	0.0064	0.0064	-
Largescale Sucker	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	0.570	1	1	-	2.40	2.40	1	10.0	10.0	1
Largescale Sucker	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	0.570	1	1	-	2.60	2.60	1	20.0	20.0	1
Largescale Sucker	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	0.570	1	1	-	2.30	2.30	1	10.0	10.0	1
Largescale Sucker	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	0.570	1	1	-	2.20	2.20	1	10.0	10.0	1
Largescale Sucker	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	0.570	1	1	-	0.510	0.510	0	10.0	10.0	1
Largescale Sucker	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	0.570	1	1	-	1.90	1.90	1	10.0	10.0	1
Largescale Sucker	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	0.570	1	1	-	2.00	2.00	1	10.0	10.0	1
Largescale Sucker	SVOCs	Total	Acenaphthene	ug/kg	Wet	15,000	1	1	-	1.10	1.10	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	Anthracene	ug/kg	Wet	15,000	1	0	1	-	-	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	1.57	1	1	-	0.660	0.660	0	4.60	4.60	1
Largescale Sucker	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1.57	1	1	-	0.700	0.700	0	4.60	4.60	1
Largescale Sucker	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	15.7	1	0	1	-	-	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	81.9	1	1	-	66.0	66.0	0	180	180	1
Largescale Sucker	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	604	1	1	-	7.30	7.30	0	35.0	35.0	0
Largescale Sucker	SVOCs	Total	Carbazole	ug/kg	Wet	NV	1	1	-	9.10	9.10	-	35.0	35.0	-
Largescale Sucker	SVOCs	Total	Chrysene	ug/kg	Wet	157	1	1	-	0.760	0.760	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	0.157	1	0	1	-	-	0	4.60	4.60	1
Largescale Sucker	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	49,200	1	1	-	16.0	16.0	0	35.0	35.0	0
Largescale Sucker	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	49,200	1	1	-	11.0	11.0	0	35.0	35.0	0
Largescale Sucker	SVOCs	Total	Fluorene	ug/kg	Wet	15,000	1	1	-	1.50	1.50	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	NV	1	1	-	7.70	7.70	-	35.0	35.0	-
Largescale Sucker	SVOCs	Total	Phenanthrene	ug/kg	Wet	15,000	1	0	1	-	-	0	4.60	4.60	0
Smallmouth Bass	Metals	Total	Antimony	mg/kg	Wet	NV	19	19	-	0.00500	0.00600	-	0.0120	0.0150	-
Smallmouth Bass	Metals	Total	Beryllium	mg/kg	Wet	NV	19	15	4	0.000500	0.000600	-	0.00480	0.00590	-
Smallmouth Bass	Metals	Total	Cadmium	mg/kg	Wet	0.490	19	0	4	-	-	0	0.00500	0.00600	0
Smallmouth Bass	Metals	Total	Chromium	mg/kg	Wet	NV	19	14	2	0.120	0.150	-	0.240	0.300	-
Smallmouth Bass	Metals	Total	Lead	mg/kg	Wet	0.500	19	0	3	-	-	0	0.00500	0.00600	0
Smallmouth Bass	Metals	Total	Vanadium	mg/kg	Wet	NV	19	0	7	-	-	-	0.0500	0.0600	-
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	0.570	19	19	-	2.40	240	19	9.90	1,000	19
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	0.570	19	19	-	2.60	260	19	20.0	2,000	19
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	0.570	19	19	-	2.30	230	19	9.90	1,000	19
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	0.570	19	18	-	2.20	220	18	9.90	1,000	18
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	0.570	19	19	-	0.510	68.0	13	9.90	1,000	19

Table K-10a
Human Health Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
(5 of 5)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	0.570	19	12	-	11.0	420	12	11.0	420	12
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	0.570	19	19	-	1.90	300	19	10.0	1,000	19
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	0.570	19	19	-	2.50	250	19	10.0	1,000	19
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	0.570	19	19	-	2.00	200	19	9.90	1,000	19
Smallmouth Bass	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	0.570	19	12	-	17.7	424	12	21.0	430	12
Smallmouth Bass	SVOCs	Total	Acenaphthene	ug/kg	Wet	15,000	19	3	16	0.110	0.110	0	0.460	5.00	0
Smallmouth Bass	SVOCs	Total	Anthracene	ug/kg	Wet	15,000	19	1	14	0.0650	0.0650	0	0.460	2.50	0
Smallmouth Bass	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	1.57	19	14	-	0.0660	0.660	0	0.460	5.00	3
Smallmouth Bass	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	0.157	19	11	3	0.0810	0.0810	0	0.460	1.00	14
Smallmouth Bass	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1.57	19	13	6	0.0700	0.140	0	0.460	5.00	5
Smallmouth Bass	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	15.7	19	13	6	0.0730	0.150	0	0.460	5.00	0
Smallmouth Bass	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	15.7	19	10	1	0.0560	0.0560	0	0.460	0.490	0
Smallmouth Bass	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	81.9	19	12	5	66.0	5,000	1	170	5,000	17
Smallmouth Bass	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	604	19	17	1	7.30	7.30	0	34.0	40.0	0
Smallmouth Bass	SVOCs	Total	Carbazole	ug/kg	Wet	NV	19	19	-	9.10	9.10	-	34.0	40.0	-
Smallmouth Bass	SVOCs	Total	Chrysene	ug/kg	Wet	157	19	11	7	0.0760	0.0760	0	0.460	5.00	0
Smallmouth Bass	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	0.157	19	13	6	0.0590	0.120	0	0.460	5.00	19
Smallmouth Bass	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	49,200	19	18	-	16.0	71.0	0	34.0	71.0	0
Smallmouth Bass	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	49,200	19	19	-	11.0	11.0	0	34.0	40.0	0
Smallmouth Bass	SVOCs	Total	Fluoranthene	ug/kg	Wet	20,000	19	9	2	0.0900	0.0900	0	0.460	1.00	0
Smallmouth Bass	SVOCs	Total	Fluorene	ug/kg	Wet	15,000	19	2	12	0.150	0.150	0	0.460	5.00	0
Smallmouth Bass	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	1.57	19	12	2	0.0640	0.130	0	0.460	1.00	0
Smallmouth Bass	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	NV	19	19	-	7.70	7.70	-	34.0	40.0	-
Smallmouth Bass	SVOCs	Total	Phenanthrene	ug/kg	Wet	15,000	19	0	3	-	-	0	1.00	4.80	0
Smallmouth Bass	SVOCs	Total	Pyrene	ug/kg	Wet	15,000	19	10	5	0.0980	0.490	0	0.460	2.50	0

Notes
For SVOCs: Although the column and filter fractions are screened, in addition to the totals, the SLVs are based on exposure to totals.
= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.
= When the number of applicable MRLs > SLV is higher than the number of applicable MDLs > SLV, they are highlited pink when the number of MDLs > SLV is zero or difference is more than 1.

HH = human health
C+F = Column + Filter (MDL+MDL)
Dry = Dry weight
MDL = method detection limit
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
MRL = methode reporting limit
ND = non-detect
ng/L = nanograms per liter
NV = No value
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SLV = screening level value
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
Wet = Wet Weight
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table K-10b
Human Health PCB Congener Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
(1 of 2)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs below RDL	Number of EMPC Results	Minimum RDL of NDs	Maximum RDL of NDs	Number of Applicable RDLs > SLV	Minimum EMPC Value	Maximum EMPC Value	Number of EMPCs > SLV
Surface Water	Column	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet		5	3	2	0.0290	0.0330	0	0.0480	0.0770	0
Surface Water	Filter	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet	5,200	5	2	-	0.0310	0.0390	0	-	-	-
Surface Water	C+F	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet		5	-	-	0.0640	0.0870	0	-	-	-
Surface Water	Column	81	3,4,4',5-Tetrachlorobiphenyl	pg/L	Wet		5	5	-	0.00590	0.00980	0	-	-	-
Surface Water	Filter	81	3,4,4',5-Tetrachlorobiphenyl	pg/L	Wet	5,200	5	5	-	0.00450	0.00840	0	-	-	-
Surface Water	C+F	81	3,4,4',5-Tetrachlorobiphenyl	pg/L	Wet		5	-	-	0.0111	0.0160	0	-	-	-
Surface Water	Column	114	2,3,4,4',5-Pentachlorobiphenyl	pg/L	Wet		5	5	-	0.00800	0.0150	0	-	-	-
Surface Water	Filter	114	2,3,4,4',5-Pentachlorobiphenyl	pg/L	Wet	100	5	5	-	0.0170	0.0250	0	-	-	-
Surface Water	C+F	114	2,3,4,4',5-Pentachlorobiphenyl	pg/L	Wet		5	-	-	0.0290	0.0360	0	-	-	-
Surface Water	Column	123	2,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet		5	3	2	0.00370	0.00700	0	0.00900	0.0100	0
Surface Water	Filter	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/L	Wet	5,200	5	5	-	0.0130	0.0230	0	-	-	-
Surface Water	C+F	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/L	Wet		5	-	-	0.0200	0.0330	0	-	-	-
Surface Water	Column	126	3,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet		5	5	-	0.00420	0.00600	0	-	-	-
Surface Water	Filter	126	3,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	5.2	5	5	-	0.00410	0.0112	0	-	-	-
Surface Water	C+F	126	3,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet		5	-	-	0.00950	0.0154	0	-	-	-
Surface Water	Column	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet		5	4	-	0.0230	0.0280	0	-	-	-
Surface Water	Filter	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet	1,000	5	0	-	-	-	-	-	-	-
Surface Water	C+F	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet		5	-	-	-	-	-	-	-	-
Surface Water	Column	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet		5	1	1	0.0140	0.0140	0	0.0110	0.0110	0
Surface Water	Filter	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	52,000	5	0	-	-	-	0	-	-	-
Surface Water	C+F	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet		5	-	-	-	-	0	-	-	-
Surface Water	Column	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet		5	5	-	0.00140	0.00290	0	-	-	-
Surface Water	Filter	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	52	5	5	-	0.00170	0.00880	0	-	-	-
Surface Water	C+F	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet		5	-	-	0.00420	0.0109	0	-	-	-
Surface Water	Column	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/L	Wet		5	5	-	0.00180	0.00400	0	-	-	-
Surface Water	Filter	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/L	Wet	5,200	5	3	1	0.00600	0.00800	0	0.0900	0.0900	0
Surface Water	C+F	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/L	Wet		5	-	-	0.00820	0.09250	0	-	-	-
Sediment	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Dry	2.10	19	15	4	0.0486	0.140	0	0.103	3.40	1
Sediment	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Dry	21.0	19	-	4	-	-	-	0.0580	1.71	0
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	26.0	19	2	6	0.158	0.201	0	0.0640	1.90	0
Sediment	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	0.00620	19	8	8	0.0479	2.69	8	0.123	0.296	8
Sediment	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Dry	26.0	19	1	-	0.935	0.935	0	-	-	-
Sediment	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	26.0	19	2	1	0.640	0.710	0	0.173	0.173	0
Sediment	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	0.0210	19	18	1	0.0454	0.879	18	0.161	0.161	1
Sediment	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Dry	140	19	2	8	0.0479	0.814	0	0.127	0.620	0
Crayfish	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	25.0	15	8	3	0.125	0.361	0	0.239	0.823	0
Crayfish	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	250	15	-	3	-	-	-	3.67	86.3	0
Crayfish	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	250	15	-	1	-	-	-	2.61	2.61	0
Crayfish	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	250	15	-	1	-	-	-	3.11	3.11	0
Crayfish	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	0.0760	15	8	-	0.397	3.51	8	-	-	-
Crayfish	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	0.250	15	15	-	0.167	2.95	12	-	-	-
Crayfish	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	250	15	-	3	-	-	-	1.09	1.62	0
Smallmouth Bass	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	25.0	19	2	-	6.15	23.1	0	-	-	-
Smallmouth Bass	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	0.0760	19	1	-	48.0	48.0	1	-	-	-
Smallmouth Bass	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	0.250	19	19	-	1.29	607	19	-	-	-

Table K-10b
Human Health PCB Congener Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
(2 of 2)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs below RDL	Number of EMPC Results	Minimum RDL of NDs	Maximum RDL of NDs	Number of Applicable RDLs > SLV	Minimum EMPC Value	Maximum EMPC Value	Number of EMPCs > SLV

Notes
For C+F RDL values, the values shown are the sum of the RDLs and/or EMPCs for the ND column and filter results.
= The number of applicable RDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.
= The number of applicable EMPCs > SLV are hightlighted pink when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

HH = human health
C+F = Column + Filter (RDL/EMPC + RDL/EMPC)
Dry = Dry weight
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
ND = non-detect
PCB = polychlorinated biphenyl
pg/kg = picograms per kilogram
pg/L = picograms per liter
RDL = reported detection limit
SLV = screening level value
Wet = Wet Weight

Table K-11a
Human Health Data Sensativity Analysis for Targeted Forebay Samples
Bradford Island - River Operable Unit
(1 of 3)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Forebay - Eagle Creek															
Sediment	Metals	Total	Antimony	mg/kg	Dry	0.427	2	0	1	-	-	0	0.0500	0.0500	0
Sediment	Metals	Total	Cadmium	mg/kg	Dry	0.674	2	2	-	0.0750	0.131	0	0.0750	0.131	0
Sediment	Metals	Total	Mercury	mg/kg	Dry	0.214	2	0	1	-	-	0	0.016	0.016	0
Sediment	Metals	Total	Thallium	mg/kg	Dry	0.354	2	2	-	0.0560	0.156	0	0.0560	0.156	0
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	NV	2	0	2	-	-	-	15.0	15.0	-
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	NV	2	2	-	150	150	-	150	150	-
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	0.048	2	2	-	1.70	1.70	2	7.30	7.40	2
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	0.048	2	2	-	1.70	1.70	2	15.0	15.0	2
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	0.048	2	2	-	1.70	1.70	2	7.30	7.40	2
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	0.048	2	2	-	1.70	1.70	2	7.30	7.40	2
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	0.048	2	1	-	1.70	1.70	1	7.30	7.30	1
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	0.048	2	2	-	1.70	1.70	2	7.30	7.40	2
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	0.048	2	2	-	1.70	1.70	2	7.30	7.40	2
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	0.048	2	2	-	1.70	1.70	2	7.30	7.40	2
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	0.048	2	2	-	1.70	1.70	2	7.30	7.40	2
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Dry	0.048	2	1	-	3.40	3.40	1	14.6	14.6	1
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	NV	2	2	-	200	200	-	200	200	-
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	NV	2	2	-	9.90	9.90	-	9.90	9.90	-
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	NV	2	1	1	1.30	1.30	-	9.90	9.90	-
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	NV	2	2	-	9.90	11.0	-	9.90	11.0	-
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	NV	2	2	-	1.20	1.20	-	9.90	9.90	-
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	NV	2	2	-	2.90	2.90	-	9.90	9.90	-
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	62,000	2	2	-	1.00	1.00	0	9.90	9.90	0
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	62,000	2	1	1	1.40	1.40	0	9.90	9.90	0
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	62,000	2	2	-	1.70	1.70	0	9.90	9.90	0
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	62,000	2	0	2	-	-	0	9.90	9.90	0
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	47,000	2	1	1	1.40	1.40	0	9.90	9.90	0
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	47,000	2	1	1	1.60	1.60	0	9.90	9.90	0
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	47,000	2	1	-	2.50	2.50	0	9.90	9.90	0
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	47,000	2	1	1	2.30	2.30	0	9.90	9.90	0
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	47,000	2	1	1	2.50	2.50	0	9.90	9.90	0
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	47,000	2	0	1	-	-	0	9.90	9.90	0
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	47,000	2	2	-	2.20	2.20	0	9.90	9.90	0
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	62,000	2	1	-	2.20	2.20	0	9.90	9.90	0
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	47,000	2	1	1	1.90	1.90	0	9.90	9.90	0
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	47,000	2	0	1	-	-	0	9.90	9.90	0
Forebay - Goose Island															
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	NV	2	0	2	-	-	-	60.0	64.0	-
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	0.048	2	2	-	2.50	2.70	2	12.0	13.0	2
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	0.048	2	2	-	2.50	2.70	2	24.0	26.0	2
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	0.048	2	2	-	2.50	2.70	2	12.0	13.0	2
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	0.048	2	2	-	2.50	2.70	2	12.0	13.0	2
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	0.048	2	2	-	2.50	2.70	2	12.0	13.0	2
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	0.048	2	1	1	2.50	2.50	1	12.0	13.0	2

Table K-11a
Human Health Data Sensativity Analysis for Targeted Forebay Samples
Bradford Island - River Operable Unit
(2 of 3)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	0.048	2	2	-	2.50	2.70	2	12.0	13.0	2
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Dry	0.048	2	1	-	5.00	5.00	1	24.0	24.0	1
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	NV	2	0	2	-	-	-	120	130	-
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	NV	2	2	-	1.80	1.90	-	12.0	13.0	-
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	NV	2	2	-	1.60	1.70	-	12.0	13.0	-
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	NV	2	0	2	-	-	-	12.0	13.0	-
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	NV	2	2	-	1.50	1.60	-	12.0	13.0	-
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	NV	2	1	1	3.70	3.70	-	12.0	13.0	-
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	62,000	2	2	-	1.20	1.30	0	12.0	13.0	0
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	62,000	2	2	-	1.70	1.80	0	12.0	13.0	0
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	62,000	2	2	-	2.10	2.20	0	12.0	13.0	0
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	62,000	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	47,000	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	47,000	2	0	1	-	-	0	12.0	12.0	0
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	47,000	2	0	1	-	-	0	12.0	12.0	0
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	47,000	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	47,000	2	1	1	3.00	3.00	0	12.0	13.0	0
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	47,000	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	47,000	2	2	-	2.70	2.80	0	12.0	13.0	0
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	62,000	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	47,000	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	47,000	2	0	2	-	-	0	12.0	13.0	0
Crayfish	Metals	Total	Antimony	mg/kg	Wet	NV	1	0	1	-	-	-	0.0120	0.0120	-
Crayfish	Metals	Total	Beryllium	mg/kg	Wet	NV	1	0	1	-	-	-	0.00500	0.00500	-
Crayfish	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	0.570	1	1	-	2.40	2.40	1	9.50	9.50	1
Crayfish	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	0.570	1	1	-	2.60	2.60	1	9.50	9.50	1
Crayfish	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	0.570	1	1	-	2.30	2.30	1	9.50	9.50	1
Crayfish	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	0.570	1	1	-	2.20	2.20	1	9.50	9.50	1
Crayfish	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	0.570	1	1	-	0.510	0.510	0	9.50	9.50	1
Crayfish	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	0.570	1	1	-	1.80	1.80	1	9.50	9.50	1
Crayfish	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	0.570	1	1	-	1.90	1.90	1	9.50	9.50	1
Crayfish	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	0.570	1	1	-	2.50	2.50	1	9.50	9.50	1
Crayfish	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	0.570	1	1	-	2.00	2.00	1	9.50	9.50	1
Crayfish	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	0.570	1	1	-	2.60	2.60	1	9.50	9.50	1
Crayfish	SVOCs	Total	Acenaphthene	ug/kg	Wet	15,000	1	1	-	0.500	0.500	0	0.500	0.500	0
Crayfish	SVOCs	Total	Anthracene	ug/kg	Wet	15,000	1	0	1	-	-	0	0.500	0.500	0
Crayfish	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	1.57	1	1	-	0.500	0.500	0	0.500	0.500	0
Crayfish	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	0.157	1	1	-	0.0610	0.0610	0	0.500	0.500	1
Crayfish	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1.57	1	0	1	-	-	0	0.500	0.500	0
Crayfish	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	15.7	1	0	1	-	-	0	0.500	0.500	0
Crayfish	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	15.7	1	0	1	-	-	0	0.500	0.500	0
Crayfish	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	81.9	1	1	-	66.0	66.0	0	200	200	1
Crayfish	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	604	1	1	-	7.30	7.30	0	39.0	39.0	0
Crayfish	SVOCs	Total	Carbazole	ug/kg	Wet	NV	1	1	-	7.70	7.70	-	39.0	39.0	-
Crayfish	SVOCs	Total	Chrysene	ug/kg	Wet	157	1	1	-	0.200	0.200	0	0.500	0.500	0

Table K-11a
Human Health Data Sensativity Analysis for Targeted Forebay Samples
Bradford Island - River Operable Unit
(3 of 3)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Crayfish	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	0.157	1	1	-	0.0450	0.0450	0	0.500	0.500	1
Crayfish	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	49,200	1	1	-	140	140	0	140	140	0
Crayfish	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	49,200	1	1	-	11.0	11.0	0	39.0	39.0	0
Crayfish	SVOCs	Total	Fluoranthene	ug/kg	Wet	20,000	1	1	-	0.500	0.500	0	0.500	0.500	0
Crayfish	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	1.57	1	0	1	-	-	0	0.500	0.500	0
Crayfish	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	NV	1	1	-	11.0	11.0	-	39.0	39.0	-
Crayfish	SVOCs	Total	Pyrene	ug/kg	Wet	15,000	1	1	-	0.500	0.500	0	0.500	0.500	0

Notes

= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

= When the number of applicable MRLs > SLV is higher than the number of applicable MDLs > SLV, they are highlited pink when the number of MDLs > SLV is zero or difference is more than 1.

HH = human health
Dry = Dry weight
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit
ND = non-detect
NV = No value
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SLV = screening level value
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
Wet = Wet Weight

Table K-11b
Human Health PCB Congener Data Sensativity Analysis for Targeted Forebay Samples
Bradford Island - River Operable Unit
(1 of 1)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs below RDL	Number of EMPC Results	Minimum RDL of NDs	Maximum RDL of NDs	Number of Applicable RDLs > SLV	Minimum EMPC Value	Maximum EMPC Value	Number of EMPCs > SLV
Sediment	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Dry	2.10	2	-	1	-	-	-	0.150	0.150	0
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	26.0	2	-	1	-	-	-	0.970	0.970	0
Sediment	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	0.00620	2	-	2	-	-	-	0.255	0.419	2
Sediment	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	0.021	2	2	-	0.241	0.250	2	-	-	-
Crayfish	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	25.0	1	1	-	0.145	0.145	0	-	-	-
Crayfish	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	0.0760	1	-	1	-	-	-	0.261	0.261	1
Crayfish	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	0.250	1	1	-	0.164	0.164	0	-	-	-

Notes

= The number of applicable RDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.
= The number of applicable EMPCs > SLV are hightlighted pink when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

HH = human health
Dry = Dry weight
EMPC = The analyte was not positively identified; the associated
numerical value is the Estimated Maximum Potential Concentration.
ND = non-detect
PCB = polychlorinated biphenyl
pg/kg = picograms per kilogram
RDL = reported detection limit
SLV = screening level value
Wet = Wet Weight

Table K-12a
Human Health Data Sensativity Analysis for Downstream Samples
Bradford Island - River Operable Unit
(1 of 1)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Sediment	Metals	Total	Thallium	mg/kg	Dry	0.354	6	1	-	0.130	0.130	0	0.130	0.130	0
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	NV	6	0	4	-	-	-	14.0	15.0	-
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	NV	6	5	1	140	180	-	140	180	-
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	0.048	6	6	-	1.70	1.70	6	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	0.048	6	6	-	1.70	1.70	6	14.0	18.0	6
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	0.048	6	6	-	1.70	1.70	6	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	0.048	6	6	-	1.70	1.70	6	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	0.048	6	6	-	1.70	1.70	6	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	0.048	6	6	-	1.70	1.70	6	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	0.048	6	6	-	1.70	1.70	6	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	0.048	6	6	-	1.70	1.70	6	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	0.048	6	6	-	1.70	1.70	6	7.00	8.80	6
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Dry	0.048	6	6	-	1.70	1.70	6	14.00	18.00	6
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	NV	6	6	-	200	200	-	200	200	-
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	NV	6	6	-	1.50	9.90	-	9.70	10.0	-
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	NV	6	5	1	1.30	1.30	-	9.70	10.0	-
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	NV	6	6	-	9.80	14.0	-	9.80	14.0	-
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	NV	6	6	-	1.20	1.20	-	9.70	10.0	-
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	NV	6	4	1	2.90	2.90	-	9.70	10.0	-
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	62,000	6	6	-	1.00	1.00	0	9.70	10.0	0
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	62,000	6	3	3	1.40	1.40	0	9.70	10.0	0
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	62,000	6	6	-	1.70	1.70	0	9.70	10.0	0
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	62,000	6	2	4	1.30	1.30	0	9.70	10.0	0
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	47,000	6	0	5	-	-	0	9.70	10.0	0
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	47,000	6	1	3	1.60	1.60	0	9.70	9.90	0
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	47,000	6	2	3	2.50	2.50	0	9.70	10.0	0
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	47,000	6	3	3	2.30	2.30	0	9.70	10.0	0
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	47,000	6	4	2	2.50	2.50	0	9.70	10.0	0
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	47,000	6	1	4	1.40	1.40	0	9.70	10.0	0
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	47,000	6	5	1	2.20	2.20	0	9.70	10.0	0
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	62,000	6	1	3	2.20	2.20	0	9.70	9.90	0
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	47,000	6	3	3	1.90	1.90	0	9.70	10.0	0
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	47,000	6	0	4	-	-	0	9.70	9.90	0

Notes

= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

HH = human health
Dry = Dry weight
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit
ND = non-detect
NV = No value
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
PCB = polychlorinated biphenyl
SLV = screening level value
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram

Table K-12b
Human Health PCB Congener Data Sensativity Analysis for Downstream Samples
Bradford Island - River Operable Unit
(1 of 1)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Lowest HH SLV	Number of Samples	Number of NDs below RDL	Number of EMPC Results	Minimum RDL of NDs	Maximum RDL of NDs	Number of Applicable RDLs > SLV	Minimum EMPC Value	Maximum EMPC Value	Number of EMPCs > SLV
Sediment	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Dry	6.40	6	-	2	-	-	-	0.259	0.531	0
Sediment	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Dry	2.10	6	5	-	0.0492	0.100	0	-	-	-
Sediment	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Dry	21.0	6	1	-	0.0976	0.0976	0	-	-	-
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	26.0	6	-	1	-	-	-	0.168	0.168	0
Sediment	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	0.00620	6	5	-	0.0787	0.171	5	-	-	-
Sediment	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Dry	26.0	6	-	2	-	-	-	0.604	1.39	0
Sediment	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	0.0210	6	6	-	0.0630	0.154	6	-	-	-
Sediment	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Dry	140	6	1	1	0.0733	0.0733	0	0.115	0.115	0

Notes

= The number of applicable RDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

HH = human health
Dry = Dry weight
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
ND = non-detect
PCB = polychlorinated biphenyl
pg/kg = picograms per kilogram
RDL = reported detection limit
SLV = screening level value

Table K-13
Ecological Data Sensativity Analysis for Pre-Sediment Removal Forebay Samples
Bradford Island - River Operable Unit
(1 of 2)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	NV	5	0	4	-	-	-	31.0	44.0	-
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	NV	5	0	5	-	-	-	130	180	-
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	1.80	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	1.80	5	5	-	2.60	5.80	5	16.0	34.0	5
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	1.80	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	1.80	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	1.80	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	1.80	5	1	-	5.80	5.80	1	17.0	17.0	1
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	1.80	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	1.80	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	1.80	5	5	-	2.60	5.80	5	7.60	17.0	5
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Dry	1.80	5	1	-	11.6	11.6	1	34.0	34.0	1
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	750	5	1	3	7.00	7.00	0	77.0	170	0
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	110	5	4	1	3.20	3.20	0	7.70	17.0	0
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	140	5	4	1	1.30	1.30	0	7.70	17.0	0
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	110	5	0	5	-	-	0	16.0	34.0	0
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	110	5	5	-	1.70	2.90	0	7.70	85.0	0
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	48.0	5	3	1	2.90	4.70	0	8.40	17.0	0
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	290	5	5	-	1.40	2.40	0	7.70	17.0	0
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	57.0	5	4	1	1.40	14.0	0	8.40	78.0	1
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	77.0	5	5	-	1.10	1.90	0	7.70	17.0	0
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	42.0	5	0	4	-	-	0	8.10	17.0	0
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	32.0	5	0	5	-	-	0	7.70	17.0	0
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	32.0	5	2	2	2.60	16.0	0	8.40	78.0	1
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	27.0	5	0	4	-	-	0	8.10	17.0	0
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	300	5	0	5	-	-	0	7.70	17.0	0
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	27.0	5	0	5	-	-	0	7.70	17.0	0
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	57.0	5	0	4	-	-	0	8.10	17.0	0
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	33.0	5	3	2	1.50	1.50	0	7.70	17.0	0
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	111	5	0	3	-	-	0	8.20	17.0	0
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	17.0	5	0	5	-	-	0	7.70	17.0	0
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	53.0	5	0	4	-	-	0	8.10	17.0	0
Clam	Metals	Total	Antimony	mg/kg	Wet	NV	4	4	-	0.00500	0.00500	-	0.0120	0.0130	-
Clam	Metals	Total	Beryllium	mg/kg	Wet	NV	4	0	2	-	-	-	0.0049	0.005	-
Clam	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	35.0	4	4	-	2.40	4.70	0	9.80	20.0	0
Clam	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	35.0	4	4	-	2.60	5.10	0	20.0	40.0	1
Clam	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	35.0	4	4	-	2.30	4.50	0	9.80	20.0	0
Clam	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	35.0	4	4	-	2.20	4.40	0	9.80	20.0	0
Clam	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	35.0	4	4	-	0.510	1.00	0	9.80	20.0	0
Clam	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	35.0	4	4	-	1.90	3.80	0	9.80	20.0	0
Clam	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	35.0	4	4	-	2.00	4.00	0	9.80	20.0	0
Clam	SVOCs	Total	Acenaphthene	ug/kg	Wet	19,000	3	0	3	-	-	0	0.490	0.500	0
Clam	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	1,000	3	3	-	0.0810	0.0810	0	0.490	0.500	0
Clam	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1,000	3	3	-	0.0700	0.0700	0	0.490	0.500	0
Clam	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	1,000	3	3	-	0.0730	0.0730	0	0.490	0.500	0

Table K-13
Ecological Data Sensativity Analysis for Pre-Sediment Removal Forebay Samples
Bradford Island - River Operable Unit
(2 of 2)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Clam	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	1,000	3	3	-	0.0560	0.0560	0	0.490	0.500	0
Clam	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	1,760	3	3	-	66.0	66.0	0	170	200	0
Clam	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	310	3	3	-	7.30	7.30	0	34.0	40.0	0
Clam	SVOCs	Total	Carbazole	ug/kg	Wet	NV	3	3	-	9.10	9.10	-	34.0	40.0	-
Clam	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	1,000	3	3	-	0.0590	0.0590	0	0.490	0.500	0
Clam	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	626	3	1	-	16.0	16.0	0	34.0	34.0	0
Clam	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	626	3	3	-	11.0	11.0	0	34.0	40.0	0
Clam	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	1,000	3	3	-	0.0640	0.0640	0	0.490	0.500	0
Clam	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	NV	3	3	-	7.70	7.70	-	34.0	40.0	-

Notes

= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

= When the number of applicable MRLs > SLV is higher than the number of applicable MDLs > SLV, they are highlited pink when the number of MDLs > SLV is zero or difference is more than 1.

Eco = Ecological
Dry = Dry weight
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit
ND = non-detect
NV = No value
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
PCB = polychlorinated biphenyl
SLV = screening level value
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
Wet = Wet Weight

Table K-14a
Ecological Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
(1 of 6)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Surface Water	Metals	Dissolved	Aluminum	ug/L	Wet	87	5	5	-	20.0	50.0	0	50.0	50.0	0
Surface Water	Metals	Dissolved	Antimony	ug/L	Wet	1,000	5	5	-	7.00	50.0	0	50.0	50.0	0
Surface Water	Metals	Dissolved	Beryllium	ug/L	Wet	5.3	5	3	2	0.0200	0.0200	0	0.0200	0.0200	0
Surface Water	Metals	Dissolved	Cadmium	ug/L	Wet	0.17	5	3	2	7.00	8.00	3	20.0	20.0	5
Surface Water	Metals	Dissolved	Chromium	ug/L	Wet	49	5	5	-	2.00	2.00	0	5.00	5.00	0
Surface Water	Metals	Dissolved	Cobalt	ug/L	Wet	23	5	5	-	2.00	2.00	0	10.0	10.0	0
Surface Water	Metals	Dissolved	Lead	ug/L	Wet	1.44	5	2	1	0.00300	0.00900	0	0.0200	0.0200	0
Surface Water	Metals	Dissolved	Mercury	ug/L	Wet	0.77	5	5	-	0.0300	0.0300	0	0.200	0.200	0
Surface Water	Metals	Dissolved	Nickel	ug/L	Wet	34	5	5	-	2.00	2.00	0	20.0	20.0	0
Surface Water	Metals	Dissolved	Vanadium	ug/L	Wet	20	5	5	-	5.00	5.00	0	10.0	10.0	0
Surface Water	Metals	Dissolved	Zinc	ug/L	Wet	77	5	4	1	7.00	7.00	0	10.0	10.0	0
Surface Water	Metals	Total	Aluminum	ug/L	Wet	87	5	2	-	145	152	2	145	152	2
Surface Water	Metals	Total	Antimony	ug/L	Wet	1,000	5	5	-	7.00	50.0	0	50.0	50.0	0
Surface Water	Metals	Total	Beryllium	ug/L	Wet	5.3	5	3	2	0.0200	0.0200	0	0.0200	0.0200	0
Surface Water	Metals	Total	Cadmium	ug/L	Wet	0.17	5	0	5	-	-	0	0.0200	0.0200	0
Surface Water	Metals	Total	Chromium	ug/L	Wet	49	5	5	-	2.00	2.00	0	5.00	5.00	0
Surface Water	Metals	Total	Cobalt	ug/L	Wet	23	5	5	-	2.00	2.00	0	10.0	10.0	0
Surface Water	Metals	Total	Mercury	ug/L	Wet	0.77	5	5	-	0.0300	0.0300	0	0.200	0.200	0
Surface Water	Metals	Total	Nickel	ug/L	Wet	34	5	5	-	2.00	2.00	0	20.0	20.0	0
Surface Water	Metals	Total	Vanadium	ug/L	Wet	20	5	5	-	5.00	5.00	0	10.0	10.0	0
Surface Water	Metals	Total	Zinc	ug/L	Wet	77	5	5	-	7.00	7.00	0	10.0	10.0	0
Surface Water	NWTPH-Dx	Dissolved	Diesel Range Organics	ug/L	Wet	NV	5	0	5	-	-	-	100	120	-
Surface Water	NWTPH-Dx	Dissolved	Residual Range Organics	ug/L	Wet	NV	5	5	-	19.0	120	-	100	120	-
Surface Water	NWTPH-Dx	Total	Diesel Range Organics	ug/L	Wet	NV	5	3	2	11.0	11.0	-	100	120	-
Surface Water	NWTPH-Dx	Total	Residual Range Organics	ug/L	Wet	NV	5	5	-	19.0	120	-	100	120	-
Surface Water	SVOCs	Column	Acenaphthene	ng/L	Wet	55,850	5	0	0	-	-	0	-	-	0
Surface Water	SVOCs	Filter	Acenaphthene	ng/L	Wet		5	5	-	0.0150	0.0329	0	0.0150	0.0329	0
Surface Water	SVOCs	C+F	Acenaphthene	ng/L	Wet		5	-	-	0.0150	0.0329	0	0.0150	0.0329	0
Surface Water	SVOCs	Column	Anthracene	ng/L	Wet	13,000	5	5	-	0.0569	0.103	0	0.0569	0.103	0
Surface Water	SVOCs	Filter	Anthracene	ng/L	Wet		5	0	0	-	-	0	-	-	0
Surface Water	SVOCs	C+F	Anthracene	ng/L	Wet		5	-	-	0.0569	0.103	0	0.0569	0.103	0
Surface Water	SVOCs	Column	Benzo(a)anthracene	ng/L	Wet	27.0	5	2	-	0.00830	0.0116	0	0.0116	0.0116	0
Surface Water	SVOCs	Filter	Benzo(a)anthracene	ng/L	Wet		5	5	-	0.0288	0.0519	0	0.0288	0.0519	0
Surface Water	SVOCs	C+F	Benzo(a)anthracene	ng/L	Wet		5	-	-	0.0371	0.0635	0	0.0404	0.0635	0
Surface Water	SVOCs	Column	Benzo(a)pyrene	ng/L	Wet	14.0	5	5	-	0.0131	0.0269	0	0.0131	0.0269	0
Surface Water	SVOCs	Filter	Benzo(a)pyrene	ng/L	Wet		5	5	-	0.0221	0.0582	0	0.0221	0.0582	0
Surface Water	SVOCs	C+F	Benzo(a)pyrene	ng/L	Wet		5	-	-	0.0352	0.0851	0	0.0352	0.0851	0
Surface Water	SVOCs	Column	Benzo(b)fluoranthene	ng/L	Wet	677.4	5	5	-	0.00920	0.0182	0	0.0107	0.0182	0
Surface Water	SVOCs	Filter	Benzo(b)fluoranthene	ng/L	Wet		5	3	-	0.0333	0.0774	0	0.0333	0.0422	0
Surface Water	SVOCs	C+F	Benzo(b)fluoranthene	ng/L	Wet		5	-	-	0.0425	0.0956	0	0.0440	0.0604	0
Surface Water	SVOCs	Column	Benzo(g,h,i)perylene	ng/L	Wet	439.1	5	5	-	0.00980	0.0195	0	0.00980	0.0195	0
Surface Water	SVOCs	Filter	Benzo(g,h,i)perylene	ng/L	Wet		5	5	-	0.0241	0.0523	0	0.0041	0.0523	0
Surface Water	SVOCs	C+F	Benzo(g,h,i)perylene	ng/L	Wet		5	-	-	0.0339	0.0718	0	0.0339	0.0718	0

Table K-14a
Ecological Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Surface Water	SVOCs	Column	Benzo(j,k)flouranthenes	ng/L	Wet	14.0	5	5	-	0.0100	0.0208	0	0.0100	0.0208	0
Surface Water	SVOCs	Filter	Benzo(j,k)flouranthenes	ng/L	Wet		5	5	-	0.0318	0.0497	0	0.0318	0.0497	0
Surface Water	SVOCs	C+F	Benzo(j,k)flouranthenes	ng/L	Wet		5	-	-	0.0418	0.0705	0	0.0418	0.0705	0
Surface Water	SVOCs	Column	Bis(2-ethylhexyl) Phthalate	ng/L	Wet	3,000	5	5	-	6.52	11.8	0	6.52	11.8	0
Surface Water	SVOCs	Filter	Bis(2-ethylhexyl) Phthalate	ng/L	Wet		5	5	-	3.41	4.63	0	3.41	4.63	0
Surface Water	SVOCs	C+F	Bis(2-ethylhexyl) Phthalate	ng/L	Wet		5	-	-	9.93	16.4	0	9.93	16.4	0
Surface Water	SVOCs	Column	Butyl Benzyl Phthalate	ng/L	Wet	19,000	5	5	-	0.260	2.29	0	0.260	2.29	0
Surface Water	SVOCs	Filter	Butyl Benzyl Phthalate	ng/L	Wet		5	5	-	0.150	0.198	0	0.150	0.198	0
Surface Water	SVOCs	C+F	Butyl Benzyl Phthalate	ng/L	Wet		5	-	-	0.410	2.49	0	0.410	2.49	0
Surface Water	SVOCs	Column	Chrysene	ng/L	Wet	2,042	5	0	0	-	-	0	-	-	0
Surface Water	SVOCs	Filter	Chrysene	ng/L	Wet		5	3	-	0.0626	0.0844	0	0.0626	0.0844	0
Surface Water	SVOCs	C+F	Chrysene	ng/L	Wet		5	-	-	0.0626	0.0844	0	0.0626	0.0844	0
Surface Water	SVOCs	Column	Dibenz(a,h)anthracene	ng/L	Wet	282.5	5	5	-	0.0107	0.0212	0	0.0107	0.0212	0
Surface Water	SVOCs	Filter	Dibenz(a,h)anthracene	ng/L	Wet		5	5	-	0.0187	0.0395	0	0.0187	0.0395	0
Surface Water	SVOCs	C+F	Dibenz(a,h)anthracene	ng/L	Wet		5	-	-	0.0294	0.0607	0	0.0294	0.0607	0
Surface Water	SVOCs	Column	Di-n-butyl Phthalate	ng/L	Wet	35,000	5	5	-	0.562	1.97	0	0.562	1.97	0
Surface Water	SVOCs	Filter	Di-n-butyl Phthalate	ng/L	Wet		5	5	-	0.200	0.303	0	0.200	0.303	0
Surface Water	SVOCs	C+F	Di-n-butyl Phthalate	ng/L	Wet		5	-	-	0.762	2.27	0	0.7620	2.27	0
Surface Water	SVOCs	Column	Di-n-octyl Phthalate	ng/L	Wet	708,000	5	5	-	0.110	0.852	0	0.110	0.852	0
Surface Water	SVOCs	Filter	Di-n-octyl Phthalate	ng/L	Wet		5	5	-	0.0960	0.249	0	0.0960	0.249	0
Surface Water	SVOCs	C+F	Di-n-octyl Phthalate	ng/L	Wet		5	-	-	0.206	1.10	0	0.206	1.10	0
Surface Water	SVOCs	Column	Fluoranthene	ng/L	Wet	6,160	5	5	-	0.516	0.572	0	0.516	0.572	0
Surface Water	SVOCs	Filter	Fluoranthene	ng/L	Wet		5	0	0	-	-	0	-	-	0
Surface Water	SVOCs	C+F	Fluoranthene	ng/L	Wet		5	-	-	0.516	0.572	0	0.516	0.572	0
Surface Water	SVOCs	Column	Indeno(1,2,3-cd)pyrene	ng/L	Wet	275	5	5	-	0.0101	0.0202	0	0.0101	0.0202	0
Surface Water	SVOCs	Filter	Indeno(1,2,3-cd)pyrene	ng/L	Wet		5	5	-	0.0293	0.0459	0	0.0293	0.0459	0
Surface Water	SVOCs	C+F	Indeno(1,2,3-cd)pyrene	ng/L	Wet		5	-	-	0.0394	0.0661	0	0.0394	0.0661	0
Surface Water	SVOCs	Column	Phenanthrene	ng/L	Wet	6,300	5	0	0	-	-	0	-	-	0
Surface Water	SVOCs	Filter	Phenanthrene	ng/L	Wet		5	4	-	0.0660	0.107	0	0.0660	0.107	0
Surface Water	SVOCs	C+F	Phenanthrene	ng/L	Wet		5	-	-	0.0660	0.107	0	0.0660	0.107	0
Sediment	Metals	Total	Antimony	mg/kg	Dry	3.00	19	1	2	0.0400	0.0400	0	0.0600	0.0600	0
Sediment	Metals	Total	Cadmium	mg/kg	Dry	0.674	19	2	-	0.115	0.121	0	0.115	0.121	0
Sediment	Metals	Total	Mercury	mg/kg	Dry	0.214	19	0	1	-	-	0	0.0200	0.0200	0
Sediment	Metals	Total	Thallium	mg/kg	Dry	0.354	19	4	-	0.108	0.132	0	0.108	0.132	0
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	NV	19	0	12	-	-	-	13.0	18.0	-
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	NV	19	7	12	130	180	-	130	200	-
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	1.80	19	19	-	1.70	10.0	2	6.40	10.0	19
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	1.80	19	19	-	1.70	29.0	7	13.0	29.0	19
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	1.80	19	19	-	1.70	18.0	7	6.40	18.0	19
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	1.80	19	19	-	1.70	5.70	5	6.40	10.0	19
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	1.80	19	19	-	1.70	4.00	4	6.40	10.0	19
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	1.80	19	17	1	1.70	2.60	5	6.40	10.0	18
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	1.80	19	19	-	1.70	4.70	1	6.40	10.0	19
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	1.80	19	19	-	1.70	1.70	0	6.40	10.0	19
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	1.80	19	19	-	1.70	1.70	0	6.40	10.0	19

Table K-14a
Ecological Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Dry	1.80	19	17	-	3.40	8.10	17	12.8	20.0	17
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	750	19	16	2	200	200	0	200	200	0
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	110	19	19	-	1.50	10.0	0	9.80	10.0	0
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	140	19	18	1	1.30	1.30	0	9.80	10.0	0
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	110	19	19	-	9.80	19.0	0	9.80	19.0	0
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	110	19	19	-	1.20	1.20	0	9.80	10.0	0
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	48.0	19	13	3	2.90	2.90	0	9.80	10.0	0
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	290	19	19	-	1.00	1.00	0	9.80	10.0	0
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	57.0	19	14	5	1.40	1.40	0	9.80	10.0	0
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	77.0	19	19	-	1.70	1.70	0	9.80	10.0	0
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	42.0	19	5	14	1.30	1.30	0	9.80	10.0	0
Sediment	SVOCs	Total	Total LPAHs (KM, capped)	ug/kg	Dry	76.0	19	5	-	5.40	5.40	0	39.2	40.0	0
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	32.0	19	7	11	1.40	1.40	0	9.80	10.0	0
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	32.0	19	8	11	1.60	1.60	0	9.80	10.0	0
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	27.0	19	10	9	2.50	2.50	0	9.80	10.0	0
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	300	19	10	9	2.30	2.30	0	9.80	10.0	0
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	27.0	19	14	5	2.50	2.50	0	9.80	10.0	0
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	57.0	19	3	14	1.40	1.40	0	9.80	10.0	0
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	33.0	19	19	-	2.20	2.20	0	9.80	10.0	0
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	111	19	4	13	2.20	2.20	0	9.80	10.0	0
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	17.0	19	10	9	1.90	1.90	0	9.80	10.0	0
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	53.0	19	3	13	1.30	1.30	0	9.80	10.0	0
Sediment	SVOCs	Total	Total HPAHs (KM, capped)	ug/kg	Dry	193	19	3	-	19.3	19.3	0	98.0	99.0	0
Sediment	SVOCs	Total	Total PAHs (KM, capped)	ug/kg	Dry	1,600	19	3	-	24.7	24.7	0	137	139	0
Crayfish	Metals	Total	Antimony	mg/kg	Wet	NV	17	0	4	-	-	-	0.0120	0.0130	-
Crayfish	Metals	Total	Beryllium	mg/kg	Wet	NV	17	0	17	-	-	-	0.00420	0.00630	-
Crayfish	Metals	Total	Chromium	mg/kg	Wet	NV	17	0	1	-	-	-	0.3	0.3	-
Crayfish	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	35.0	17	17	-	2.40	2.40	0	9.60	10.0	0
Crayfish	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	35.0	17	17	-	2.60	2.60	0	20.0	20.0	0
Crayfish	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	35.0	17	17	-	2.30	2.30	0	9.60	10.0	0
Crayfish	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	35.0	17	17	-	2.20	2.20	0	9.60	10.0	0
Crayfish	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	35.0	17	17	-	0.510	0.510	0	9.60	10.0	0
Crayfish	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	35.0	17	17	-	1.80	19.0	0	9.60	19.0	0
Crayfish	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	35.0	17	17	-	1.90	17.0	0	9.60	17.0	0
Crayfish	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	35.0	17	17	-	2.50	10.0	0	9.60	10.0	0
Crayfish	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	35.0	17	17	-	2.00	2.00	0	9.60	10.0	0
Crayfish	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	35.0	17	17	-	2.60	19.0	0	20.0	20.0	0
Crayfish	SVOCs	Total	Acenaphthene	ug/kg	Wet	19,000	15	8	7	0.110	0.110	0	0.460	0.500	0
Crayfish	SVOCs	Total	Anthracene	ug/kg	Wet	19,000	15	11	4	0.0650	0.0650	0	0.460	0.500	0
Crayfish	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	1,000	15	5	10	0.0660	0.0660	0	0.460	0.500	0
Crayfish	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	1,000	15	12	3	0.0810	0.0810	0	0.460	0.500	0
Crayfish	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1,000	15	8	7	0.0700	0.0700	0	0.460	0.500	0
Crayfish	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	1,000	15	11	4	0.0730	0.0730	0	0.460	0.500	0
Crayfish	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	1,000	15	8	7	0.0560	0.0560	0	0.460	0.500	0
Crayfish	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	1,760	15	11	4	66.0	66.0	0	180	200	0

Table K-14a
Ecological Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
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Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Crayfish	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	310	15	15	-	7.30	7.30	0	35.0	40.0	0
Crayfish	SVOCs	Total	Carbazole	ug/kg	Wet	NV	15	15	-	9.10	9.10	-	35.0	40.0	-
Crayfish	SVOCs	Total	Chrysene	ug/kg	Wet	1,000	15	7	8	0.0760	0.0760	0	0.460	0.500	0
Crayfish	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	1,000	15	15	-	0.0590	0.0590	0	0.460	0.500	0
Crayfish	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	626	15	15	-	16.0	180	0	35.0	180	0
Crayfish	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	626	15	15	-	11.0	11.0	0	35.0	40.0	0
Crayfish	SVOCs	Total	Fluoranthene	ug/kg	Wet	19,000	15	0	12	-	-	0	0.460	0.500	0
Crayfish	SVOCs	Total	Fluorene	ug/kg	Wet	19,000	15	10	5	0.150	0.150	0	0.460	0.500	0
Crayfish	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	1,000	15	12	3	0.0640	0.0640	0	0.460	0.500	0
Crayfish	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	NV	15	15	-	7.70	7.70	-	35.0	40.0	-
Crayfish	SVOCs	Total	Phenanthrene	ug/kg	Wet	19,000	15	5	4	0.360	0.360	0	0.460	0.500	0
Crayfish	SVOCs	Total	Pyrene	ug/kg	Wet	1,000	15	0	14	-	-	0	0.460	0.500	0
Largescale Sucker	Metals	Total	Antimony	mg/kg	Wet	NV	1	1	-	0.00600	0.00600	-	0.0160	0.0160	-
Largescale Sucker	Metals	Total	Beryllium	mg/kg	Wet	NV	1	1	-	0.000600	0.000600	-	0.00640	0.00640	-
Largescale Sucker	Metals	Total	Thallium	mg/kg	Wet	NV	1	0	1	-	-	-	0.0064	0.0064	-
Largescale Sucker	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	35.0	1	1	-	2.40	2.40	0	10.0	10.0	0
Largescale Sucker	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	35.0	1	1	-	2.60	2.60	0	20.0	20.0	0
Largescale Sucker	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	35.0	1	1	-	2.30	2.30	0	10.0	10.0	0
Largescale Sucker	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	35.0	1	1	-	2.20	2.20	0	10.0	10.0	0
Largescale Sucker	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	35.0	1	1	-	0.510	0.510	0	10.0	10.0	0
Largescale Sucker	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	35.0	1	1	-	1.90	1.90	0	10.0	10.0	0
Largescale Sucker	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	35.0	1	1	-	2.00	2.00	0	10.0	10.0	0
Largescale Sucker	SVOCs	Total	Acenaphthene	ug/kg	Wet	19,000	1	1	-	1.10	1.10	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	Anthracene	ug/kg	Wet	19,000	1	0	1	-	-	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	1,000	1	1	-	0.660	0.660	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1,000	1	1	-	0.700	0.700	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	1,000	1	0	1	-	-	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	1,760	1	1	-	66.0	66.0	0	180	180	0
Largescale Sucker	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	310	1	1	-	7.30	7.30	0	35.0	35.0	0
Largescale Sucker	SVOCs	Total	Carbazole	ug/kg	Wet	NV	1	1	-	9.10	9.10	-	35.0	35.0	-
Largescale Sucker	SVOCs	Total	Chrysene	ug/kg	Wet	1,000	1	1	-	0.760	0.760	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	1,000	1	0	1	-	-	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	626	1	1	-	16.0	16.0	0	35.0	35.0	0
Largescale Sucker	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	626	1	1	-	11.0	11.0	0	35.0	35.0	0
Largescale Sucker	SVOCs	Total	Fluorene	ug/kg	Wet	19,000	1	1	-	1.50	1.50	0	4.60	4.60	0
Largescale Sucker	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	NV	1	1	-	7.70	7.70	-	35.0	35.0	-
Largescale Sucker	SVOCs	Total	Phenanthrene	ug/kg	Wet	19,000	1	0	1	-	-	0	4.60	4.60	0
Smallmouth Bass	Metals	Total	Antimony	mg/kg	Wet	NV	19	19	-	0.00500	0.00600	-	0.0120	0.0150	-
Smallmouth Bass	Metals	Total	Beryllium	mg/kg	Wet	NV	19	15	4	0.000500	0.000600	-	0.00480	0.00590	-
Smallmouth Bass	Metals	Total	Cadmium	mg/kg	Wet	0.150	19	0	4	-	-	0	0.00500	0.00600	0
Smallmouth Bass	Metals	Total	Chromium	mg/kg	Wet	NV	19	14	2	0.120	0.150	-	0.240	0.300	-
Smallmouth Bass	Metals	Total	Lead	mg/kg	Wet	0.120	19	0	3	-	-	0	0.00500	0.00600	0
Smallmouth Bass	Metals	Total	Vanadium	mg/kg	Wet	NV	19	0	7	-	-	-	0.0500	0.0600	-
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	35.0	19	19	-	2.40	240	3	9.90	1,000	6
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	35.0	19	19	-	2.60	260	2	20.0	2,000	5

Table K-14a
Ecological Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
(5 of 6)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	35.0	19	19	-	2.30	230	2	9.90	1,000	5
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	35.0	19	18	-	2.20	220	2	9.90	1,000	5
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	35.0	19	19	-	0.510	68.0	3	9.90	1,000	7
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	35.0	19	12	-	11.0	420	7	11.0	420	7
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	35.0	19	19	-	1.90	300	11	10.0	1,000	14
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	35.0	19	19	-	2.50	250	6	10.0	1,000	9
Smallmouth Bass	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	35.0	19	19	-	2.00	200	2	9.90	1,000	5
Smallmouth Bass	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	35.0	19	12	-	17.7	424	7	21.0	430	8
Smallmouth Bass	SVOCs	Total	Acenaphthene	ug/kg	Wet	19,000	19	3	16	0.110	0.110	0	0.460	5.00	0
Smallmouth Bass	SVOCs	Total	Anthracene	ug/kg	Wet	19,000	19	1	14	0.0650	0.0650	0	0.460	2.50	0
Smallmouth Bass	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	1,000	19	14	-	0.0660	0.660	0	0.460	5.00	0
Smallmouth Bass	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	1,000	19	11	3	0.0810	0.0810	0	0.460	1.00	0
Smallmouth Bass	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1,000	19	13	6	0.0700	0.140	0	0.460	5.00	0
Smallmouth Bass	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	1,000	19	13	6	0.0730	0.150	0	0.460	5.00	0
Smallmouth Bass	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	1,000	19	10	1	0.0560	0.0560	0	0.460	0.490	0
Smallmouth Bass	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	1,760	19	12	5	66.0	5,000	1	170	5,000	1
Smallmouth Bass	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	310	19	17	1	7.30	7.30	0	34.0	40.0	0
Smallmouth Bass	SVOCs	Total	Carbazole	ug/kg	Wet	NV	19	19	-	9.10	9.10	-	34.0	40.0	-
Smallmouth Bass	SVOCs	Total	Chrysene	ug/kg	Wet	1,000	19	11	7	0.0760	0.0760	0	0.460	5.00	0
Smallmouth Bass	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	1,000	19	13	6	0.0590	0.120	0	0.460	5.00	0
Smallmouth Bass	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	626	19	18	-	16.0	71.0	0	34.0	71.0	0
Smallmouth Bass	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	626	19	19	-	11.0	11.0	0	34.0	40.0	0
Smallmouth Bass	SVOCs	Total	Fluoranthene	ug/kg	Wet	19,000	19	9	2	0.0900	0.0900	0	0.460	1.00	0
Smallmouth Bass	SVOCs	Total	Fluorene	ug/kg	Wet	19,000	19	2	12	0.150	0.150	0	0.460	5.00	0
Smallmouth Bass	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	1,000	19	12	2	0.0640	0.130	0	0.460	1.00	0
Smallmouth Bass	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	NV	19	19	-	7.70	7.70	-	34.0	40.0	-
Smallmouth Bass	SVOCs	Total	Phenanthrene	ug/kg	Wet	19,000	19	0	3	-	-	0	1.00	4.80	0
Smallmouth Bass	SVOCs	Total	Pyrene	ug/kg	Wet	1,000	19	10	5	0.0980	0.490	0	0.460	2.50	0
Sculpin	Metals	Total	Lead	mg/kg	Wet	0.120	17	1	-	0.0214	0.0214	0	0.0214	0.0214	0
Sculpin	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	35.0	17	17	-	2.40	14.0	0	9.20	50.0	2
Sculpin	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	35.0	17	17	-	2.60	69.0	1	19.0	99.0	3
Sculpin	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	35.0	17	17	-	2.30	62.0	2	9.20	62.0	3
Sculpin	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	35.0	17	17	-	2.20	35.0	0	9.20	50.0	2
Sculpin	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	35.0	17	17	-	0.510	13.0	0	9.20	50.0	2
Sculpin	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	35.0	17	14	-	13.0	130	3	13.0	130	5
Sculpin	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	35.0	17	17	-	1.90	82.0	3	9.20	82.0	4
Sculpin	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	35.0	17	17	-	2.50	13.0	0	9.20	50.0	2
Sculpin	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	35.0	17	17	-	2.00	10.0	0	9.20	50.0	2
Sculpin	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	35.0	17	14	-	13.0	130	3	13.0	130	4
Clam	Metals	Total	Antimony	mg/kg	Wet	NV	19	14	5	0.00200	0.00500	-	0.00700	0.0120	-
Clam	Metals	Total	Beryllium	mg/kg	Wet	NV	19	0	19	-	-	-	0.00280	0.00460	-
Clam	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	35.0	19	19	-	2.40	23.0	0	9.80	23.0	0
Clam	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	35.0	19	19	-	2.60	20.0	0	20.0	20.0	0
Clam	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	35.0	19	19	-	2.30	40.0	2	9.80	40.0	2
Clam	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	35.0	19	19	-	2.20	48.0	1	9.80	48.0	1

Table K-14a
Ecological Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
(6 of 6)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Clam	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	35.0	19	19	-	0.510	26.0	0	9.60	26.0	0
Clam	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	35.0	19	10	-	28.0	74.0	4	28.0	74.0	4
Clam	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	35.0	19	19	-	1.90	11.0	0	9.60	11.0	0
Clam	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	35.0	19	19	-	2.50	2.50	0	9.60	10.0	0
Clam	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	35.0	19	19	-	2.00	2.00	0	9.60	10.0	0
Clam	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	35.0	19	10	-	28.0	74.0	4	28.0	74.0	4
Clam	SVOCs	Total	Acenaphthene	ug/kg	Wet	19,000	19	1	2	0.110	0.110	0	0.490	0.500	0
Clam	SVOCs	Total	Anthracene	ug/kg	Wet	19,000	19	4	8	0.0650	0.330	0	0.470	2.50	0
Clam	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	1,000	19	11	-	0.0660	22.0	0	0.470	22.0	0
Clam	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	1,000	19	16	2	0.0810	0.860	0	0.470	2.50	0
Clam	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1,000	19	10	1	0.0700	0.800	0	0.480	2.50	0
Clam	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	1,000	19	11	8	0.0730	2.50	0	0.470	2.50	0
Clam	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	1,000	19	17	2	0.0560	0.580	0	0.470	2.50	0
Clam	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	1,760	19	0	11	-	-	0	180	280	0
Clam	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	310	19	16	3	7.30	11.0	0	36.0	56.0	0
Clam	SVOCs	Total	Carbazole	ug/kg	Wet	NV	19	19	-	9.10	13.0	-	36.0	56.0	-
Clam	SVOCs	Total	Chrysene	ug/kg	Wet	1,000	19	11	-	0.0760	7.80	0	0.470	7.80	0
Clam	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	1,000	19	19	-	0.0590	0.500	0	0.470	2.50	0
Clam	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	626	19	19	-	16.0	56.0	0	36.0	56.0	0
Clam	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	626	19	18	1	11.0	16.0	0	36.0	56.0	0
Clam	SVOCs	Total	Fluoranthene	ug/kg	Wet	19,000	19	5	-	8.60	16.0	0	8.60	16.0	0
Clam	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	1,000	19	13	5	0.0640	0.500	0	0.470	2.50	0
Clam	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	NV	19	9	10	7.70	11.0	-	36.0	56.0	-
Clam	SVOCs	Total	Pyrene	ug/kg	Wet	1,000	19	12	-	0.0980	7.20	0	0.470	7.20	0

Notes
For SVOCs: Although the column and filter fractions are screened, in addition to the totals, the SLVs are based on exposure to totals.
= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.
= When the number of applicable MRLs > SLV is higher than the number of applicable MDLs > SLV, they are highlited pink when the number of MDLs > SLV is zero or difference is more than 1.

Eco = Ecological
C+F = Column + Filter (MDL+MDL)
Dry = Dry weight
MDL = method detection limit
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
MRL = methode reporting limit
ND = non-detect
ng/L = nanogram per liter
NV = No value
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
PCB = polychlorinated biphenyl
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
Wet = Wet Weight
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table K-14b
Ecological PCB Congener Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
(1 of 2)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs below RDL	Number of EMPC Results	Minimum RDL of NDs	Maximum RDL of NDs	Number of Applicable RDLs > SLV	Minimum EMPC Value	Maximum EMPC Value	Number of EMPCs > SLV
Surface Water	Column	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet		5	3	2	0.0290	0.0330	-	0.0480	0.0770	-
Surface Water	Filter	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet	NV	5	2	-	0.0310	0.0390	-	-	-	-
Surface Water	C+F	77	3,3',4,4'-Tetrachlorobiphenyl	pg/L	Wet		5	-	-	0.0640	0.0870	-	-	-	-
Surface Water	Column	81	3,4,4',5-Tetrachlorobiphenyl	pg/L	Wet		5	5	-	0.00590	0.00980	-	-	-	-
Surface Water	Filter	81	3,4,4',5-Tetrachlorobiphenyl	pg/L	Wet	NV	5	5	-	0.00450	0.00840	-	-	-	-
Surface Water	C+F	81	3,4,4',5-Tetrachlorobiphenyl	pg/L	Wet		5	-	-	0.0111	0.0160	-	-	-	-
Surface Water	Column	114	2,3,4,4',5-Pentachlorobiphenyl	pg/L	Wet		5	5	-	0.00800	0.0150	-	-	-	-
Surface Water	Filter	114	2,3,4,4',5-Pentachlorobiphenyl	pg/L	Wet	NV	5	5	-	0.0170	0.0250	-	-	-	-
Surface Water	C+F	114	2,3,4,4',5-Pentachlorobiphenyl	pg/L	Wet		5	-	-	0.0290	0.0360	-	-	-	-
Surface Water	Column	123	2,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet		5	3	2	0.00370	0.00700	-	0.00900	0.0100	-
Surface Water	Filter	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/L	Wet	NV	5	5	-	0.0130	0.0230	-	-	-	-
Surface Water	C+F	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/L	Wet		5	-	-	0.0200	0.0330	-	-	-	-
Surface Water	Column	126	3,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet		5	5	-	0.00420	0.00600	-	-	-	-
Surface Water	Filter	126	3,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet	NV	5	5	-	0.00410	0.0112	-	-	-	-
Surface Water	C+F	126	3,3',4,4',5-Pentachlorobiphenyl	pg/L	Wet		5	-	-	0.00950	0.0154	-	-	-	-
Surface Water	Column	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet		5	4	-	0.0230	0.0280	-	-	-	-
Surface Water	Filter	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet	NV	5	0	-	-	-	-	-	-	-
Surface Water	C+F	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/L	Wet		5	-	-	-	-	-	-	-	-
Surface Water	Column	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet		5	1	1	0.0140	0.0140	-	0.0110	0.0110	-
Surface Water	Filter	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	NV	5	0	-	-	-	-	-	-	-
Surface Water	C+F	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet		5	-	-	-	-	-	-	-	-
Surface Water	Column	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet		5	5	-	0.00140	0.00290	-	-	-	-
Surface Water	Filter	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet	NV	5	5	-	0.00170	0.00880	-	-	-	-
Surface Water	C+F	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/L	Wet		5	-	-	0.00420	0.0109	-	-	-	-
Surface Water	Column	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/L	Wet		5	5	-	0.00180	0.00400	-	-	-	-
Surface Water	Filter	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/L	Wet	NV	5	3	1	0.00600	0.00800	-	0.0900	0.0900	-
Surface Water	C+F	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/L	Wet		5	-	-	0.00820	0.09250	-	-	-	-
Sediment	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Dry	4.00	19	15	4	0.0486	0.140	0	0.103	3.40	0
Sediment	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Dry	980	19	-	4	-	-	-	0.0580	1.71	0
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	1,200	19	2	6	0.158	0.201	0	0.0640	1.90	0
Sediment	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	0.280	19	8	8	0.0479	2.69	2	0.123	0.296	1
Sediment	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Dry	1,200	19	1	-	0.935	0.935	0	-	-	-
Sediment	Total	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	1,200	19	2	1	0.640	0.710	0	0.173	0.173	0
Sediment	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	1.20	19	18	1	0.0454	0.879	0	0.161	0.161	0
Sediment	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Dry	6,600	19	2	8	0.0479	0.814	0	0.127	0.620	0
Crayfish	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	80.0	15	8	3	0.125	0.361	0	0.239	0.823	0
Crayfish	Total	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	Wet	20,000	15	-	3	-	-	-	3.67	86.3	0
Crayfish	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Wet	20,000	15	-	1	-	-	-	2.61	2.61	0
Crayfish	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	20,000	15	-	1	-	-	-	3.11	3.11	0
Crayfish	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	5.80	15	8	-	0.397	3.51	0	-	-	-
Crayfish	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	20.0	15	15	-	0.167	2.95	0	-	-	-
Crayfish	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Wet	20,000	15	-	3	-	-	-	1.09	1.62	0
Smallmouth Bass	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	80.0	19	2	-	6.15	23.1	0	-	-	-
Smallmouth Bass	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	5.80	19	1	-	48.0	48.0	1	-	-	-
Smallmouth Bass	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	20.0	19	19	-	1.29	607	3	-	-	-

Table K-14b
Ecological PCB Congener Data Sensativity Analysis for Random Forebay Samples
Bradford Island - River Operable Unit
(2 of 2)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs below RDL	Number of EMPC Results	Minimum RDL of NDs	Maximum RDL of NDs	Number of Applicable RDLs > SLV	Minimum EMPC Value	Maximum EMPC Value	Number of EMPCs > SLV
Sculpin	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	80.0	17	11	5	0.225	295	1	0.382	0.846	0
Sculpin	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Wet	20,000	17	-	1	-	-	-	12.8	12.8	0
Sculpin	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	5.80	17	-	1	-	-	-	405	405	1
Sculpin	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	20.0	17	16	-	1.45	164	2	-	-	-
Clam	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	80.0	17	-	13	-	-	-	0.693	3.30	0
Clam	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	20.0	17	17	-	0.901	16.5	0	-	-	-

Notes
For C+F RDL values, the values shown are the sum of the RDLs and/or EMPCs for the ND column and filter results.
= The number of applicable RDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.
= The number of applicable EMPCs > SLV are hightlighted pink when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

Eco = Ecological
C+F = Column + Filter (RDL/EMPC + RDL/EMPC)
Dry = Dry weight
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
ND = non-detect
PCB = polychlorinated biphenyl
pg/kg = picograms per kilogram
pg/L = picograms per liter
RDL = reported detection limit
SLV = screening level value
Wet = Wet Weight

Table K-15a
Ecological Data Sensativity Analysis for Targeted Forebay Samples
Bradford Island - River Operable Unit
(1 of 3)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Forebay - Eagle Creek															
Sediment	Metals	Total	Antimony	mg/kg	Dry	3.00	2	0	1	-	-	0	0.0500	0.0500	0
Sediment	Metals	Total	Cadmium	mg/kg	Dry	0.674	2	2	-	0.0750	0.131	0	0.0750	0.131	0
Sediment	Metals	Total	Mercury	mg/kg	Dry	0.214	2	0	1	-	-	0	0.016	0.016	0
Sediment	Metals	Total	Thallium	mg/kg	Dry	0.354	2	2	-	0.0560	0.156	0	0.0560	0.156	0
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	NV	2	0	2	-	-	-	15.0	15.0	-
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	NV	2	2	-	150	150	-	150	150	-
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	1.80	2	2	-	1.70	1.70	0	7.30	7.40	2
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	1.80	2	2	-	1.70	1.70	0	15.0	15.0	2
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	1.80	2	2	-	1.70	1.70	0	7.30	7.40	2
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	1.80	2	2	-	1.70	1.70	0	7.30	7.40	2
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	1.80	2	1	-	1.70	1.70	0	7.30	7.30	1
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	1.80	2	2	-	1.70	1.70	0	7.30	7.40	2
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	1.80	2	2	-	1.70	1.70	0	7.30	7.40	2
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	1.80	2	2	-	1.70	1.70	0	7.30	7.40	2
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	1.80	2	2	-	1.70	1.70	0	7.30	7.40	2
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Dry	1.80	2	1	-	3.40	3.40	1	14.6	14.6	1
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	750	2	2	-	200	200	0	200	200	0
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	110	2	2	-	9.90	9.90	0	9.90	9.90	0
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	140	2	1	1	1.30	1.30	0	9.90	9.90	0
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	110	2	2	-	9.90	11.0	0	9.90	11.0	0
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	110	2	2	-	1.20	1.20	0	9.90	9.90	0
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	48.0	2	2	-	2.90	2.90	0	9.90	9.90	0
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	290	2	2	-	1.00	1.00	0	9.90	9.90	0
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	57.0	2	1	1	1.40	1.40	0	9.90	9.90	0
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	77.0	2	2	-	1.70	1.70	0	9.90	9.90	0
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	42.0	2	0	2	-	-	0	9.90	9.90	0
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	32.0	2	1	1	1.40	1.40	0	9.90	9.90	0
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	32.0	2	1	1	1.60	1.60	0	9.90	9.90	0
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	27.0	2	1	-	2.50	2.50	0	9.90	9.90	0
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	300	2	1	1	2.30	2.30	0	9.90	9.90	0
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	27.0	2	1	1	2.50	2.50	0	9.90	9.90	0
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	57.0	2	0	1	-	-	0	9.90	9.90	0
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	33.0	2	2	-	2.20	2.20	0	9.90	9.90	0
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	111	2	1	-	2.20	2.20	0	9.90	9.90	0
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	17.0	2	1	1	1.90	1.90	0	9.90	9.90	0
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	53.0	2	0	1	-	-	0	9.90	9.90	0
Forebay - Goose Island															
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	NV	2	0	2	-	-	-	60.0	64.0	-
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	1.80	2	2	-	2.50	2.70	2	12.0	13.0	2
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	1.80	2	2	-	2.50	2.70	2	24.0	26.0	2
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	1.80	2	2	-	2.50	2.70	2	12.0	13.0	2
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	1.80	2	2	-	2.50	2.70	2	12.0	13.0	2
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	1.80	2	2	-	2.50	2.70	2	12.0	13.0	2
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	1.80	2	1	1	2.50	2.50	1	12.0	13.0	2

Table K-15a
Ecological Data Sensativity Analysis for Targeted Forebay Samples
Bradford Island - River Operable Unit
(2 of 3)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	1.80	2	2	-	2.50	2.70	2	12.0	13.0	2
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Dry	1.80	2	1	-	5.00	5.00	1	24.0	24.0	1
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	750	2	0	2	-	-	0	120	130	0
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	110	2	2	-	1.80	1.90	0	12.0	13.0	0
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	140	2	2	-	1.60	1.70	0	12.0	13.0	0
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	110	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	110	2	2	-	1.50	1.60	0	12.0	13.0	0
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	48.0	2	1	1	3.70	3.70	0	12.0	13.0	0
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	290	2	2	-	1.20	1.30	0	12.0	13.0	0
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	57.0	2	2	-	1.70	1.80	0	12.0	13.0	0
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	77.0	2	2	-	2.10	2.20	0	12.0	13.0	0
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	42.0	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	32.0	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	32.0	2	0	1	-	-	0	12.0	12.0	0
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	27.0	2	0	1	-	-	0	12.0	12.0	0
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	300	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	27.0	2	1	1	3.00	3.00	0	12.0	13.0	0
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	57.0	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	33.0	2	2	-	2.70	2.80	0	12.0	13.0	0
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	111	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	17.0	2	0	2	-	-	0	12.0	13.0	0
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	53.0	2	0	2	-	-	0	12.0	13.0	0
Crayfish	Metals	Total	Antimony	mg/kg	Wet	NV	1	0	1	-	-	-	0.0120	0.0120	-
Crayfish	Metals	Total	Beryllium	mg/kg	Wet	NV	1	0	1	-	-	-	0.00500	0.00500	-
Crayfish	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	35.0	1	1	-	2.40	2.40	0	9.50	9.50	0
Crayfish	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	35.0	1	1	-	2.60	2.60	0	9.50	9.50	0
Crayfish	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	35.0	1	1	-	2.30	2.30	0	9.50	9.50	0
Crayfish	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	35.0	1	1	-	2.20	2.20	0	9.50	9.50	0
Crayfish	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	35.0	1	1	-	0.510	0.510	0	9.50	9.50	0
Crayfish	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	35.0	1	1	-	1.80	1.80	0	9.50	9.50	0
Crayfish	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	35.0	1	1	-	1.90	1.90	0	9.50	9.50	0
Crayfish	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	35.0	1	1	-	2.50	2.50	0	9.50	9.50	0
Crayfish	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	35.0	1	1	-	2.00	2.00	0	9.50	9.50	0
Crayfish	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	35.0	1	1	-	2.60	2.60	0	9.50	9.50	0
Crayfish	SVOCs	Total	Acenaphthene	ug/kg	Wet	19,000	1	1	-	0.500	0.500	0	0.500	0.500	0
Crayfish	SVOCs	Total	Anthracene	ug/kg	Wet	19,000	1	0	1	-	-	0	0.500	0.500	0
Crayfish	SVOCs	Total	Benzo(a)anthracene	ug/kg	Wet	1,000	1	1	-	0.500	0.500	0	0.500	0.500	0
Crayfish	SVOCs	Total	Benzo(a)pyrene	ug/kg	Wet	1,000	1	1	-	0.0610	0.0610	0	0.500	0.500	0
Crayfish	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Wet	1,000	1	0	1	-	-	0	0.500	0.500	0
Crayfish	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Wet	1,000	1	0	1	-	-	0	0.500	0.500	0
Crayfish	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Wet	1,000	1	0	1	-	-	0	0.500	0.500	0
Crayfish	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	1,760	1	1	-	66.0	66.0	0	200	200	0
Crayfish	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	310	1	1	-	7.30	7.30	0	39.0	39.0	0
Crayfish	SVOCs	Total	Carbazole	ug/kg	Wet	NV	1	1	-	7.70	7.70	-	39.0	39.0	-
Crayfish	SVOCs	Total	Chrysene	ug/kg	Wet	1,000	1	1	-	0.200	0.200	0	0.500	0.500	0

Table K-15a
Ecological Data Sensativity Analysis for Targeted Forebay Samples
Bradford Island - River Operable Unit
(3 of 3)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Crayfish	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	1,000	1	1	-	0.0450	0.0450	0	0.500	0.500	0
Crayfish	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	626	1	1	-	140	140	0	140	140	0
Crayfish	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	626	1	1	-	11.0	11.0	0	39.0	39.0	0
Crayfish	SVOCs	Total	Fluoranthene	ug/kg	Wet	19,000	1	1	-	0.500	0.500	0	0.500	0.500	0
Crayfish	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Wet	1,000	1	0	1	-	-	0	0.500	0.500	0
Crayfish	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	NV	1	1	-	11.0	11.0	-	39.0	39.0	-
Crayfish	SVOCs	Total	Pyrene	ug/kg	Wet	1,000	1	1	-	0.500	0.500	0	0.500	0.500	0
Clam	Metals	Total	Antimony	mg/kg	Wet	NV	1	1	-	0.00100	0.00100	-	0.00900	0.00900	-
Clam	Metals	Total	Beryllium	mg/kg	Wet	NV	1	0	1	-	-	-	0.00400	0.00400	-
Clam	PCB Aroclors	Total	Aroclor 1016	ug/kg	Wet	35.0	1	1	-	6.10	6.10	0	9.70	9.70	0
Clam	PCB Aroclors	Total	Aroclor 1221	ug/kg	Wet	35.0	1	1	-	5.90	5.90	0	9.70	9.70	0
Clam	PCB Aroclors	Total	Aroclor 1232	ug/kg	Wet	35.0	1	1	-	9.70	9.70	0	9.70	9.70	0
Clam	PCB Aroclors	Total	Aroclor 1242	ug/kg	Wet	35.0	1	1	-	6.60	6.60	0	9.70	9.70	0
Clam	PCB Aroclors	Total	Aroclor 1248	ug/kg	Wet	35.0	1	1	-	5.20	5.20	0	9.70	9.70	0
Clam	PCB Aroclors	Total	Aroclor 1254	ug/kg	Wet	35.0	1	1	-	14.0	14.0	0	14.0	14.0	0
Clam	PCB Aroclors	Total	Aroclor 1260	ug/kg	Wet	35.0	1	1	-	6.30	6.30	0	9.70	9.70	0
Clam	PCB Aroclors	Total	Aroclor 1262	ug/kg	Wet	35.0	1	1	-	3.20	3.20	0	9.70	9.70	0
Clam	PCB Aroclors	Total	Aroclor 1268	ug/kg	Wet	35.0	1	1	-	2.00	2.00	0	9.70	9.70	0
Clam	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Wet	35.0	1	1	-	14.0	14.0	0	14.0	14.0	0
Clam	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Wet	1,760	1	1	-	66.0	66.0	0	190	190	0
Clam	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Wet	310	1	1	-	7.30	7.30	0	38.0	38.0	0
Clam	SVOCs	Total	Carbazole	ug/kg	Wet	NV	1	1	-	7.70	7.70	-	38.0	38.0	-
Clam	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Wet	1,000	1	0	1	-	-	0	0.490	0.490	0
Clam	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Wet	626	1	1	-	170	170	0	170	170	0
Clam	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Wet	626	1	1	-	11.0	11.0	0	38.0	38.0	0
Clam	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Wet	NV	1	0	1	-	-	0	38.0	38.0	-

Notes

= The number of applicable MDLs > SLV are hightlighted yellow when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

= When the number of applicable MRLs > SLV is higher than the number of applicable MDLs > SLV, they are highlited pink when the number of MDLs > SLV is zero or difference is more than 1.

Eco = Ecological
Dry = Dry weight
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit
ND = non-detect
NV = No value
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
PCB = polychlorinated biphenyl
SLV = screening level value
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
Wet = Wet Weight

Table K-15b
Ecological PCB Congener Data Sensativity Analysis for Targeted Forebay Samples
Bradford Island - River Operable Unit
(1 of 1)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs below RDL	Number of EMPC Results	Minimum RDL of NDs	Maximum RDL of NDs	Number of Applicable RDLs > SLV	Minimum EMPC Value	Maximum EMPC Value	Number of EMPCs > SLV
Sediment	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Dry	4.00	2	-	1	-	-	-	0.150	0.150	0
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	1,200	2	-	1	-	-	-	0.970	0.970	0
Sediment	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	0.280	2	-	2	-	-	-	0.255	0.419	1
Sediment	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	1.20	2	2	-	0.241	0.250	0	-	-	-
Crayfish	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	80.0	1	1	-	0.145	0.145	0	-	-	-
Crayfish	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Wet	5.80	1	-	1	-	-	-	0.261	0.261	0
Crayfish	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	20.0	1	1	-	0.164	0.164	0	-	-	-
Sculpin	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	80.0	1	-	1	-	-	-	0.882	0.882	0
Sculpin	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	20.0	1	1	-	1.31	1.31	0	-	-	-
Clam	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Wet	80.0	1	-	1	-	-	-	2.17	2.17	0
Clam	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Wet	20.0	1	1	-	1.08	1.08	0	-	-	-

Notes

= The number of applicable EMPCs > SLV are hightlighted pink when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

Eco = Ecological
Dry = Dry weight
EMPC = The analyte was not positively identified; the associated
numerical value is the Estimated Maximum Potential Concentration.
ND = non-detect
PCB = polychlorinated biphenyl
pg/kg = picograms per kilogram
RDL = reported detection limit
SLV = screening level value
Wet = Wet Weight

Table K-16a
Ecological Data Sensativity Analysis for Downstream Samples
Bradford Island - River Operable Unit
(1 of 1)

Medium	Analyte Group	Preparation Fraction	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs (below MDL)	Number of Detects Between MDL and MRL	Minimum MDL of NDs	Maximum MDL of NDs	Number of Applicable MDLs > SLV	Minimum MRL of NDs and Detects below MRL	Maximum MRL of NDs and Detects below MRL	Number of Applicable MRLs > SLV
Sediment	Metals	Total	Thallium	mg/kg	Dry	0.354	6	1	-	0.130	0.130	0	0.130	0.130	0
Sediment	NWTPH-Dx	Total	Diesel Range Organics	mg/kg	Dry	NV	6	0	4	-	-	-	14.0	15.0	-
Sediment	NWTPH-Dx	Total	Residual Range Organics	mg/kg	Dry	NV	6	5	1	140	180	-	140	180	-
Sediment	PCB Aroclors	Total	Aroclor 1016	ug/kg	Dry	1.80	6	6	-	1.70	1.70	0	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1221	ug/kg	Dry	1.80	6	6	-	1.70	1.70	0	14.0	18.0	6
Sediment	PCB Aroclors	Total	Aroclor 1232	ug/kg	Dry	1.80	6	6	-	1.70	1.70	0	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1242	ug/kg	Dry	1.80	6	6	-	1.70	1.70	0	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1248	ug/kg	Dry	1.80	6	6	-	1.70	1.70	0	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1254	ug/kg	Dry	1.80	6	6	-	1.70	1.70	0	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1260	ug/kg	Dry	1.80	6	6	-	1.70	1.70	0	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1262	ug/kg	Dry	1.80	6	6	-	1.70	1.70	0	7.00	8.80	6
Sediment	PCB Aroclors	Total	Aroclor 1268	ug/kg	Dry	1.80	6	6	-	1.70	1.70	0	7.00	8.80	6
Sediment	PCB Aroclors	Total	Total PCBs As Aroclors	ug/kg	Dry	1.80	6	6	-	1.70	1.70	0	14.0	18.0	6
Sediment	SVOCs	Total	Bis(2-ethylhexyl) Phthalate	ug/kg	Dry	750	6	6	-	200	200	0	200	200	0
Sediment	SVOCs	Total	Butyl Benzyl Phthalate	ug/kg	Dry	110	6	6	-	1.50	9.90	0	9.70	10.0	0
Sediment	SVOCs	Total	Carbazole	ug/kg	Dry	140	6	5	1	1.30	1.30	0	9.70	10.0	0
Sediment	SVOCs	Total	Di-n-butyl Phthalate	ug/kg	Dry	110	6	6	-	9.80	14.0	0	9.80	14.0	0
Sediment	SVOCs	Total	Di-n-octyl Phthalate	ug/kg	Dry	110	6	6	-	1.20	1.20	0	9.70	10.0	0
Sediment	SVOCs	Total	p-cresol (4-Methylphenol)	ug/kg	Dry	48.0	6	4	1	2.90	2.90	0	9.70	10.0	0
Sediment	SVOCs	Total	Acenaphthene	ug/kg	Dry	290	6	6	-	1.00	1.00	0	9.70	10.0	0
Sediment	SVOCs	Total	Anthracene	ug/kg	Dry	57.0	6	3	3	1.40	1.40	0	9.70	10.0	0
Sediment	SVOCs	Total	Fluorene	ug/kg	Dry	77.0	6	6	-	1.70	1.70	0	9.70	10.0	0
Sediment	SVOCs	Total	Phenanthrene	ug/kg	Dry	42.0	6	2	4	1.30	1.30	0	9.70	10.0	0
Sediment	SVOCs	Total	Total LPAHs (KM, capped)	ug/kg	Dry	76.0	6	2	4	5.40	5.40	0	38.8	38.8	0
Sediment	SVOCs	Total	Benzo(a)anthracene	ug/kg	Dry	32.0	6	0	5	-	-	0	9.70	10.0	0
Sediment	SVOCs	Total	Benzo(a)pyrene	ug/kg	Dry	32.0	6	1	3	1.60	1.60	0	9.70	9.90	0
Sediment	SVOCs	Total	Benzo(b)fluoranthene	ug/kg	Dry	27.0	6	2	3	2.50	2.50	0	9.70	10.0	0
Sediment	SVOCs	Total	Benzo(g,h,i)perylene	ug/kg	Dry	300	6	3	3	2.30	2.30	0	9.70	10.0	0
Sediment	SVOCs	Total	Benzo(k)fluoranthene	ug/kg	Dry	27.0	6	4	2	2.50	2.50	0	9.70	10.0	0
Sediment	SVOCs	Total	Chrysene	ug/kg	Dry	57.0	6	1	4	1.40	1.40	0	9.70	10.0	0
Sediment	SVOCs	Total	Dibenz(a,h)anthracene	ug/kg	Dry	33.0	6	5	1	2.20	2.20	0	9.70	10.0	0
Sediment	SVOCs	Total	Fluoranthene	ug/kg	Dry	111	6	1	3	2.20	2.20	0	9.70	9.90	0
Sediment	SVOCs	Total	Indeno(1,2,3-cd)pyrene	ug/kg	Dry	17.0	6	3	3	1.90	1.90	0	9.70	10.0	0
Sediment	SVOCs	Total	Pyrene	ug/kg	Dry	53.0	6	0	4	-	-	0	9.70	9.90	0

Notes

= When the number of applicable MRLs > SLV when they represent more than 10% of the data, recognizing that this does not take into account spacial density.

Eco = Ecological
Dry = Dry weight
MDL = method detection limit
mg/kg = milligrams per kilogram
MRL = methode reporting limit
ND = non-detect
NV = No value

NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
PCB = polychlorinated biphenyl
SLV = screening level value
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table K-16b
Ecological PCB Congener Data Sensativity Analysis for Downstream Samples
Bradford Island - River Operable Unit
(1 of 1)

Medium	Preparation Fraction	IUPAC Number	Analyte	Unit	Basis	Lowest Eco SLV	Number of Samples	Number of NDs below RDL	Number of EMPC Results	Minimum RDL of NDs	Maximum RDL of NDs	Number of Applicable RDLs > SLV	Minimum EMPC Value	Maximum EMPC Value	Number of EMPCs > SLV
Sediment	Total	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	Dry	8.00	6	-	2	-	-	-	0.259	0.531	0
Sediment	Total	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	Dry	4.00	6	5	-	0.0492	0.100	0	-	-	-
Sediment	Total	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	Dry	980	6	1	-	0.0976	0.0976	0	-	-	-
Sediment	Total	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	Dry	1,200	6	-	1	-	-	-	0.168	0.168	0
Sediment	Total	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	Dry	0.280	6	5	-	0.0787	0.171	0	-	-	-
Sediment	Total	156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	Dry	1,200	6	-	2	-	-	-	0.604	1.39	0
Sediment	Total	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	Dry	1.20	6	6	-	0.0630	0.154	0	-	-	-
Sediment	Total	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	Dry	6,600	6	1	1	0.0733	0.0733	0	0.115	0.115	0

Notes
Eco = Ecological
Dry = Dry weight
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
ND = non-detect
PCB = polychlorinated biphenyl
pg/kg = picograms per kilogram
SLV = screening level value
RDL = reported detection limit

APPENDIX L
SITE AND REFERENCE AREA COMPARISON

Figure L-1. Statistical Comparison of Upland OU Soils to Reference Area Soils -- MDL Censored

						Reference Area										Site AOPC										Shapiro-Wilk W Test	Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Site AOPC	Depth Group	Analyte Group	Analyte	Unit	Median MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	Distribution	Appropriate Statistical Test	p-value	Significant Higher Conc in Site?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Landfill	0-1 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	10	100%	100%	0%	14026	3769	7560	19100	-	-	Normal	t-Test (normal)	1.000	**No**	4358	5019	22%
Landfill	0-1 ft	Metals	Antimony	mg/kg	0.3	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	20	20%	20%	80%	0.815	1.210	0.309	4.2	0.2	2.9	-	Wilcoxon Rank Sum Test	0.043	**Yes**			
Landfill	0-1 ft	Metals	Arsenic	mg/kg	-	14	100%	100%	0%	3.10	1.26	1.09	5.18	-	-	21	100%	100%	0%	5.33	6.02	1.5	30.1	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.063	**No**	4.75	4.58	148%
Landfill	0-1 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	21	100%	100%	0%	116	41	58.9	242.5	-	-	Lognormal	t-Test (lognormal)	0.314	**No**	37.9	36.5	33%
Landfill	0-1 ft	Metals	Beryllium	mg/kg	0.27	14	100%	100%	0%	0.491	0.091	0.319	0.629	-	-	21	81%	81%	19%	0.378	0.084	0.3	0.5755	0.189	0.28	-	Wilcoxon Rank Sum Test	0.999	**No**	0.0871	0.0839	17%
Landfill	0-1 ft	Metals	Cadmium	mg/kg	0.27	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	21	71%	71%	29%	0.769	0.524	0.343	2.09	0.26	0.29	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	10	100%	100%	0%	5608	969	4380	6920	-	-	Normal	t-Test (normal)	0.985	**No**	1537	1770	25%
Landfill	0-1 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	21	100%	100%	0%	77.2	173.6	14.7	801	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.278	**No**	135	130	598%
Landfill	0-1 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	10	100%	100%	0%	11.1	4.9	6.4	22.7	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.998	**No**	3.90	4.50	27%
Landfill	0-1 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	21	100%	100%	0%	73.6	101.3	23.5	494	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.076	**No**	79.1	76.2	195%
Landfill	0-1 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	21	100%	100%	0%	25524	7916	14100	45900	-	-	Normal	t-Test (normal)	0.980	**No**	6624	6381	21%
Landfill	0-1 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	21	100%	100%	0%	211	236	5.34	741	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Landfill	0-1 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	10	100%	100%	0%	8933	9321	4260	35100	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.873	**No**	6263	7213	92%
Landfill	0-1 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	21	100%	100%	0%	382	142	196	720	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	141	136	22%
Landfill	0-1 ft	Metals	Mercury	mg/kg	0.11	14	100%	0%	100%	0.0494	0.0091	0.034	0.068	-	-	23	78%	61%	39%	0.427	0.851	0.07	4.15	0.1	0.11	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	21	100%	100%	0%	58.4	122.5	13.4	570	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.186	**No**	95.4	91.9	492%
Landfill	0-1 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	10	100%	100%	0%	1325	291	797	1870	-	-	Normal	t-Test (normal)	0.526	**No**	354	408	31%
Landfill	0-1 ft	Metals	Selenium	mg/kg	0.4	14	0%	0%	100%	-	-	-	-	0.4	0.5	21	14%	5%	95%	0.245	0.144	0.205	0.848	0.2	1.5	-	Contingency Table Analysis	0.203	**No**			
Landfill	0-1 ft	Metals	Silver	mg/kg	0.51	14	86%	0%	100%	0.0583	0.0412	0.027	0.187	0.022	0.023	21	33%	10%	90%	0.346	0.286	0.2	1.5	0.2	0.57	-	Wilcoxon Rank Sum Test	0.129	**No**	0.224	0.216	370%
Landfill	0-1 ft	Metals	Sodium	mg/kg	169	14	100%	36%	64%	171	75	69.6	324	-	-	10	90%	90%	10%	495	57	420	570	169	169	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	Metals	Thallium	mg/kg	0.26	14	57%	0%	100%	0.145	0.023	0.128	0.203	0.042	0.103	21	10%	5%	95%	0.109	0.060	0.0953	0.378	0.2	0.3	-	Contingency Table Analysis	1.000	**No**			
Landfill	0-1 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	10	100%	100%	0%	42.3	8.2	34.3	56.3	-	-	Normal	t-Test (normal)	1.000	**No**	11.6	13.4	17%
Landfill	0-1 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	21	100%	100%	0%	164	120	41.6	635	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Acenaphthene	ug/kg	20	14	64%	0%	100%	1.55	0.57	1.2	3.4	1	1	27	70%	63%	37%	261	523	15	2600	20	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Acenaphthylene	ug/kg	20	14	7%	0%	100%	-	-	1.6	1.6	1.4	1.4	27	26%	11%	89%	19.9	20.1	3.4	78.1	20	190	-	Contingency Table Analysis	0.153	**No**			
Landfill	0-1 ft	SVOCs	Anthracene	ug/kg	114.9	14	86%	0%	100%	2.33	0.94	1.5	4.9	1.4	1.4	27	85%	41%	59%	398	613	12	2700	49.8	180	-	Wilcoxon Rank Sum Test	0.004	**Yes**			
Landfill	0-1 ft	SVOCs	Benzo(a)anthracene	ug/kg	71.35	14	100%	0%	100%	14.0	7.2	4.6	34	-	-	27	93%	85%	15%	2970	6280	29	32000	49.8	92.9	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Benzo(a)pyrene	ug/kg	42.65	14	100%	7%	93%	18.2	9.5	7.7	45	-	-	27	93%	89%	11%	3180	6450	28	33000	35.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	49.8	14	100%	7%	93%	23.4	11.5	9.1	55	-	-	24	96%	92%	8%	4330	12900	34	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	27.8	14	100%	7%	93%	13.7	6.6	5.8	32	-	-	27	89%	85%	15%	1580	3510	20	18000	25.1	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	49.8	14	100%	0%	100%	8.00	3.94	2.7	19	-	-	24	96%	92%	8%	3460	12900	40	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Chrysene	ug/kg	49.8	14	100%	0%	100%	18.3	9.5	6.4	45	-	-	27	96%	96%	4%	3110	6180	62	32000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	2.2	14	50%	50%	50%	3.53	1.20	2.7	6.9	2.2	2.2	27	81%	81%	19%	612	1850	18	9900	35.5	1800	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Fluoranthene	ug/kg	60.45	14	100%	7%	93%	27.0	14.0	10	66	-	-	27	93%	89%	11%	5320	10800	42	54000	49.8	71.1	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Fluorene	ug/kg	1.7	14	7%	7%	93%	-	-	3.2	3.2	1.7	1.7	27	59%	59%	41%	130	239	10	1200	20	180	-	Contingency Table Analysis	0.001	**Yes**			
Landfill	0-1 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	39.2	14	100%	0%	100%	14.1	7.5	5.2	34	-	-	27	89%	85%	15%	1790	3790	18	19000	35.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Naphthalene	ug/kg	20	14	43%	0%	100%	1.47	0.27	1.3	2.2	1.3	1.3	27	41%	30%	70%	98.5	212.0	5	823	20	190	-	Wilcoxon Rank Sum Test	0.021	**Yes**			
Landfill	0-1 ft	SVOCs	Phenanthrene	ug/kg	49.8	14	100%	0%	100%	13.2	7.2	5.5	34	-	-	27	96%	81%	19%	1540	2480	13	12000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Pyrene	ug/kg	49.8	14	100%	7%	93%	26.8	13.3	10	64	-	-	27	96%	93%	7%	4940	8640	43	40000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Total LPAHs	ug/kg	299	14	100%	0%	100%	21	9	12	49	-	-	27	96%	70%	30%	2549	3812	141	18674	299	299	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Total HPAHs	ug/kg	498	14	100%	0%	100%	167	84	65	401	-	-	27	96%	93%	7%	30467	69775	334	367900	498	498	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	12	100%	100%	0%	13008	4235	6000	19100	-	-	Normal	t-Test (normal)	1.000	**No**	4506	4709	21%
Landfill	0-3 ft	Metals	Antimony	mg/kg	0.3	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	22	27%	27%	73%	0.958	1.230	0.309	4.2	0.2	2.9	-	Wilcoxon Rank Sum Test	0.019	**Yes**			
Landfill	0-3 ft	Metals	Arsenic	mg/kg	-	14	100%	100%	0%	3.10	1.26	1.09	5.18	-	-	23	100%	100%	0%	5.30	5.75	1.5	30.1	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.041	**Yes**			
Landfill	0-3 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	23	100%	100%	0%	114	42	42.6	242.5	-	-	Lognormal	t-Test (lognormal)	0.442	**No**	38.9	37.4	34%
Landfill	0-3 ft	Metals	Beryllium	mg/kg	0.2295	14	100%	100%	0%	0.491	0.091	0.319	0.629	-	-	23	74%	74%	26%	0.371	0.083	0.3	0.5755	0.157	0.28	-	Wilcoxon Rank Sum Test	1.000	**No**	0.0864	0.0833	17%
Landfill	0-3 ft	Metals	Cadmium	mg/kg	0.27	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	23	74%	74%	26%	0.888	0.756	0.343	3.54	0.26	0.29	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	12	100%	100%	0%	6055	1654	4380	10485	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.962	**No**	1751	1830	26%
Landfill	0-3 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	23	100%	100%	0%	190	444	14.7	1950	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.162	**No**	352	339	1559%
Landfill	0-3 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	12	100%	100%	0%	14.5	10.0	6.4	41	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.962	**No**	7.11	7.43	45%
Landfill	0-3 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	23	100%	100%	0%	85.3	116.0	23.5	494	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.061	**No**	92.1	88.8	228%
Landfill	0-3 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	23	100%	100%	0%	27267	9645	14100	51000	-	-	Lognormal	t-Test (lognormal)	0.955	**No**	8002	7709	26%
Landfill	0-3 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	29	100%	100%	0%	342	413	5.34	1660	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Landfill	0-3 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	12	100%	100%	0%	16190	21772	4260	77700	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.611	**No**	14854	15522	198%
Landfill	0-3 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	23	100%	100%	0%	462	323	196	1712.5	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	270	260	41%
Landfill	0-3 ft	Metals	Mercury	mg/kg	0.11	14	100%	0%	100%	0.0494	0.0091	0.034	0.068	-	-	25	80%	56%	44%	0.397	0.823	0.0475	4.15	0.1	0.11	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Landfill	0-3 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	23	100%	100%	0%	148	356	13.4	1610	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.102	**No**	282	272	1458%
Landfill	0-3 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	12	100%	100%	0%	1191	418	322	1870	-	-	Normal	t-Test (normal)	0.812	**No**	404	422	32%
Landfill	0-3 ft	Metals	Selenium	mg/kg	0.4	14	0%	0%	100%	-	-	-	-	0.4	0.5	23	22%	9%	91%	0.276	0.192	0.205	0.879	0.2	1.5	-	Contingency Table Analysis	0.077	**No**			
Landfill	0-3 ft	Metals	Silver	mg/kg	0.51	14	86%	0%	100%	0.0583	0.0412	0.027	0.187	0.022	0.023	23	39%	13%	87%	0.327	0.304	0.126	1.5	0.2	0.57	-	Wilcoxon Rank Sum Test	0.088	**No**	0.242	0.233	400%
Landfill	0-3 ft	Metals	Sodium	mg/kg	147	14	100%	36%	64%	171	75	69.6	324	-	-	12	75%	75%	25%	482	59	420	570	141	169	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Landfill	0-3 ft	Metals	Thallium	mg/kg	0.26	14	57%	0%	100%	0.145	0.023	0.128	0.203	0.042	0.103	23	17%	4%	96%	0.0917	0.0629	0.0578	0.378	0.2	0.3	-	Wilcoxon Rank Sum Test	0.234	**No**	0.0519	0.0500	34%
Landfill	0-3 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	12	100%	100%	0%	43.2	8.5	34.3	56.3	-	-	Normal	t-Test (normal)	1.000	**No**	11.5	12.0	15%
Landfill	0-3 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	23	100%	100%	0%	204	234	41.6	1140	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Acenaphthene	ug/kg	20	14	64%	0%	100%	1.55	0.57	1.2	3.4	1	1	33	76%	70%	30%	395	669	15	2600	20	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Acenaphthylene	ug/kg	20	14	7%	0%	100%	-	-	1.6	1.6	1.4	1.4	33	39%	18%	82%	25.5	25.9	3.4	111	20	190	-	Contingency Table Analysis	0.026	**Yes**			
Landfill	0-3 ft	SVOCs	Anthracene	ug/kg	114.9	14	86%	0%	100%	2.33	0.94	1.5	4.9	1.4	1.4	33	88%	52%	48%	761	1510	12	8440	49.8	180	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Landfill	0-3 ft	SVOCs	Benzo(a)anthracene	ug/kg	71.35	14	100%	0%	100%	14.0	7.2	4.6	34	-	-	33	94%	88%	12%	4330	7300	29	32000	49.8	92.9	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Benzo(a)pyrene	ug/kg	42.65	14	100%	7%	93%	18.2	9.5	7.7	45	-	-	33	94%	91%	9%	4890	8130	28	34000	35.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	49.8	14	100%	7%	93%	23.4	11.5	9.1	55	-	-	28	96%	93%	7%	5030	12100	34	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			

Figure L-1. Statistical Comparison of Upland OU Soils to Reference Area Soils -- MDL Censored

					Reference Area										Site AOPC										Shapiro-Wilk W Test	Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Site AOPC	Depth Group	Analyte Group	Analyte	Unit	Median MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	Distribution	Appropriate Statistical Test	p-value	Significant Higher Conc in Site?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Landfill	0-3 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	27.8	14	100%	7%	93%	13.7	6.6	5.8	32	-	-	33	91%	88%	12%	2490	4320	20	18000	25.1	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	49.8	14	100%	0%	100%	8.00	3.94	2.7	19	-	-	28	96%	93%	7%	3440	11900	40	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Chrysene	ug/kg	49.8	14	100%	0%	100%	18.3	9.5	6.4	45	-	-	33	97%	97%	3%	4780	8050	62	35300	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	2.2	14	50%	50%	50%	3.53	1.20	2.7	6.9	2.2	2.2	33	85%	85%	15%	739	1710	18	9900	35.5	1800	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Fluoranthene	ug/kg	60.45	14	100%	7%	93%	27.0	14.0	10	66	-	-	33	94%	91%	9%	7750	12600	42	54000	49.8	71.1	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Fluorene	ug/kg	1.7	14	7%	7%	93%	-	-	3.2	3.2	1.7	1.7	33	67%	67%	33%	203	343	10	1610	20	180	-	Contingency Table Analysis	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	39.2	14	100%	0%	100%	14.1	7.5	5.2	34	-	-	33	91%	88%	12%	2940	5000	18	20000	35.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Naphthalene	ug/kg	20	14	43%	0%	100%	1.47	0.27	1.3	2.2	1.3	1.3	33	52%	42%	58%	98.7	193.0	5	823	20	190	-	Wilcoxon Rank Sum Test	0.004	**Yes**			
Landfill	0-3 ft	SVOCs	Phenanthrene	ug/kg	49.8	14	100%	0%	100%	13.2	7.2	5.5	34	-	-	33	97%	85%	15%	2500	4260	13	21900	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Pyrene	ug/kg	49.8	14	100%	7%	93%	26.8	13.3	10	64	-	-	33	97%	94%	6%	8220	13700	43	67100	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Total LPAHs	ug/kg	299	14	100%	0%	100%	21	9	12	49	-	-	33	97%	76%	24%	4065	6694	141	34767	299	299	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Total HPAHs	ug/kg	498	14	100%	0%	100%	167	84	65	401	-	-	33	97%	94%	6%	43348	75465	334	367900	498	498	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	26	100%	100%	0%	10731	5200	2380	23100	-	-	Normal	t-Test (normal)	1.000	**No**	5042	4858	21%
Landfill	0-10 ft	Metals	Antimony	mg/kg	0.3	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	36	56%	56%	44%	1.50	1.86	0.309	8.19	0.2	2.9	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	Metals	Arsenic	mg/kg	-	14	100%	100%	0%	3.10	1.26	1.09	5.18	-	-	37	100%	100%	0%	4.73	4.71	1.5	30.1	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.066	**No**	4.09	3.94	127%
Landfill	0-10 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	37	100%	100%	0%	104	41	34	242.5	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.719	**No**	38.7	37.3	34%
Landfill	0-10 ft	Metals	Beryllium	mg/kg	0.167	14	100%	100%	0%	0.491	0.091	0.319	0.629	-	-	37	70%	70%	30%	0.298	0.111	0.186	0.5755	0.155	0.28	-	Wilcoxon Rank Sum Test	1.000	**No**	0.106	0.102	21%
Landfill	0-10 ft	Metals	Cadmium	mg/kg	0.27	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	37	84%	84%	16%	1.13	0.78	0.343	3.54	0.26	0.29	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	26	100%	100%	0%	5336	1583	1760	10485	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.998	**No**	1671	1610	23%
Landfill	0-10 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	37	100%	100%	0%	242	577	11	2300	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.103	**No**	495	477	2191%
Landfill	0-10 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	26	100%	100%	0%	15.3	9.8	3.99	42.3	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.976	**No**	8.18	7.88	48%
Landfill	0-10 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	37	100%	100%	0%	79.0	102.1	17.9	494	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.158	**No**	87.7	84.5	217%
Landfill	0-10 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	37	100%	100%	0%	27366	10090	10300	51000	-	-	Lognormal	t-Test (lognormal)	0.977	**No**	8875	8550	29%
Landfill	0-10 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	43	100%	100%	0%	366	391	5.34	1660	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Landfill	0-10 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	26	100%	100%	0%	16251	24551	1190	88300	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.810	**No**	19967	19235	246%
Landfill	0-10 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	37	100%	100%	0%	463	285	146	1712.5	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	255	245	39%
Landfill	0-10 ft	Metals	Mercury	mg/kg	0.11	14	100%	0%	100%	0.0494	0.0091	0.034	0.068	-	-	39	87%	49%	51%	0.327	0.686	0.015	4.15	0.1	0.11	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Landfill	0-10 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	37	100%	100%	0%	166	403	7.85	1760	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.039	**Yes**			
Landfill	0-10 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	26	100%	100%	0%	871	454	214	1870	-	-	Normal	t-Test (normal)	0.999	**No**	434	418	31%
Landfill	0-10 ft	Metals	Selenium	mg/kg	0.3	14	0%	0%	100%	-	-	-	-	0.4	0.5	37	30%	11%	89%	0.190	0.176	0.106	0.879	0.0774	1.5	-	Contingency Table Analysis	0.018	**Yes**			
Landfill	0-10 ft	Metals	Silver	mg/kg	0.51	14	86%	0%	100%	0.0583	0.0412	0.027	0.187	0.022	0.023	37	62%	19%	81%	0.387	0.403	0.101	1.52	0.2	0.57	-	Wilcoxon Rank Sum Test	0.044	**Yes**			
Landfill	0-10 ft	Metals	Sodium	mg/kg	155.5	14	100%	36%	64%	171	75	69.6	324	-	-	26	38%	38%	62%	282	164	165	570	139	172	-	Wilcoxon Rank Sum Test	0.212	**No**	140	135	79%
Landfill	0-10 ft	Metals	Thallium	mg/kg	0.26	14	57%	0%	100%	0.145	0.023	0.128	0.203	0.042	0.103	37	49%	3%	97%	0.109	0.059	0.0361	0.378	0.2	0.3	-	Wilcoxon Rank Sum Test	0.284	**No**	0.0521	0.0502	35%
Landfill	0-10 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	26	100%	100%	0%	48.1	17.7	15.9	93.4	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	16.4	15.8	20%
Landfill	0-10 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	37	100%	100%	0%	204	196	41.6	1140	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Acenaphthene	ug/kg	20	14	64%	0%	100%	1.55	0.57	1.2	3.4	1	1	44	77%	73%	27%	436	719	15	3040	6.8	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Acenaphthylene	ug/kg	20	14	7%	0%	100%	-	-	1.6	1.6	1.4	1.4	44	43%	27%	73%	23.9	26.1	3.4	111	5.9	190	-	Contingency Table Analysis	0.012	**Yes**			
Landfill	0-10 ft	SVOCs	Anthracene	ug/kg	49.8	14	86%	0%	100%	2.33	0.94	1.5	4.9	1.4	1.4	44	89%	73%	27%	1100	1900	12	8440	3.7	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Benzo(a)anthracene	ug/kg	71.35	14	100%	0%	100%	14.0	7.2	4.6	34	-	-	44	95%	91%	9%	5650	8160	29	32000	49.8	92.9	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Benzo(a)pyrene	ug/kg	42.65	14	100%	7%	93%	18.2	9.5	7.7	45	-	-	44	95%	93%	7%	5620	7740	28	34000	35.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	49.8	14	100%	7%	93%	23.4	11.5	9.1	55	-	-	28	96%	93%	7%	5030	12100	34	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	27.8	14	100%	7%	93%	13.7	6.6	5.8	32	-	-	44	93%	91%	9%	2850	4040	20	18000	25.1	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	49.8	14	100%	0%	100%	8.00	3.94	2.7	19	-	-	28	96%	93%	7%	3440	11900	40	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Chrysene	ug/kg	49.8	14	100%	0%	100%	18.3	9.5	6.4	45	-	-	44	98%	98%	2%	5680	8030	62	35300	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	3.08	14	50%	43%	57%	3.53	1.20	2.7	6.9	2.2	2.2	44	82%	82%	18%	653	1500	18	9900	3.08	1800	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Fluoranthene	ug/kg	60.45	14	100%	7%	93%	27.0	14.0	10	66	-	-	44	95%	93%	7%	9600	12600	42	54000	49.8	71.1	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Fluorene	ug/kg	1.7	14	7%	7%	93%	-	-	3.2	3.2	1.7	1.7	44	73%	73%	27%	249	375	10	1610	6.86	180	-	Contingency Table Analysis	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	39.2	14	100%	0%	100%	14.1	7.5	5.2	34	-	-	44	93%	91%	9%	3370	4710	18	20000	35.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Naphthalene	ug/kg	20	14	43%	0%	100%	1.47	0.27	1.3	2.2	1.3	1.3	44	55%	48%	52%	120	296	5	1710	6.34	190	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Landfill	0-10 ft	SVOCs	Phenanthrene	ug/kg	26.365	14	100%	7%	93%	13.2	7.2	5.5	34	-	-	44	95%	91%	9%	2800	4370	13	21900	2.93	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Pyrene	ug/kg	49.8	14	100%	7%	93%	26.8	13.3	10	64	-	-	44	98%	95%	5%	10600	13900	43	67100	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Total LPAHs	ug/kg	299	14	100%	0%	100%	21	9	12	49	-	-	44	98%	80%	20%	4791	7221	55	34767	299	299	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Total HPAHs	ug/kg	498	14	100%	0%	100%	167	84	65	401	-	-	44	98%	95%	5%	49396	70844	334	367900	498	498	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	58	100%	100%	0%	6906	5003	1530	24300	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	4952	4771	21%
Sandblast	0-1 ft	Metals	Antimony	mg/kg	3.11	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	58	71%	7%	93%	1.62	2.23	0.0895	13.7	0.16	3.54	-	Wilcoxon Rank Sum Test	0.162	**No**	2.01	1.94	1516%
Sandblast	0-1 ft	Metals	Arsenic	mg/kg	0.159	14	100%	100%	0%	3.10	1.26	1.09	5.18	-	-	58	98%	98%	2%	7.64	12.90	0.613	80.9	0.159	0.159	-	Wilcoxon Rank Sum Test	0.006	**Yes**			
Sandblast	0-1 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	58	100%	100%	0%	67.2	32.9	10.7	133	-	-	Normal	t-Test (normal)	1.000	**No**	32.8	31.6	29%
Sandblast	0-1 ft	Metals	Beryllium	mg/kg	0.173	14	100%	100%	0%	0.491	0.091	0.319	0.629	-	-	58	47%	41%	59%	0.186	0.127	0.0587	0.63	0.147	0.191	-	Wilcoxon Rank Sum Test	1.000	**No**	0.121	0.117	24%
Sandblast	0-1 ft	Metals	Cadmium	mg/kg	0.0127	14	100%	100%	0%	0.162	0.059	0.099	0.3395	-	-	58	91%	91%	9%	1.66	2.65	0.0561	17.3	0.0122	0.0129	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	58	100%	100%	0%	4259	2711	863	15100	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	2570	2476	35%
Sandblast	0-1 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	61	100%	100%	0%	383	605	5.27	2650	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.003	**Yes**			
Sandblast	0-1 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	58	100%	100%	0%	12.7	4.4	2.52	24.95	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	4.17	4.02	24%
Sandblast	0-1 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	58	100%	100%	0%	64.8	66.2	13.2	319	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.446	**No**	59.9	57.7	148%
Sandblast	0-1 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	58	100%	100%	0%	27103	8838	10100	46500	-	-	Lognormal	t-Test (lognormal)	0.992	**No**	8147	7849	26%
Sandblast	0-1 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	61	100%	100%	0%	362	479	8.58	3260	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Sandblast	0-1 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	58	100%	100%	0%	11462	11051	1350	47500	-	-	Lognormal	t-Test (lognormal)	0.363	**No**	10030	9662	124%
Sandblast	0-1 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	58	100%	100%	0%	416	145	167	789	-	-	Normal	t-Test (normal)	1.000	**No**	144	139	22%
Sandblast	0-1 ft	Metals	Mercury	mg/kg	0.0277	14	100%	100%	0%	0.0494	0.0091	0.034	0.068	-	-	58	74%	66%	34%	0.0812	0.1300	0.0114	0.723	0.00528	0.0306	-	Wilcoxon Rank Sum Test	0.960	**No**	0.117	0.113	229%
Sandblast	0-1 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	58	100%	100%	0%	167	254	4.79	1060	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.003	**Yes**			
Sandblast	0-1 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	58	100%	100%	0%	524	340	74.9	1480	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	350	337	25%

Figure L-1. Statistical Comparison of Upland OU Soils to Reference Area Soils -- MDL Censored

						Reference Area										Site AOPC										Shapiro-Wilk W Test	Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Site AOPC	Depth Group	Analyte Group	Analyte	Unit	Median MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	Distribution	Appropriate Statistical Test	p-value	Significant Higher Conc in Site?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Sandblast	0-1 ft	Metals	Selenium	mg/kg	0.4005	14	0%	0%	100%	-	-	-	-	0.4	0.5	58	52%	41%	59%	0.411	0.206	0.175	0.9	0.0781	0.5	-	Contingency Table Analysis	0.000	**Yes**			
Sandblast	0-1 ft	Metals	Silver	mg/kg	0.044	14	86%	57%	43%	0.0583	0.0412	0.027	0.187	0.022	0.023	58	95%	95%	5%	0.141	0.080	0.0571	0.431	0.044	0.0524	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	Metals	Sodium	mg/kg	153	14	100%	36%	64%	171	75	69.6	324	-	-	58	24%	24%	76%	292	61	264	470	11.7	171	-	Wilcoxon Rank Sum Test	0.640	**No**	63.8	61.4	36%
Sandblast	0-1 ft	Metals	Thallium	mg/kg	0.05135	14	57%	57%	43%	0.145	0.023	0.128	0.203	0.042	0.103	58	79%	72%	28%	0.0859	0.0471	0.0288	0.239	0.0429	0.0558	-	Wilcoxon Rank Sum Test	0.852	**No**	0.0437	0.0421	29%
Sandblast	0-1 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	58	100%	100%	0%	44.4	20.9	6.89	84.7	-	-	Normal	t-Test (normal)	1.000	**No**	19.7	19.0	24%
Sandblast	0-1 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	58	100%	100%	0%	173	194	30.3	1160	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Acenaphthene	ug/kg	1	14	64%	64%	36%	1.55	0.57	1.2	3.4	1	1	31	81%	81%	19%	74.9	121.0	1.5	469.5	0.531	1	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Acenaphthylene	ug/kg	1.4	14	7%	7%	93%	-	-	1.6	1.6	1.4	1.4	31	45%	42%	58%	11.2	19.2	1.39	87.7	0.51	70	-	Contingency Table Analysis	0.012	**Yes**			
Sandblast	0-1 ft	SVOCs	Anthracene	ug/kg	0.897	14	86%	86%	14%	2.33	0.94	1.5	4.9	1.4	1.4	31	94%	94%	6%	148	239	1.72	832	0.356	0.394	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Benzo(a)anthracene	ug/kg	0.8995	14	100%	100%	0%	14.0	7.2	4.6	34	-	-	31	94%	94%	6%	736	1270	3.96	6440	0.749	1.05	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Benzo(a)pyrene	ug/kg	0.656	14	100%	100%	0%	18.2	9.5	7.7	45	-	-	31	97%	97%	3%	746	1280	7.49	6470	0.656	0.656	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	-	14	100%	100%	0%	23.4	11.5	9.1	55	-	-	13	100%	100%	0%	1348	1218	25	4100	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	0.233	14	100%	100%	0%	13.7	6.6	5.8	32	-	-	31	84%	84%	16%	449	774	6.89	3830	0.202	0.498	-	Wilcoxon Rank Sum Test	0.004	**Yes**			
Sandblast	0-1 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	-	14	100%	100%	0%	8.00	3.94	2.7	19	-	-	13	100%	100%	0%	469	419	8.3	1400	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Chrysene	ug/kg	0.741	14	100%	100%	0%	18.3	9.5	6.4	45	-	-	31	97%	97%	3%	875	1500	6.36	7590	0.741	0.741	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	1.4215	14	50%	50%	50%	3.53	1.20	2.7	6.9	2.2	2.2	31	65%	61%	39%	150	280	1.23	1430	0.273	3.41	-	Wilcoxon Rank Sum Test	0.011	**Yes**			
Sandblast	0-1 ft	SVOCs	Fluoranthene	ug/kg	1.05	14	100%	100%	0%	27.0	14.0	10	66	-	-	31	97%	97%	3%	1660	3740	8.47	20700	1.05	1.05	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Fluorene	ug/kg	1.7	14	7%	7%	93%	-	-	3.2	3.2	1.7	1.7	31	74%	71%	29%	63.4	113.0	1.69	462.5	0.573	85	-	Contingency Table Analysis	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	0.347	14	100%	100%	0%	14.1	7.5	5.2	34	-	-	31	90%	90%	10%	479	811	3.68	3910	0.286	0.472	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-1 ft	SVOCs	Naphthalene	ug/kg	1.3	14	43%	43%	57%	1.47	0.27	1.3	2.2	1.3	1.3	31	61%	61%	39%	24.8	45.0	1.7	227	0.548	65	-	Wilcoxon Rank Sum Test	0.005	**Yes**			
Sandblast	0-1 ft	SVOCs	Phenanthrene	ug/kg	-	14	100%	100%	0%	13.2	7.2	5.5	34	-	-	31	100%	100%	0%	707	1081	5.64	4000	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Pyrene	ug/kg	0.352	14	100%	100%	0%	26.8	13.3	10	64	-	-	31	97%	97%	3%	1660	3920	10	21900	0.352	0.352	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Total LPAHs	ug/kg	-	14	100%	100%	0%	21	9	12	49	-	-	31	100%	100%	0%	1039	1603	9	5687	-	-	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Total HPAHs	ug/kg	5	14	100%	100%	0%	167	84	65	401	-	-	31	97%	97%	3%	7516	13891	37	72270	5	5	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-3 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	75	100%	100%	0%	8256	5476	1530	24300	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	5370	5173	23%
Sandblast	0-3 ft	Metals	Antimony	mg/kg	3.135	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	75	73%	5%	95%	1.38	2.02	0.07	13.7	0.16	4.01	-	Wilcoxon Rank Sum Test	0.194	**No**	1.86	1.79	1404%
Sandblast	0-3 ft	Metals	Arsenic	mg/kg	0.159	14	100%	100%	0%	3.10	1.26	1.09	5.18	-	-	75	99%	99%	1%	7.15	11.40	0.613	80.9	0.159	0.159	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-3 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	75	100%	100%	0%	71.7	32.3	10.7	138	-	-	Normal	t-Test (normal)	1.000	**No**	32.3	31.2	28%
Sandblast	0-3 ft	Metals	Beryllium	mg/kg	0.173	14	100%	100%	0%	0.491	0.091	0.319	0.629	-	-	75	59%	55%	45%	0.236	0.153	0.0587	0.63	0.147	0.191	-	Wilcoxon Rank Sum Test	1.000	**No**	0.145	0.140	29%
Sandblast	0-3 ft	Metals	Cadmium	mg/kg	0.0128	14	100%	100%	0%	0.162	0.059	0.099	0.3395	-	-	75	89%	89%	11%	1.42	2.38	0.0561	17.3	0.0122	0.0153	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	75	100%	100%	0%	4820	2694	863	15100	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	2584	2489	35%
Sandblast	0-3 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	78	100%	100%	0%	306	554	5.27	2650	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.007	**Yes**			
Sandblast	0-3 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	75	100%	100%	0%	13.2	4.1	2.52	24.95	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	4.01	3.86	23%
Sandblast	0-3 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	75	100%	100%	0%	62.3	58.5	13.2	319	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.162	**No**	54.1	52.1	134%
Sandblast	0-3 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	75	100%	100%	0%	27114	8238	10100	46500	-	-	Lognormal	t-Test (lognormal)	0.995	**No**	7743	7460	25%
Sandblast	0-3 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	78	100%	100%	0%	309	446	8.58	3260	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	75	100%	100%	0%	10593	9932	9.75	47500	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.572	**No**	9211	8874	113%
Sandblast	0-3 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	75	100%	100%	0%	426	143	167	816	-	-	Normal	t-Test (normal)	1.000	**No**	143	137	22%
Sandblast	0-3 ft	Metals	Mercury	mg/kg	0.0281	14	100%	100%	0%	0.0494	0.0091	0.034	0.068	-	-	75	77%	68%	32%	0.0741	0.1160	0.0114	0.723	0.00528	0.0338	-	Wilcoxon Rank Sum Test	0.963	**No**	0.107	0.103	209%
Sandblast	0-3 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	75	100%	100%	0%	135	230	4.79	1060	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-3 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	75	100%	100%	0%	559	321	74.9	1480	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	333	320	24%
Sandblast	0-3 ft	Metals	Selenium	mg/kg	0.401	14	0%	0%	100%	-	-	-	-	0.4	0.5	75	57%	45%	55%	0.436	0.207	0.175	0.9	0.0781	0.517	-	Contingency Table Analysis	0.000	**Yes**			
Sandblast	0-3 ft	Metals	Silver	mg/kg	0.044	14	86%	57%	43%	0.0583	0.0412	0.027	0.187	0.022	0.023	75	96%	96%	4%	0.137	0.076	0.045	0.431	0.044	0.0524	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	Metals	Sodium	mg/kg	153.5	14	100%	36%	64%	171	75	69.6	324	-	-	75	36%	36%	64%	236	103	173	547	11.7	195	-	Wilcoxon Rank Sum Test	0.325	**No**	99.3	95.7	56%
Sandblast	0-3 ft	Metals	Thallium	mg/kg	0.05135	14	57%	57%	43%	0.145	0.023	0.128	0.203	0.042	0.103	75	84%	79%	21%	0.0959	0.0487	0.0288	0.255	0.0429	0.0558	-	Wilcoxon Rank Sum Test	0.756	**No**	0.0458	0.0441	30%
Sandblast	0-3 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	75	100%	100%	0%	48.1	20.8	6.89	89.1	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	19.9	19.1	24%
Sandblast	0-3 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	75	100%	100%	0%	148	176	30.3	1160	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-3 ft	SVOCs	Acenaphthene	ug/kg	0.869	14	64%	64%	36%	1.55	0.57	1.2	3.4	1	1	40	78%	78%	23%	147	503	1.1	3200	0.531	1	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-3 ft	SVOCs	Acenaphthylene	ug/kg	1.4	14	7%	7%	93%	-	-	1.6	1.6	1.4	1.4	40	40%	38%	63%	16.4	47.8	1.39	295	0.51	70	-	Contingency Table Analysis	0.021	**Yes**			
Sandblast	0-3 ft	SVOCs	Anthracene	ug/kg	0.48	14	86%	86%	14%	2.33	0.94	1.5	4.9	1.4	1.4	40	88%	88%	13%	178	372	1.72	2040	0.356	1.4	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Benzo(a)anthracene	ug/kg	1.26	14	100%	100%	0%	14.0	7.2	4.6	34	-	-	40	88%	88%	13%	935	2160	3.96	12300	0.749	1.4	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-3 ft	SVOCs	Benzo(a)pyrene	ug/kg	0.7955	14	100%	100%	0%	18.2	9.5	7.7	45	-	-	40	90%	90%	10%	926	2090	7.49	11700	0.656	1.6	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-3 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	2.5	14	100%	100%	0%	23.4	11.5	9.1	55	-	-	18	94%	94%	6%	991	1150	25	4100	2.5	2.5	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	0.246	14	100%	100%	0%	13.7	6.6	5.8	32	-	-	40	83%	83%	18%	459	843	4.33	3830	0.202	2.3	-	Wilcoxon Rank Sum Test	0.006	**Yes**			
Sandblast	0-3 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	2.5	14	100%	100%	0%	8.00	3.94	2.7	19	-	-	18	94%	94%	6%	345	396	8.3	1400	2.5	2.5	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Chrysene	ug/kg	0.895	14	100%	100%	0%	18.3	9.5	6.4	45	-	-	40	93%	93%	8%	1030	2230	1.8	12000	0.741	0.903	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-3 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	0.784	14	50%	50%	50%	3.53	1.20	2.7	6.9	2.2	2.2	40	65%	65%	35%	153	295	1.23	1430	0.273	3.41	-	Wilcoxon Rank Sum Test	0.006	**Yes**			
Sandblast	0-3 ft	SVOCs	Fluoranthene	ug/kg	1.28	14	100%	100%	0%	27.0	14.0	10	66	-	-	40	93%	93%	8%	2120	5420	6.29	28600	1.05	2.2	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-3 ft	SVOCs	Fluorene	ug/kg	1.7	14	7%	7%	93%	-	-	3.2	3.2	1.7	1.7	40	70%	68%	33%	73.3	153.0	1.69	779	0.573	85	-	Contingency Table Analysis	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	0.472	14	100%	100%	0%	14.1	7.5	5.2	34	-	-	40	88%	88%	13%	503	944	3.52	4170	0.286	1.9	-	Wilcoxon Rank Sum Test	0.005	**Yes**			
Sandblast	0-3 ft	SVOCs	Naphthalene	ug/kg	1.3	14	43%	43%	57%	1.47	0.27	1.3	2.2	1.3	1.3	40	60%	60%	40%	26.1	54.8	1.7	256	0.548	65	-	Wilcoxon Rank Sum Test	0.005	**Yes**			
Sandblast	0-3 ft	SVOCs	Phenanthrene	ug/kg	1.025	14	100%	100%	0%	13.2	7.2	5.5	34	-	-	40	95%	95%	5%	757	1350	2.47	6550	0.75	1.3	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Pyrene	ug/kg	0.3905	14	100%	100%	0%	26.8	13.3	10	64	-	-	40	95%	95%	5%	2230	5950	2.1	32000	0.352	0.429	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Total LPAHs	ug/kg	6	14	100%	100%	0%	21	9	12	49	-	-	40	95%	95%	5%	1205	2403	6	13120	5	8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Total HPAHs	ug/kg	6	14	100%	100%	0%	167	84	65	401	-	-	40	95%	95%	5%	8959	19945	16	105200	5	7	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	78	100%	100%	0%	8518	5534	1530	24300	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	5425	5226	23%
Sandblast	0-10 ft	Metals	Antimony	mg/kg	3.135	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	78	74%	5%	95%	1.35	1.99	0.07	13.7	0.16	4.01	-	Wilcoxon Rank Sum Test	0.199	**No**	1.84	1.77	1387%
Sandblast	0-10 ft	Metals	Arsenic	mg/kg	0.159	14	100%	100%	0%	3.10	1.26	1.09	5.18	-	-	78	99%	99%	1%	7.08	11.20	0.613	80.9	0.159	0.159	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	78	100%	100%	0%	73.0	32.3	10.7	138	-	-	Normal	t-Test (normal)	1.000	**No**	32.3	31.2	28%
Sandblast	0-10 ft	Metals	Beryllium	mg/kg	0.173	14	100%	100%	0%	0.491	0.091	0.319	0.629	-	-	78	60%	56%	44%	0.241	0.152	0.0587	0.63	0.147	0.191	-	Wilcoxon Rank Sum Test	1.000	**No**	0.145	0.140	28%

Figure L-1. Statistical Comparison of Upland OU Soils to Reference Area Soils -- MDL Censored

						Reference Area										Site AOPC										Shapiro-Wilk W Test	Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Site AOPC	Depth Group	Analyte Group	Analyte	Unit	Median MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	Distribution	Appropriate Statistical Test	p-value	Significant Higher Conc in Site?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Sandblast	0-10 ft	Metals	Cadmium	mg/kg	0.013	14	100%	100%	0%	0.162	0.059	0.099	0.3395	-	-	78	86%	86%	14%	1.37	2.35	0.0561	17.3	0.0122	0.0153	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-10 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	78	100%	100%	0%	4833	2656	863	15100	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	2553	2460	35%
Sandblast	0-10 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	81	100%	100%	0%	296	546	5.27	2650	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.007	**Yes**			
Sandblast	0-10 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	78	100%	100%	0%	13.3	4.1	2.52	24.95	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	3.95	3.81	23%
Sandblast	0-10 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	78	100%	100%	0%	61.8	57.6	13.2	319	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.171	**No**	53.4	51.4	132%
Sandblast	0-10 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	78	100%	100%	0%	27049	8095	10100	46500	-	-	Lognormal	t-Test (lognormal)	0.995	**No**	7631	7351	25%
Sandblast	0-10 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	81	100%	100%	0%	298	442	5.235	3260	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-10 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	78	100%	100%	0%	10445	9768	9.75	47500	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.595	**No**	9085	8752	112%
Sandblast	0-10 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	78	100%	100%	0%	433	148	167	818	-	-	Normal	t-Test (normal)	1.000	**No**	147	142	23%
Sandblast	0-10 ft	Metals	Mercury	mg/kg	0.0281	14	100%	100%	0%	0.0494	0.0091	0.034	0.068	-	-	78	78%	67%	33%	0.0727	0.1140	0.0114	0.723	0.00528	0.0338	-	Wilcoxon Rank Sum Test	0.967	**No**	0.106	0.102	206%
Sandblast	0-10 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	78	100%	100%	0%	131	227	4.79	1060	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	78	100%	100%	0%	562	315	74.9	1480	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	328	316	24%
Sandblast	0-10 ft	Metals	Selenium	mg/kg	0.401	14	0%	0%	100%	-	-	-	-	0.4	0.5	78	59%	44%	56%	0.435	0.201	0.175	0.9	0.0781	0.517	-	Contingency Table Analysis	0.000	**Yes**			
Sandblast	0-10 ft	Metals	Silver	mg/kg	0.044	14	86%	57%	43%	0.0583	0.0412	0.027	0.187	0.022	0.023	78	96%	96%	4%	0.137	0.074	0.045	0.431	0.044	0.0524	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-10 ft	Metals	Sodium	mg/kg	153	14	100%	36%	64%	171	75	69.6	324	-	-	78	36%	35%	65%	195	126	114	547	11.7	195	-	Wilcoxon Rank Sum Test	0.365	**No**	120	116	67%
Sandblast	0-10 ft	Metals	Thallium	mg/kg	0.05135	14	57%	57%	43%	0.145	0.023	0.128	0.203	0.042	0.103	78	85%	79%	21%	0.0980	0.0498	0.0288	0.255	0.0429	0.0558	-	Wilcoxon Rank Sum Test	0.726	**No**	0.0469	0.0452	31%
Sandblast	0-10 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	78	100%	100%	0%	48.9	20.8	6.89	89.1	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	19.9	19.2	24%
Sandblast	0-10 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	78	100%	100%	0%	145	173	30.3	1160	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.003	**Yes**			
Sandblast	0-10 ft	SVOCs	Acenaphthene	ug/kg	0.719	14	64%	64%	36%	1.55	0.57	1.2	3.4	1	1	43	74%	74%	26%	137	486	1.1	3200	0.531	1	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	SVOCs	Acenaphthylene	ug/kg	1.4	14	7%	7%	93%	-	-	1.6	1.6	1.4	1.4	43	37%	35%	65%	15.4	46.3	1.39	295	0.51	70	-	Contingency Table Analysis	0.030	**Yes**			
Sandblast	0-10 ft	SVOCs	Anthracene	ug/kg	0.476	14	86%	86%	14%	2.33	0.94	1.5	4.9	1.4	1.4	43	84%	84%	16%	166	362	1.72	2040	0.356	1.4	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-10 ft	SVOCs	Benzo(a)anthracene	ug/kg	1.23	14	100%	100%	0%	14.0	7.2	4.6	34	-	-	43	84%	84%	16%	870	2100	3.96	12300	0.749	1.4	-	Wilcoxon Rank Sum Test	0.003	**Yes**			
Sandblast	0-10 ft	SVOCs	Benzo(a)pyrene	ug/kg	0.78	14	100%	100%	0%	18.2	9.5	7.7	45	-	-	43	86%	86%	14%	862	2030	7.49	11700	0.656	1.6	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	2.5	14	100%	100%	0%	23.4	11.5	9.1	55	-	-	18	94%	94%	6%	991	1150	25	4100	2.5	2.5	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-10 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	0.498	14	100%	100%	0%	13.7	6.6	5.8	32	-	-	43	79%	79%	21%	428	821	4.33	3830	0.202	2.3	-	Wilcoxon Rank Sum Test	0.015	**Yes**			
Sandblast	0-10 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	2.5	14	100%	100%	0%	8.00	3.94	2.7	19	-	-	18	94%	94%	6%	345	396	8.3	1400	2.5	2.5	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-10 ft	SVOCs	Chrysene	ug/kg	0.867	14	100%	100%	0%	18.3	9.5	6.4	45	-	-	43	88%	88%	12%	962	2170	1.8	12000	0.741	0.903	-	Wilcoxon Rank Sum Test	0.003	**Yes**			
Sandblast	0-10 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	0.765	14	50%	50%	50%	3.53	1.20	2.7	6.9	2.2	2.2	43	60%	60%	40%	143	287	1.23	1430	0.273	3.41	-	Wilcoxon Rank Sum Test	0.015	**Yes**			
Sandblast	0-10 ft	SVOCs	Fluoranthene	ug/kg	1.23	14	100%	100%	0%	27.0	14.0	10	66	-	-	43	88%	88%	12%	1970	5260	6.29	28600	1.05	2.2	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	SVOCs	Fluorene	ug/kg	1.7	14	7%	7%	93%	-	-	3.2	3.2	1.7	1.7	43	65%	63%	37%	68.3	149.0	1.69	779	0.573	85	-	Contingency Table Analysis	0.000	**Yes**			
Sandblast	0-10 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	0.547	14	100%	100%	0%	14.1	7.5	5.2	34	-	-	43	84%	84%	16%	469	920	3.52	4170	0.286	1.9	-	Wilcoxon Rank Sum Test	0.015	**Yes**			
Sandblast	0-10 ft	SVOCs	Naphthalene	ug/kg	1.3	14	43%	43%	57%	1.47	0.27	1.3	2.2	1.3	1.3	43	56%	56%	44%	24.4	53.2	1.7	256	0.548	65	-	Wilcoxon Rank Sum Test	0.012	**Yes**			
Sandblast	0-10 ft	SVOCs	Phenanthrene	ug/kg	0.735	14	100%	100%	0%	13.2	7.2	5.5	34	-	-	43	91%	91%	9%	705	1320	2.47	6550	0.713	1.3	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-10 ft	SVOCs	Pyrene	ug/kg	0.41	14	100%	100%	0%	26.8	13.3	10	64	-	-	43	91%	91%	9%	2080	5770	2.1	32000	0.352	0.429	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	SVOCs	Total LPAHs	ug/kg	4	14	100%	100%	0%	21	9	12	49	-	-	43	91%	91%	9%	1122	2337	6	13120	4	8	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-10 ft	SVOCs	Total HPAHs	ug/kg	6	14	100%	100%	0%	167	84	65	401	-	-	43	91%	91%	9%	8340	19369	16	105200	5	7	-	Wilcoxon Rank Sum Test	0.006	**Yes**			
Pistol Range	0-1 ft	Metals	Antimony	mg/kg	5	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	5	0%	0%	100%	-	-	-	-	5	6	-	Contingency Table Analysis	1.000	**No**			
Pistol Range	0-1 ft	Metals	Arsenic	mg/kg	5	14	100%	7%	93%	3.10	1.26	1.09	5.18	-	-	5	0%	0%	100%	-	-	-	-	5	6	-	Contingency Table Analysis	1.000	**No**			
Pistol Range	0-1 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	14	100%	100%	0%	38.1	14.3	15.6	53.1	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.307	**No**	12.2	11.8	30%
Pistol Range	0-1 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	63	100%	100%	0%	208	286	7.5	1110	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
Pistol Range	0-1 ft	Metals	Mercury	mg/kg	0.06	14	100%	14%	86%	0.0494	0.0091	0.034	0.068	-	-	14	0%	0%	100%	-	-	-	-	0.04	0.06	-	Contingency Table Analysis	1.000	**No**			
Pistol Range	0-1 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	10	100%	100%	0%	23.7	3.8	19	32	-	-	Normal	t-Test (normal)	0.004	**Yes**			
Pistol Range	0-1 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	10	100%	100%	0%	124	42	74	199	-	-	Normal	t-Test (normal)	0.000	**Yes**			
Bulb Slope	0-1 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	12	100%	100%	0%	222	165	25	597	-	-	Normal	t-Test (normal)	0.001	**Yes**			
Bulb Slope	0-1 ft	Metals	Mercury	mg/kg	-	14	100%	100%	0%	0.0494	0.0091	0.034	0.068	-	-	12	100%	100%	0%	0.404	0.425	0.05	1.54	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
4 AOPCs	0-1 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	68	100%	100%	0%	7953	5445	1530	24300	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	5335	5139	23%
4 AOPCs	0-1 ft	Metals	Antimony	mg/kg	2.83	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	83	54%	7%	93%	1.39	2.02	0.0895	13.7	0.16	6	-	Wilcoxon Rank Sum Test	0.154	**No**	1.88	1.81	1414%
4 AOPCs	0-1 ft	Metals	Arsenic	mg/kg	5	14	100%	7%	93%	3.10	1.26	1.09	5.18	-	-	84	93%	38%	62%	6.79	11.20	0.613	80.9	0.159	6	-	Wilcoxon Rank Sum Test	0.009	**Yes**			
4 AOPCs	0-1 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	79	100%	100%	0%	80.3	41.2	10.7	242.5	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.996	**No**	40.1	38.6	35%
4 AOPCs	0-1 ft	Metals	Beryllium	mg/kg	0.176	14	100%	100%	0%	0.491	0.091	0.319	0.629	-	-	79	56%	52%	48%	0.228	0.147	0.0587	0.63	0.147	0.28	-	Wilcoxon Rank Sum Test	1.000	**No**	0.140	0.135	28%
4 AOPCs	0-1 ft	Metals	Cadmium	mg/kg	0.26	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	79	86%	82%	18%	1.41	2.33	0.0561	17.3	0.0122	0.29	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	68	100%	100%	0%	4457	2571	863	15100	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	2466	2376	34%
4 AOPCs	0-1 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	82	100%	100%	0%	305	544	5.27	2650	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.012	**Yes**			
4 AOPCs	0-1 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	68	100%	100%	0%	12.4	4.5	2.52	24.95	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	4.26	4.10	25%
4 AOPCs	0-1 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	93	100%	100%	0%	62.8	71.4	13.2	494	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.277	**No**	66.9	64.4	165%
4 AOPCs	0-1 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	79	100%	100%	0%	26683	8581	10100	46500	-	-	Lognormal	t-Test (lognormal)	0.998	**No**	8078	7782	26%
4 AOPCs	0-1 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	157	100%	100%	0%	270	368	5.34	3260	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	68	100%	100%	0%	11090	10788	1350	47500	-	-	Lognormal	t-Test (lognormal)	0.397	**No**	9924	9560	122%
4 AOPCs	0-1 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	79	100%	100%	0%	407	144	167	789	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	144	139	22%
4 AOPCs	0-1 ft	Metals	Mercury	mg/kg	0.05	14	100%	36%	64%	0.0494	0.0091	0.034	0.068	-	-	107	68%	45%	55%	0.183	0.459	0.0114	4.15	0.00528	0.11	-	Wilcoxon Rank Sum Test	0.066	**No**	0.433	0.417	846%
4 AOPCs	0-1 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	89	100%	100%	0%	125	220	4.79	1060	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.005	**Yes**			
4 AOPCs	0-1 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	68	100%	100%	0%	642	437	74.9	1870	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	430	415	31%
4 AOPCs	0-1 ft	Metals	Selenium	mg/kg	0.4	14	0%	0%	100%	-	-	-	-	0.4	0.5	79	42%	32%	68%	0.355	0.216	0.175	0.9	0.0781	1.5	-	Contingency Table Analysis	0.001	**Yes**			
4 AOPCs	0-1 ft	Metals	Silver	mg/kg	0.3	14	86%	0%	100%	0.0583	0.0412	0.027	0.187	0.022	0.023	79	78%	11%	89%	0.177	0.185	0.0571	1.5	0.044	0.57	-	Wilcoxon Rank Sum Test	0.127	**No**	0.172	0.166	284%
4 AOPCs	0-1 ft	Metals	Sodium	mg/kg	153	14	100%	36%	64%	171	75	69.6	324	-	-	68	34%	34%	66%	320	93	264	570	11.7	171	-	Wilcoxon Rank Sum Test	0.280	**No**	90.6	87.3	51%
4 AOPCs	0-1 ft	Metals	Thallium	mg/kg	0.2	14	57%	7%	93%	0.145	0.023	0.128	0.203	0.042	0.103	79	61%	5%	95%	0.0891	0.0561	0.0288	0.378	0.0429	0.3	-	Wilcoxon Rank Sum Test	0.598	**No**	0.0527	0.0507	35%
4 AOPCs	0-1 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	68	100%	100%	0%	44.1	19.5	6.89	84.7	-	-	Normal	t-Test (normal)	1.000	**No**	18.7	18.0	23%
4 AOPCs	0-1 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	89	100%	100%	0%	165	167	30.3	1160	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Acenaphthene	ug/kg	1	14	64%	64%	36%	1.55	0.57	1.2	3.4	1	1	58	76%	76%	24%	160	380	1.5	2600	0.531	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Acenaphthylene	ug/kg	3.89	14	7%	0%	100%	-	-	1.6	1.6	1.4	1.4	58	36%	28%	72%	12.8	20.5	1.39	87.7	0.51	190	-	Contingency Table Analysis	0.029	**Yes**			

Figure L-1. Statistical Comparison of Upland OU Soils to Reference Area Soils -- MDL Censored

						Reference Area										Site AOPC								Shapiro-Wilk W Test	Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Site AOPC	Depth Group	Analyte Group	Analyte	Unit	Median MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	Distribution	Appropriate Statistical Test	p-value	Significant Higher Conc in Site?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
4 AOPCs	0-1 ft	SVOCs	Anthracene	ug/kg	25.6	14	86%	0%	100%	2.33	0.94	1.5	4.9	1.4	1.4	58	90%	60%	40%	263	471	1.72	2700	0.356	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Benzo(a)anthracene	ug/kg	25.425	14	100%	7%	93%	14.0	7.2	4.6	34	-	-	58	93%	83%	17%	1770	4520	3.96	32000	0.749	92.9	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Benzo(a)pyrene	ug/kg	35.5	14	100%	7%	93%	18.2	9.5	7.7	45	-	-	58	95%	81%	19%	1880	4660	7.49	33000	0.656	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	49.8	14	100%	7%	93%	23.4	11.5	9.1	55	-	-	37	97%	92%	8%	3280	10500	25	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	0.372	14	100%	100%	0%	13.7	6.6	5.8	32	-	-	58	86%	86%	14%	976	2520	6.89	18000	0.202	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	49.8	14	100%	0%	100%	8.00	3.94	2.7	19	-	-	37	97%	89%	11%	2410	10500	8.3	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Chrysene	ug/kg	25.2705	14	100%	14%	86%	18.3	9.5	6.4	45	-	-	58	97%	84%	16%	1920	4500	6.36	32000	0.741	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	2.2	14	50%	50%	50%	3.53	1.20	2.7	6.9	2.2	2.2	58	72%	71%	29%	363	1300	1.23	9900	0.273	1800	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Fluoranthene	ug/kg	49.8	14	100%	7%	93%	27.0	14.0	10	66	-	-	58	95%	79%	21%	3360	8060	8.47	54000	1.05	71.1	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Fluorene	ug/kg	1.7	14	7%	7%	93%	-	-	3.2	3.2	1.7	1.7	58	67%	66%	34%	92.7	186.0	1.69	1200	0.573	180	-	Contingency Table Analysis	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	17.986	14	100%	14%	86%	14.1	7.5	5.2	34	-	-	58	90%	79%	21%	1090	2730	3.68	19000	0.286	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Naphthalene	ug/kg	13.425	14	43%	0%	100%	1.47	0.27	1.3	2.2	1.3	1.3	58	52%	33%	67%	56.9	153.0	1.7	823	0.548	190	-	Wilcoxon Rank Sum Test	0.008	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Phenanthrene	ug/kg	49.8	14	100%	0%	100%	13.2	7.2	5.5	34	-	-	58	98%	71%	29%	1090	1910	5.64	12000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Pyrene	ug/kg	25.076	14	100%	50%	50%	26.8	13.3	10	64	-	-	58	97%	91%	9%	3190	6750	10	40000	0.352	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Total LPAHs	ug/kg	299	14	100%	0%	100%	21	9	12	49	-	-	58	98%	57%	43%	1740	2944	9	18674	299	299	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Total HPAHs	ug/kg	252	14	100%	7%	93%	167	84	65	401	-	-	58	97%	83%	17%	18198	50007	37	367900	5	498	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	87	100%	100%	0%	8912	5551	1530	24300	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	5449	5249	23%
4 AOPCs	0-3 ft	Metals	Antimony	mg/kg	2.9	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	102	60%	6%	94%	1.26	1.86	0.07	13.7	0.16	6	-	Wilcoxon Rank Sum Test	0.180	**No**	1.75	1.69	1319%
4 AOPCs	0-3 ft	Metals	Arsenic	mg/kg	5	14	100%	7%	93%	3.10	1.26	1.09	5.18	-	-	103	94%	42%	58%	6.55	10.10	0.613	80.9	0.159	6	-	Wilcoxon Rank Sum Test	0.005	**Yes**			
4 AOPCs	0-3 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	98	100%	100%	0%	81.6	39.0	10.7	242.5	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.996	**No**	38.3	36.9	34%
4 AOPCs	0-3 ft	Metals	Beryllium	mg/kg	0.175	14	100%	100%	0%	0.491	0.091	0.319	0.629	-	-	98	62%	59%	41%	0.256	0.156	0.0587	0.63	0.147	0.28	-	Wilcoxon Rank Sum Test	1.000	**No**	0.150	0.144	29%
4 AOPCs	0-3 ft	Metals	Cadmium	mg/kg	0.01505	14	100%	100%	0%	0.162	0.059	0.099	0.3395	-	-	98	86%	86%	14%	1.28	2.14	0.0561	17.3	0.0122	0.29	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	87	100%	100%	0%	4991	2604	863	15100	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	2516	2424	34%
4 AOPCs	0-3 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	101	100%	100%	0%	279	531	5.27	2650	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.014	**Yes**			
4 AOPCs	0-3 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	87	100%	100%	0%	13.4	5.3	2.52	41	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	5.03	4.85	29%
4 AOPCs	0-3 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	112	100%	100%	0%	64.0	71.8	13.2	494	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.124	**No**	68.0	65.5	168%
4 AOPCs	0-3 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	98	100%	100%	0%	27150	8537	10100	51000	-	-	Lognormal	t-Test (lognormal)	0.996	**No**	8126	7828	26%
4 AOPCs	0-3 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	182	100%	100%	0%	274	379	5.34	3260	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	87	100%	100%	0%	11365	12218	9.75	77700	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.586	**No**	11424	11005	141%
4 AOPCs	0-3 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	98	100%	100%	0%	434	199	167	1712.5	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	193	186	30%
4 AOPCs	0-3 ft	Metals	Mercury	mg/kg	0.045	14	100%	64%	36%	0.0494	0.0091	0.034	0.068	-	-	126	71%	48%	52%	0.163	0.426	0.0114	4.15	0.00528	0.11	-	Wilcoxon Rank Sum Test	0.332	**No**	0.405	0.391	791%
4 AOPCs	0-3 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	108	100%	100%	0%	128	253	4.79	1610	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.003	**Yes**			
4 AOPCs	0-3 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	87	100%	100%	0%	646	399	74.9	1870	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	398	383	29%
4 AOPCs	0-3 ft	Metals	Selenium	mg/kg	0.4	14	0%	0%	100%	-	-	-	-	0.4	0.5	98	49%	37%	63%	0.387	0.225	0.175	0.9	0.0781	1.5	-	Contingency Table Analysis	0.000	**Yes**			
4 AOPCs	0-3 ft	Metals	Silver	mg/kg	0.3	14	86%	0%	100%	0.0583	0.0412	0.027	0.187	0.022	0.023	98	83%	10%	90%	0.172	0.179	0.045	1.5	0.044	0.57	-	Wilcoxon Rank Sum Test	0.137	**No**	0.169	0.163	279%
4 AOPCs	0-3 ft	Metals	Sodium	mg/kg	153	14	100%	36%	64%	171	75	69.6	324	-	-	87	41%	41%	59%	262	128	173	570	11.7	195	-	Wilcoxon Rank Sum Test	0.160	**No**	122	118	69%
4 AOPCs	0-3 ft	Metals	Thallium	mg/kg	0.2	14	57%	7%	93%	0.145	0.023	0.128	0.203	0.042	0.103	98	68%	5%	95%	0.0977	0.0551	0.0288	0.378	0.0429	0.3	-	Wilcoxon Rank Sum Test	0.598	**No**	0.0524	0.0504	35%
4 AOPCs	0-3 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	87	100%	100%	0%	47.4	19.6	6.89	89.1	-	-	Normal	t-Test (normal)	1.000	**No**	18.9	18.2	23%
4 AOPCs	0-3 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	108	100%	100%	0%	158	183	30.3	1160	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Acenaphthene	ug/kg	1	14	64%	64%	36%	1.55	0.57	1.2	3.4	1	1	73	77%	77%	23%	257	598	1.1	3200	0.531	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Acenaphthylene	ug/kg	1.4	14	7%	7%	93%	-	-	1.6	1.6	1.4	1.4	73	40%	38%	62%	18.0	39.8	1.39	295	0.51	190	-	Contingency Table Analysis	0.015	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Anthracene	ug/kg	1.4	14	86%	86%	14%	2.33	0.94	1.5	4.9	1.4	1.4	73	88%	88%	12%	440	1090	1.72	8440	0.356	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Benzo(a)anthracene	ug/kg	1.28	14	100%	100%	0%	14.0	7.2	4.6	34	-	-	73	90%	90%	10%	2470	5430	3.96	32000	0.749	92.9	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Benzo(a)pyrene	ug/kg	1.1995	14	100%	100%	0%	18.2	9.5	7.7	45	-	-	73	92%	92%	8%	2720	6020	7.49	34000	0.656	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	26.15	14	100%	43%	57%	23.4	11.5	9.1	55	-	-	46	96%	93%	7%	3450	9690	25	65000	2.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	0.5525	14	100%	100%	0%	13.7	6.6	5.8	32	-	-	73	86%	86%	14%	1380	3140	4.33	18000	0.202	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	26.15	14	100%	0%	100%	8.00	3.94	2.7	19	-	-	46	96%	87%	13%	2230	9420	8.3	65000	2.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Chrysene	ug/kg	0.899	14	100%	100%	0%	18.3	9.5	6.4	45	-	-	73	95%	95%	5%	2730	5960	1.8	35300	0.741	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	2.2	14	50%	50%	50%	3.53	1.20	2.7	6.9	2.2	2.2	73	74%	73%	27%	416	1210	1.23	9900	0.273	1800	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Fluoranthene	ug/kg	2.2	14	100%	100%	0%	27.0	14.0	10	66	-	-	73	93%	93%	7%	4660	9770	6.29	54000	1.05	71.1	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Fluorene	ug/kg	1.7	14	7%	7%	93%	-	-	3.2	3.2	1.7	1.7	73	68%	67%	33%	130	266	1.69	1610	0.573	180	-	Contingency Table Analysis	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	1.238	14	100%	100%	0%	14.1	7.5	5.2	34	-	-	73	89%	89%	11%	1600	3640	3.52	20000	0.286	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Naphthalene	ug/kg	1.3	14	43%	43%	57%	1.47	0.27	1.3	2.2	1.3	1.3	73	56%	56%	44%	56.1	141.0	1.7	823	0.548	190	-	Wilcoxon Rank Sum Test	0.007	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Phenanthrene	ug/kg	1.3	14	100%	100%	0%	13.2	7.2	5.5	34	-	-	73	96%	96%	4%	1550	3150	2.47	21900	0.75	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Pyrene	ug/kg	0.429	14	100%	100%	0%	26.8	13.3	10	64	-	-	73	96%	96%	4%	4940	10600	2.1	67100	0.352	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Total LPAHs	ug/kg	8	14	100%	100%	0%	21	9	12	49	-	-	73	96%	95%	5%	2496	5046	6	34767	5	299	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Total HPAHs	ug/kg	7	14	100%	100%	0%	167	84	65	401	-	-	73	96%	96%	4%	24503	55546	16	367900	5	498	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	104	100%	100%	0%	9071	5513	1530	24300	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	5430	5231	23%
4 AOPCs	0-10 ft	Metals	Antimony	mg/kg	2.9	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	119	66%	8%	92%	1.36	1.93	0.07	13.7	0.16	6	-	Wilcoxon Rank Sum Test	0.146	**No**	1.83	1.76	1380%
4 AOPCs	0-10 ft	Metals	Arsenic	mg/kg	5	14	100%	7%	93%	3.10	1.26	1.09	5.18	-	-	120	95%	39%	61%	6.20	9.46	0.613	80.9	0.159	6	-	Wilcoxon Rank Sum Test	0.007	**Yes**			
4 AOPCs	0-10 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	115	100%	100%	0%	83.1	38.0	10.7	242.5	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.994	**No**	37.5	36.1	33%
4 AOPCs	0-10 ft	Metals	Beryllium	mg/kg	0.172	14	100%	100%	0%	0.491	0.091	0.319	0.629	-	-	115	63%	61%	39%	0.251	0.149	0.0587	0.63	0.147	0.28	-	Wilcoxon Rank Sum Test	1.000	**No**	0.144	0.139	28%
4 AOPCs	0-10 ft	Metals	Cadmium	mg/kg	0.0143	14	100%	100%	0%	0.162	0.059	0.099	0.3395	-	-	115	85%	85%	15%	1.28	2.00	0.0561	17.3	0.0122	0.29	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	104	100%	100%	0%	4959	2435	863	15100	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	2375	2288	32%
4 AOPCs	0-10 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	118	100%	100%	0%	279	554	5.27	2650	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.015	**Yes**			
4 AOPCs	0-10 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	104	100%	100%	0%	13.8	6.1	2.52	42.3	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.998	**No**	5.80	5.59	34%
4 AOPCs	0-10 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	129	100%	100%	0%	64.1	71.4	13.2	494	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.159	**No**	68.0	65.6	168%
4 AOPCs	0-10 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	115	100%	100%	0%	27151	8743	10100	51000	-	-	Lognormal	t-Test (lognormal)	0.997	**No**	8375	8068	27%
4 AOPCs	0-10 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	199	100%	100%	0%	280	377	5.235	3260	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	104	100%	100%	0%	11897	14967	9.75	88300	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.672	**No**	14128	13610	174%

Figure L-1. Statistical Comparison of Upland OU Soils to Reference Area Soils -- MDL Censored

						Reference Area										Site AOPC										Shapiro-Wilk W Test	Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Site AOPC	Depth Group	Analyte Group	Analyte	Unit	Median MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	Distribution	Appropriate Statistical Test	p-value	Significant Higher Conc in Site?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
4 AOPCs	0-10 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	115	100%	100%	0%	443	202	146	1712.5	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	196	189	30%
4 AOPCs	0-10 ft	Metals	Mercury	mg/kg	0.045	14	100%	64%	36%	0.0494	0.0091	0.034	0.068	-	-	143	75%	49%	51%	0.165	0.410	0.0114	4.15	0.00528	0.11	-	Wilcoxon Rank Sum Test	0.279	**No**	0.392	0.378	766%
4 AOPCs	0-10 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	125	100%	100%	0%	133	284	4.79	1760	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.003	**Yes**			
4 AOPCs	0-10 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	104	100%	100%	0%	639	378	74.9	1870	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	379	365	27%
4 AOPCs	0-10 ft	Metals	Selenium	mg/kg	0.4	14	0%	0%	100%	-	-	-	-	0.4	0.5	115	50%	31%	69%	0.338	0.237	0.106	0.9	0.0774	1.5	-	Contingency Table Analysis	0.000	**Yes**			
4 AOPCs	0-10 ft	Metals	Silver	mg/kg	0.3	14	86%	0%	100%	0.0583	0.0412	0.027	0.187	0.022	0.023	115	85%	14%	86%	0.211	0.264	0.045	1.52	0.044	0.57	-	Wilcoxon Rank Sum Test	0.086	**No**	0.250	0.241	414%
4 AOPCs	0-10 ft	Metals	Sodium	mg/kg	153.5	14	100%	36%	64%	171	75	69.6	324	-	-	104	37%	36%	64%	209	145	114	570	11.7	195	-	Wilcoxon Rank Sum Test	0.307	**No**	139	134	78%
4 AOPCs	0-10 ft	Metals	Thallium	mg/kg	0.2	14	57%	7%	93%	0.145	0.023	0.128	0.203	0.042	0.103	115	73%	6%	94%	0.101	0.054	0.0288	0.378	0.0429	0.3	-	Wilcoxon Rank Sum Test	0.532	**No**	0.0516	0.0497	34%
4 AOPCs	0-10 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	104	100%	100%	0%	48.7	20.0	6.89	93.4	-	-	Normal	t-Test (normal)	1.000	**No**	19.3	18.6	24%
4 AOPCs	0-10 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	125	100%	100%	0%	161	175	30.3	1160	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Acenaphthene	ug/kg	1	14	64%	64%	36%	1.55	0.57	1.2	3.4	1	1	87	76%	76%	24%	286	634	1.1	3200	0.531	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Acenaphthylene	ug/kg	1.4	14	7%	7%	93%	-	-	1.6	1.6	1.4	1.4	87	40%	39%	61%	18.2	37.7	1.39	295	0.51	190	-	Contingency Table Analysis	0.013	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Anthracene	ug/kg	1.4	14	86%	86%	14%	2.33	0.94	1.5	4.9	1.4	1.4	87	86%	86%	14%	640	1450	1.72	8440	0.356	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Benzo(a)anthracene	ug/kg	1.26	14	100%	100%	0%	14.0	7.2	4.6	34	-	-	87	90%	90%	10%	3290	6450	3.96	32000	0.749	92.9	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Benzo(a)pyrene	ug/kg	0.7955	14	100%	100%	0%	18.2	9.5	7.7	45	-	-	87	91%	91%	9%	3270	6160	7.49	34000	0.656	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	26.15	14	100%	43%	57%	23.4	11.5	9.1	55	-	-	46	96%	93%	7%	3450	9690	25	65000	2.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	0.58	14	100%	100%	0%	13.7	6.6	5.8	32	-	-	87	86%	86%	14%	1650	3170	4.33	18000	0.202	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	26.15	14	100%	0%	100%	8.00	3.94	2.7	19	-	-	46	96%	87%	13%	2230	9420	8.3	65000	2.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Chrysene	ug/kg	0.881	14	100%	100%	0%	18.3	9.5	6.4	45	-	-	87	93%	93%	7%	3350	6370	1.8	35300	0.741	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	2.2	14	50%	50%	50%	3.53	1.20	2.7	6.9	2.2	2.2	87	71%	70%	30%	398	1120	1.23	9900	0.273	1800	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Fluoranthene	ug/kg	1.28	14	100%	100%	0%	27.0	14.0	10	66	-	-	87	92%	92%	8%	5830	10400	6.29	54000	1.05	71.1	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Fluorene	ug/kg	1.7	14	7%	7%	93%	-	-	3.2	3.2	1.7	1.7	87	69%	68%	32%	158	301	1.69	1610	0.573	180	-	Contingency Table Analysis	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	0.5645	14	100%	100%	0%	14.1	7.5	5.2	34	-	-	87	89%	89%	11%	1940	3710	3.52	20000	0.286	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Naphthalene	ug/kg	1.3	14	43%	43%	57%	1.47	0.27	1.3	2.2	1.3	1.3	87	55%	55%	45%	70.7	219.0	1.7	1710	0.548	190	-	Wilcoxon Rank Sum Test	0.008	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Phenanthrene	ug/kg	1.025	14	100%	100%	0%	13.2	7.2	5.5	34	-	-	87	93%	93%	7%	1760	3410	2.47	21900	0.713	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Pyrene	ug/kg	0.412	14	100%	100%	0%	26.8	13.3	10	64	-	-	87	94%	94%	6%	6370	11500	2.1	67100	0.352	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Total LPAHs	ug/kg	5	14	100%	100%	0%	21	9	12	49	-	-	87	94%	94%	6%	2976	5696	6	34767	4	299	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Total HPAHs	ug/kg	6	14	100%	100%	0%	167	84	65	401	-	-	87	94%	94%	6%	29102	56082	16	367900	5	498	-	Wilcoxon Rank Sum Test	0.000	**Yes**			

Figure L-2. Comparison of Upland OU Soils to Reference Area Soils -- MRL Censored

						Reference Area										Site AOPC										Shapiro-Wilk W Test	Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Site AOPC	Depth Group	Analyte Group	Analyte	Unit	Median MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	Distribution	Appropriate Statistical Test	p-value	Significant Higher Conc in Site?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Landfill	0-1 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	10	100%	100%	0%	14026	3769	7560	19100	-	-	Normal	t-Test (normal)	1.000	**No**	4358	5019	22%
Landfill	0-1 ft	Metals	Antimony	mg/kg	0.3	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	20	20%	20%	80%	0.815	1.210	0.309	4.2	0.2	2.9	-	Wilcoxon Rank Sum Test	0.043	**Yes**			
Landfill	0-1 ft	Metals	Arsenic	mg/kg	-	14	100%	100%	0%	3.10	1.26	1.09	5.18	-	-	21	100%	100%	0%	5.33	6.02	1.5	30.1	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.063	**No**	4.75	4.58	148%
Landfill	0-1 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	21	100%	100%	0%	116	41	58.9	242.5	-	-	Lognormal	t-Test (lognormal)	0.314	**No**	37.9	36.5	33%
Landfill	0-1 ft	Metals	Beryllium	mg/kg	0.275	14	100%	100%	0%	0.491	0.091	0.319	0.629	-	-	21	81%	81%	19%	0.380	0.083	0.3	0.5755	0.27	0.467	-	Wilcoxon Rank Sum Test	0.999	**No**	0.0866	0.0834	17%
Landfill	0-1 ft	Metals	Cadmium	mg/kg	0.27	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	21	71%	71%	29%	0.769	0.524	0.343	2.09	0.26	0.29	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	10	100%	100%	0%	5608	969	4380	6920	-	-	Normal	t-Test (normal)	0.985	**No**	1537	1770	25%
Landfill	0-1 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	21	100%	100%	0%	77.2	173.6	14.7	801	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.278	**No**	135	130	598%
Landfill	0-1 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	10	100%	100%	0%	11.1	4.9	6.4	22.7	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.998	**No**	3.90	4.50	27%
Landfill	0-1 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	21	100%	100%	0%	73.6	101.3	23.5	494	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.076	**No**	79.1	76.2	195%
Landfill	0-1 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	21	100%	100%	0%	25524	7916	14100	45900	-	-	Normal	t-Test (normal)	0.980	**No**	6624	6381	21%
Landfill	0-1 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	21	100%	100%	0%	211	236	5.34	741	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Landfill	0-1 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	10	100%	100%	0%	8933	9321	4260	35100	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.873	**No**	6263	7213	92%
Landfill	0-1 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	21	100%	100%	0%	382	142	196	720	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	141	136	22%
Landfill	0-1 ft	Metals	Mercury	mg/kg	0.11	14	100%	0%	100%	0.0494	0.0091	0.034	0.068	-	-	23	78%	61%	39%	0.427	0.851	0.07	4.15	0.1	0.11	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	21	100%	100%	0%	58.4	122.5	13.4	570	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.186	**No**	95.4	91.9	492%
Landfill	0-1 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	10	100%	100%	0%	1325	291	797	1870	-	-	Normal	t-Test (normal)	0.526	**No**	354	408	31%
Landfill	0-1 ft	Metals	Selenium	mg/kg	0.975	14	0%	0%	100%	-	-	-	-	2.1	2.3	21	14%	0%	100%	0.245	0.144	0.205	0.848	0.2	1.5	-	Contingency Table Analysis	0.203	**No**			
Landfill	0-1 ft	Metals	Silver	mg/kg	0.51	14	86%	0%	100%	0.0605	0.0400	0.027	0.187	0.065	0.069	21	33%	10%	90%	0.346	0.286	0.2	1.5	0.2	0.57	-	Wilcoxon Rank Sum Test	0.129	**No**	0.224	0.216	357%
Landfill	0-1 ft	Metals	Sodium	mg/kg	467	14	100%	0%	100%	171	75	69.6	324	-	-	10	90%	60%	40%	497	55	420	570	467	467	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Landfill	0-1 ft	Metals	Thallium	mg/kg	0.26	14	57%	0%	100%	0.145	0.023	0.128	0.203	0.042	0.103	21	10%	5%	95%	0.109	0.060	0.0953	0.378	0.2	0.3	-	Contingency Table Analysis	1.000	**No**			
Landfill	0-1 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	10	100%	100%	0%	42.3	8.2	34.3	56.3	-	-	Normal	t-Test (normal)	1.000	**No**	11.6	13.4	17%
Landfill	0-1 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	21	100%	100%	0%	164	120	41.6	635	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Acenaphthene	ug/kg	20	14	64%	0%	100%	1.75	0.63	1.2	3.4	9.9	10	27	70%	63%	37%	262	523	15	2600	20	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Acenaphthylene	ug/kg	20	14	7%	0%	100%	-	-	1.6	1.6	9.9	10	27	26%	11%	89%	20.7	21.0	3.4	78.1	20	190	-	Contingency Table Analysis	0.153	**No**			
Landfill	0-1 ft	SVOCs	Anthracene	ug/kg	114.9	14	86%	0%	100%	2.47	0.94	1.5	4.9	9.9	10	27	85%	41%	59%	398	613	12	2700	49.8	180	-	Wilcoxon Rank Sum Test	0.004	**Yes**			
Landfill	0-1 ft	SVOCs	Benzo(a)anthracene	ug/kg	177.4	14	100%	0%	100%	14.0	7.2	4.6	34	-	-	27	93%	70%	30%	2970	6280	29	32000	49.8	305	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Benzo(a)pyrene	ug/kg	100.9	14	100%	0%	100%	18.2	9.5	7.7	45	-	-	27	93%	78%	22%	3180	6450	28	33000	49.8	152	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	49.8	14	100%	7%	93%	23.4	11.5	9.1	55	-	-	24	96%	92%	8%	4330	12900	34	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	152	14	100%	0%	100%	13.7	6.6	5.8	32	-	-	27	89%	63%	37%	1580	3510	20	18000	49.8	168	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	49.8	14	100%	0%	100%	8.00	3.94	2.7	19	-	-	24	96%	92%	8%	3460	12900	40	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Chrysene	ug/kg	49.8	14	100%	0%	100%	18.3	9.5	6.4	45	-	-	27	96%	96%	4%	3110	6180	62	32000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	10	14	50%	0%	100%	4.36	1.23	2.7	6.9	10	10	27	81%	81%	19%	615	1850	18	9900	49.8	1800	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Fluoranthene	ug/kg	100.9	14	100%	0%	100%	27.0	14.0	10	66	-	-	27	93%	85%	15%	5320	10800	42	54000	49.8	152	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Fluorene	ug/kg	10	14	7%	0%	100%	-	-	3.2	3.2	9.9	10	27	59%	59%	41%	133	239	10	1200	20	180	-	Contingency Table Analysis	0.001	**Yes**			
Landfill	0-1 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	152	14	100%	0%	100%	14.1	7.5	5.2	34	-	-	27	89%	63%	37%	1790	3790	18	19000	49.8	168	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Naphthalene	ug/kg	20	14	43%	0%	100%	1.70	0.27	1.3	2.2	9.9	10	27	41%	30%	70%	98.5	212.0	5	823	20	190	-	Wilcoxon Rank Sum Test	0.021	**Yes**			
Landfill	0-1 ft	SVOCs	Phenanthrene	ug/kg	49.8	14	100%	0%	100%	13.2	7.2	5.5	34	-	-	27	96%	81%	19%	1540	2480	13	12000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Pyrene	ug/kg	49.8	14	100%	7%	93%	26.8	13.3	10	64	-	-	27	96%	93%	7%	4940	8640	43	40000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Total LPAHs	ug/kg	299	14	100%	0%	100%	32	12	20	56	-	-	27	96%	70%	30%	2566	3828	141	18674	299	299	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-1 ft	SVOCs	Total HPAHs	ug/kg	498	14	100%	0%	100%	169	83	68	401	-	-	27	96%	93%	7%	30511	69770	334	367900	498	498	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	12	100%	100%	0%	13008	4235	6000	19100	-	-	Normal	t-Test (normal)	1.000	**No**	4506	4709	21%
Landfill	0-3 ft	Metals	Antimony	mg/kg	0.3	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	22	27%	27%	73%	0.958	1.230	0.309	4.2	0.2	2.9	-	Wilcoxon Rank Sum Test	0.019	**Yes**			
Landfill	0-3 ft	Metals	Arsenic	mg/kg	-	14	100%	100%	0%	3.10	1.26	1.09	5.18	-	-	23	100%	100%	0%	5.30	5.75	1.5	30.1	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.041	**Yes**			
Landfill	0-3 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	23	100%	100%	0%	114	42	42.6	242.5	-	-	Lognormal	t-Test (lognormal)	0.442	**No**	38.9	37.4	34%
Landfill	0-3 ft	Metals	Beryllium	mg/kg	0.334	14	100%	93%	7%	0.491	0.091	0.319	0.629	-	-	23	74%	52%	48%	0.376	0.082	0.3	0.5755	0.27	0.467	-	Wilcoxon Rank Sum Test	0.999	**No**	0.0856	0.0825	17%
Landfill	0-3 ft	Metals	Cadmium	mg/kg	0.27	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	23	74%	74%	26%	0.888	0.756	0.343	3.54	0.26	0.29	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	12	100%	100%	0%	6055	1654	4380	10485	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.962	**No**	1751	1830	26%
Landfill	0-3 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	23	100%	100%	0%	190	444	14.7	1950	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.162	**No**	352	339	1559%
Landfill	0-3 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	12	100%	100%	0%	14.5	10.0	6.4	41	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.962	**No**	7.11	7.43	45%
Landfill	0-3 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	23	100%	100%	0%	85.3	116.0	23.5	494	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.061	**No**	92.1	88.8	228%
Landfill	0-3 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	23	100%	100%	0%	27267	9645	14100	51000	-	-	Lognormal	t-Test (lognormal)	0.955	**No**	8002	7709	26%
Landfill	0-3 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	29	100%	100%	0%	342	413	5.34	1660	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Landfill	0-3 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	12	100%	100%	0%	16190	21772	4260	77700	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.611	**No**	14854	15522	198%
Landfill	0-3 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	23	100%	100%	0%	462	323	196	1712.5	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	270	260	41%
Landfill	0-3 ft	Metals	Mercury	mg/kg	0.11	14	100%	0%	100%	0.0494	0.0091	0.034	0.068	-	-	25	80%	56%	44%	0.397	0.823	0.0475	4.15	0.1	0.11	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Landfill	0-3 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	23	100%	100%	0%	148	356	13.4	1610	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.102	**No**	282	272	1458%
Landfill	0-3 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	12	100%	100%	0%	1191	418	322	1870	-	-	Normal	t-Test (normal)	0.812	**No**	404	422	32%
Landfill	0-3 ft	Metals	Selenium	mg/kg	0.975	14	0%	0%	100%	-	-	-	-	2.1	2.3	23	22%	0%	100%	0.276	0.192	0.205	0.879	0.2	1.5	-	Contingency Table Analysis	0.077	**No**			
Landfill	0-3 ft	Metals	Silver	mg/kg	0.51	14	86%	0%	100%	0.0605	0.0400	0.027	0.187	0.065	0.069	23	39%	13%	87%	0.327	0.304	0.126	1.5	0.2	0.57	-	Wilcoxon Rank Sum Test	0.088	**No**	0.242	0.233	386%
Landfill	0-3 ft	Metals	Sodium	mg/kg	405	14	100%	0%	100%	171	75	69.6	324	-	-	12	75%	75%	25%	483	58	420	570	388	467	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	Metals	Thallium	mg/kg	0.26	14	57%	0%	100%	0.145	0.023	0.128	0.203	0.042	0.103	23	17%	4%	96%	0.0917	0.0629	0.0578	0.378	0.2	0.3	-	Wilcoxon Rank Sum Test	0.234	**No**	0.0519	0.0500	34%
Landfill	0-3 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	12	100%	100%	0%	43.2	8.5	34.3	56.3	-	-	Normal	t-Test (normal)	1.000	**No**	11.5	12.0	15%
Landfill	0-3 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	23	100%	100%	0%	204	234	41.6	1140	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Acenaphthene	ug/kg	20	14	64%	0%	100%	1.75	0.63	1.2	3.4	9.9	10	33	76%	70%	30%	395	669	15	2600	20	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Acenaphthylene	ug/kg	20	14	7%	0%	100%	-	-	1.6	1.6	9.9	10	33	39%	18%	82%	26.2	26.7	3.4	111	20	190	-	Contingency Table Analysis	0.026	**Yes**			
Landfill	0-3 ft	SVOCs	Anthracene	ug/kg	114.9	14	86%	0%	100%	2.47	0.94	1.5	4.9	9.9	10	33	88%	52%	48%	761	1510	12	8440	49.8	180	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Landfill	0-3 ft	SVOCs	Benzo(a)anthracene	ug/kg	177.4	14	100%	0%	100%	14.0	7.2	4.6	34	-	-	33	94%	76%	24%	4330	7300	29	32000	49.8	305	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Benzo(a)pyrene	ug/kg	100.9	14	100%	0%	100%	18.2	9.5	7.7	45	-	-	33	94%	82%	18%	4890	8130	28	34000	49.8	152	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	49.8	14	100%	7%	93%	23.4	11.5	9.1	55	-	-	28	96%	93%	7%	5030	12100	34	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			

Figure L-2. Comparison of Upland OU Soils to Reference Area Soils -- MRL Censored

						Reference Area										Site AOPC										Shapiro-Wilk W Test	Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Site AOPC	Depth Group	Analyte Group	Analyte	Unit	Median MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	Distribution	Appropriate Statistical Test	p-value	Significant Higher Conc in Site?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Landfill	0-3 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	152	14	100%	0%	100%	13.7	6.6	5.8	32	-	-	33	91%	70%	30%	2490	4320	20	18000	49.8	168	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	49.8	14	100%	0%	100%	8.00	3.94	2.7	19	-	-	28	96%	93%	7%	3440	11900	40	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Chrysene	ug/kg	49.8	14	100%	0%	100%	18.3	9.5	6.4	45	-	-	33	97%	97%	3%	4780	8050	62	35300	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	10	14	50%	0%	100%	4.36	1.23	2.7	6.9	10	10	33	85%	85%	15%	742	1710	18	9900	49.8	1800	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Fluoranthene	ug/kg	100.9	14	100%	0%	100%	27.0	14.0	10	66	-	-	33	94%	88%	12%	7750	12600	42	54000	49.8	152	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Fluorene	ug/kg	10	14	7%	0%	100%	-	-	3.2	3.2	9.9	10	33	67%	67%	33%	205	342	10	1610	20	180	-	Contingency Table Analysis	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	152	14	100%	0%	100%	14.1	7.5	5.2	34	-	-	33	91%	70%	30%	2940	5000	18	20000	49.8	168	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Naphthalene	ug/kg	20	14	43%	0%	100%	1.70	0.27	1.3	2.2	9.9	10	33	52%	42%	58%	98.7	193.0	5	823	20	190	-	Wilcoxon Rank Sum Test	0.004	**Yes**			
Landfill	0-3 ft	SVOCs	Phenanthrene	ug/kg	49.8	14	100%	0%	100%	13.2	7.2	5.5	34	-	-	33	97%	85%	15%	2500	4260	13	21900	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Pyrene	ug/kg	49.8	14	100%	7%	93%	26.8	13.3	10	64	-	-	33	97%	94%	6%	8220	13700	43	67100	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Total LPAHs	ug/kg	299	14	100%	0%	100%	32	12	20	56	-	-	33	97%	76%	24%	4079	6699	141	34767	299	299	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-3 ft	SVOCs	Total HPAHs	ug/kg	498	14	100%	0%	100%	169	83	68	401	-	-	33	97%	94%	6%	43384	75455	334	367900	498	498	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	26	100%	100%	0%	10731	5200	2380	23100	-	-	Normal	t-Test (normal)	1.000	**No**	5042	4858	21%
Landfill	0-10 ft	Metals	Antimony	mg/kg	0.3	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	36	56%	56%	44%	1.50	1.86	0.309	8.19	0.2	2.9	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	Metals	Arsenic	mg/kg	-	14	100%	100%	0%	3.10	1.26	1.09	5.18	-	-	37	100%	100%	0%	4.73	4.71	1.5	30.1	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.066	**No**	4.09	3.94	127%
Landfill	0-10 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	37	100%	100%	0%	104	41	34	242.5	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.719	**No**	38.7	37.3	34%
Landfill	0-10 ft	Metals	Beryllium	mg/kg	0.39	14	100%	86%	14%	0.491	0.091	0.319	0.629	-	-	37	70%	27%	73%	0.321	0.099	0.186	0.5755	0.27	0.467	-	Wilcoxon Rank Sum Test	1.000	**No**	0.0968	0.0933	19%
Landfill	0-10 ft	Metals	Cadmium	mg/kg	0.27	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	37	84%	84%	16%	1.13	0.78	0.343	3.54	0.26	0.29	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	26	100%	100%	0%	5336	1583	1760	10485	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.998	**No**	1671	1610	23%
Landfill	0-10 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	37	100%	100%	0%	242	577	11	2300	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.103	**No**	495	477	2191%
Landfill	0-10 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	26	100%	100%	0%	15.3	9.8	3.99	42.3	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.976	**No**	8.18	7.88	48%
Landfill	0-10 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	37	100%	100%	0%	79.0	102.1	17.9	494	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.158	**No**	87.7	84.5	217%
Landfill	0-10 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	37	100%	100%	0%	27366	10090	10300	51000	-	-	Lognormal	t-Test (lognormal)	0.977	**No**	8875	8550	29%
Landfill	0-10 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	43	100%	100%	0%	366	391	5.34	1660	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Landfill	0-10 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	26	100%	100%	0%	16251	24551	1190	88300	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.810	**No**	19967	19235	246%
Landfill	0-10 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	37	100%	100%	0%	463	285	146	1712.5	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	255	245	39%
Landfill	0-10 ft	Metals	Mercury	mg/kg	0.11	14	100%	0%	100%	0.0494	0.0091	0.034	0.068	-	-	39	87%	49%	51%	0.327	0.686	0.015	4.15	0.1	0.11	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Landfill	0-10 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	37	100%	100%	0%	166	403	7.85	1760	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.039	**Yes**			
Landfill	0-10 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	26	100%	100%	0%	871	454	214	1870	-	-	Normal	t-Test (normal)	0.999	**No**	434	418	31%
Landfill	0-10 ft	Metals	Selenium	mg/kg	0.448	14	0%	0%	100%	-	-	-	-	2.1	2.3	37	30%	5%	95%	0.223	0.167	0.106	0.879	0.2	1.5	-	Contingency Table Analysis	0.018	**Yes**			
Landfill	0-10 ft	Metals	Silver	mg/kg	0.51	14	86%	0%	100%	0.0605	0.0400	0.027	0.187	0.065	0.069	37	62%	19%	81%	0.387	0.403	0.101	1.52	0.2	0.57	-	Wilcoxon Rank Sum Test	0.044	**Yes**			
Landfill	0-10 ft	Metals	Sodium	mg/kg	386	14	100%	0%	100%	171	75	69.6	324	-	-	26	38%	35%	65%	285	164	165	570	214	467	-	Wilcoxon Rank Sum Test	0.008	**Yes**			
Landfill	0-10 ft	Metals	Thallium	mg/kg	0.26	14	57%	0%	100%	0.145	0.023	0.128	0.203	0.042	0.103	37	49%	3%	97%	0.109	0.059	0.0361	0.378	0.2	0.3	-	Wilcoxon Rank Sum Test	0.284	**No**	0.0521	0.0502	35%
Landfill	0-10 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	26	100%	100%	0%	48.1	17.7	15.9	93.4	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	16.4	15.8	20%
Landfill	0-10 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	37	100%	100%	0%	204	196	41.6	1140	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Acenaphthene	ug/kg	20	14	64%	0%	100%	1.75	0.63	1.2	3.4	9.9	10	44	77%	73%	27%	441	718	15	3040	14.7	1440	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Acenaphthylene	ug/kg	20	14	7%	0%	100%	-	-	1.6	1.6	9.9	10	44	43%	27%	73%	26.7	25.2	3.4	111	13.5	190	-	Contingency Table Analysis	0.012	**Yes**			
Landfill	0-10 ft	SVOCs	Anthracene	ug/kg	49.8	14	86%	0%	100%	2.47	0.94	1.5	4.9	9.9	10	44	89%	73%	27%	1100	1900	12	8440	14.7	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Benzo(a)anthracene	ug/kg	177.4	14	100%	0%	100%	14.0	7.2	4.6	34	-	-	44	95%	80%	20%	5650	8160	29	32000	49.8	305	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Benzo(a)pyrene	ug/kg	100.9	14	100%	0%	100%	18.2	9.5	7.7	45	-	-	44	95%	86%	14%	5620	7730	28	34000	49.8	152	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	49.8	14	100%	7%	93%	23.4	11.5	9.1	55	-	-	28	96%	93%	7%	5030	12100	34	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	152	14	100%	0%	100%	13.7	6.6	5.8	32	-	-	44	93%	75%	25%	2850	4040	20	18000	49.8	168	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	49.8	14	100%	0%	100%	8.00	3.94	2.7	19	-	-	28	96%	93%	7%	3440	11900	40	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Chrysene	ug/kg	49.8	14	100%	0%	100%	18.3	9.5	6.4	45	-	-	44	98%	98%	2%	5680	8030	62	35300	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	13.2	14	50%	0%	100%	4.36	1.23	2.7	6.9	10	10	44	82%	82%	18%	655	1500	18	9900	13.2	1800	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Fluoranthene	ug/kg	100.9	14	100%	0%	100%	27.0	14.0	10	66	-	-	44	95%	91%	9%	9600	12600	42	54000	49.8	152	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Fluorene	ug/kg	10	14	7%	0%	100%	-	-	3.2	3.2	9.9	10	44	73%	73%	27%	251	374	10	1610	14.7	180	-	Contingency Table Analysis	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	152	14	100%	0%	100%	14.1	7.5	5.2	34	-	-	44	93%	75%	25%	3380	4710	18	20000	49.8	168	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Naphthalene	ug/kg	20	14	43%	0%	100%	1.70	0.27	1.3	2.2	9.9	10	44	55%	48%	52%	120	296	5	1710	13.5	190	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Landfill	0-10 ft	SVOCs	Phenanthrene	ug/kg	5724.9	14	100%	0%	100%	13.2	7.2	5.5	34	-	-	44	95%	11%	89%	2840	4360	13	21900	49.8	11400	-	Wilcoxon Rank Sum Test	0.099	**No**	3821	3681	27868%
Landfill	0-10 ft	SVOCs	Pyrene	ug/kg	49.8	14	100%	7%	93%	26.8	13.3	10	64	-	-	44	98%	95%	5%	10600	13900	43	67100	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Total LPAHs	ug/kg	299	14	100%	0%	100%	32	12	20	56	-	-	44	98%	80%	20%	4846	7239	97	34767	299	299	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Landfill	0-10 ft	SVOCs	Total HPAHs	ug/kg	498	14	100%	0%	100%	169	83	68	401	-	-	44	98%	95%	5%	49424	70834	334	367900	498	498	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	58	100%	100%	0%	6906	5003	1530	24300	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	4952	4771	21%
Sandblast	0-1 ft	Metals	Antimony	mg/kg	3.11	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	58	71%	7%	93%	1.62	2.23	0.0895	13.7	0.16	3.54	-	Wilcoxon Rank Sum Test	0.162	**No**	2.01	1.94	1516%
Sandblast	0-1 ft	Metals	Arsenic	mg/kg	1.04	14	100%	100%	0%	3.10	1.26	1.09	5.18	-	-	58	98%	90%	10%	7.64	12.90	0.613	80.9	1.04	1.04	-	Wilcoxon Rank Sum Test	0.006	**Yes**			
Sandblast	0-1 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	58	100%	100%	0%	67.2	32.9	10.7	133	-	-	Normal	t-Test (normal)	1.000	**No**	32.8	31.6	29%
Sandblast	0-1 ft	Metals	Beryllium	mg/kg	0.427	14	100%	79%	21%	0.491	0.091	0.319	0.629	-	-	58	47%	5%	95%	0.269	0.099	0.0587	0.63	0.363	0.472	-	Wilcoxon Rank Sum Test	1.000	**No**	0.0974	0.0938	19%
Sandblast	0-1 ft	Metals	Cadmium	mg/kg	0.256	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	58	91%	86%	14%	1.67	2.64	0.0561	17.3	0.248	0.261	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	58	100%	100%	0%	4259	2711	863	15100	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	2570	2476	35%
Sandblast	0-1 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	61	100%	100%	0%	383	605	5.27	2650	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.003	**Yes**			
Sandblast	0-1 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	58	100%	100%	0%	12.7	4.4	2.52	24.95	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	4.17	4.02	24%
Sandblast	0-1 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	58	100%	100%	0%	64.8	66.2	13.2	319	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.446	**No**	59.9	57.7	148%
Sandblast	0-1 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	58	100%	100%	0%	27103	8838	10100	46500	-	-	Lognormal	t-Test (lognormal)	0.992	**No**	8147	7849	26%
Sandblast	0-1 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	61	100%	100%	0%	362	479	8.58	3260	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Sandblast	0-1 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	58	100%	100%	0%	11462	11051	1350	47500	-	-	Lognormal	t-Test (lognormal)	0.363	**No**	10030	9662	124%
Sandblast	0-1 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	58	100%	100%	0%	416	145	167	789	-	-	Normal	t-Test (normal)	1.000	**No**	144	139	22%
Sandblast	0-1 ft	Metals	Mercury	mg/kg	0.0421	14	100%	86%	14%	0.0494	0.0091	0.034	0.068	-	-	58	74%	43%	57%	0.0847	0.1280	0.0114	0.723	0.0199	0.0466	-	Wilcoxon Rank Sum Test	0.932	**No**	0.116	0.111	226%
Sandblast	0-1 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	58	100%	100%	0%	167	254	4.79	1060	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.003	**Yes**			
Sandblast	0-1 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	58	100%	100%	0%	524	340	74.9	1480	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	350	337	25%

Figure L-2. Comparison of Upland OU Soils to Reference Area Soils -- MRL Censored

						Reference Area										Site AOPC										Shapiro-Wilk W Test	Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Site AOPC	Depth Group	Analyte Group	Analyte	Unit	Median MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	Distribution	Appropriate Statistical Test	p-value	Significant Higher Conc in Site?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Sandblast	0-1 ft	Metals	Selenium	mg/kg	2.955	14	0%	0%	100%	-	-	-	-	2.1	2.3	58	52%	0%	100%	0.547	0.191	0.175	0.9	0.262	3.54	-	Contingency Table Analysis	0.000	**Yes**			
Sandblast	0-1 ft	Metals	Silver	mg/kg	0.454	14	86%	0%	100%	0.0605	0.0400	0.027	0.187	0.065	0.069	58	95%	0%	100%	0.145	0.080	0.0571	0.431	0.454	0.54	-	All Samples are Censored at Median MRL	-	**-**			
Sandblast	0-1 ft	Metals	Sodium	mg/kg	227.5	14	100%	21%	79%	171	75	69.6	324	-	-	58	24%	24%	76%	298	64	264	470	103	1130	-	Wilcoxon Rank Sum Test	0.327	**No**	66.3	63.8	37%
Sandblast	0-1 ft	Metals	Thallium	mg/kg	0.497	14	57%	0%	100%	0.145	0.023	0.128	0.203	0.042	0.103	58	79%	0%	100%	0.0991	0.0441	0.0288	0.239	0.454	0.589	-	All Samples are Censored at Median MRL	-	**-**			
Sandblast	0-1 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	58	100%	100%	0%	44.4	20.9	6.89	84.7	-	-	Normal	t-Test (normal)	1.000	**No**	19.7	19.0	24%
Sandblast	0-1 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	58	100%	100%	0%	173	194	30.3	1160	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Acenaphthene	ug/kg	9.9	14	64%	0%	100%	1.75	0.63	1.2	3.4	9.9	10	31	81%	58%	42%	75.0	121.0	1.5	469.5	1.23	10	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Acenaphthylene	ug/kg	10	14	7%	0%	100%	-	-	1.6	1.6	9.9	10	31	45%	23%	77%	12.0	20.1	1.39	87.7	1.17	340	-	Contingency Table Analysis	0.012	**Yes**			
Sandblast	0-1 ft	SVOCs	Anthracene	ug/kg	5.985	14	86%	0%	100%	2.47	0.94	1.5	4.9	9.9	10	31	94%	68%	32%	148	239	1.72	832	1.41	2.07	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Benzo(a)anthracene	ug/kg	2.26	14	100%	100%	0%	14.0	7.2	4.6	34	-	-	31	94%	94%	6%	736	1270	3.96	6440	2.07	2.45	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Benzo(a)pyrene	ug/kg	2.07	14	100%	100%	0%	18.2	9.5	7.7	45	-	-	31	97%	97%	3%	746	1280	7.49	6470	2.07	2.07	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	-	14	100%	100%	0%	23.4	11.5	9.1	55	-	-	13	100%	100%	0%	1348	1218	25	4100	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	1.41	14	100%	100%	0%	13.7	6.6	5.8	32	-	-	31	84%	84%	16%	449	774	6.89	3830	1.23	2.07	-	Wilcoxon Rank Sum Test	0.004	**Yes**			
Sandblast	0-1 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	-	14	100%	100%	0%	8.00	3.94	2.7	19	-	-	13	100%	100%	0%	469	419	8.3	1400	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Chrysene	ug/kg	2.07	14	100%	100%	0%	18.3	9.5	6.4	45	-	-	31	97%	97%	3%	875	1500	6.36	7590	2.07	2.07	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	6.035	14	50%	7%	93%	4.36	1.23	2.7	6.9	10	10	31	65%	61%	39%	150	280	1.23	1430	1.17	14.6	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Fluoranthene	ug/kg	2.07	14	100%	100%	0%	27.0	14.0	10	66	-	-	31	97%	97%	3%	1660	3740	8.47	20700	2.07	2.07	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Fluorene	ug/kg	10	14	7%	0%	100%	-	-	3.2	3.2	9.9	10	31	74%	45%	55%	65.2	113.0	1.69	462.5	1.23	340	-	Contingency Table Analysis	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	1.49	14	100%	100%	0%	14.1	7.5	5.2	34	-	-	31	90%	90%	10%	479	811	3.68	3910	1.23	2.07	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-1 ft	SVOCs	Naphthalene	ug/kg	9.9	14	43%	0%	100%	1.70	0.27	1.3	2.2	9.9	10	31	61%	29%	71%	25.9	45.6	1.7	227	1.17	340	-	Wilcoxon Rank Sum Test	0.014	**Yes**			
Sandblast	0-1 ft	SVOCs	Phenanthrene	ug/kg	-	14	100%	100%	0%	13.2	7.2	5.5	34	-	-	31	100%	100%	0%	707	1081	5.64	4000	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Pyrene	ug/kg	2.07	14	100%	100%	0%	26.8	13.3	10	64	-	-	31	97%	97%	3%	1660	3920	10	21900	2.07	2.07	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-1 ft	SVOCs	Total LPAHs	ug/kg	-	14	100%	100%	0%	32	12	20	56	-	-	31	100%	100%	0%	1049	1608	12	5714	-	-	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-1 ft	SVOCs	Total HPAHs	ug/kg	17	14	100%	100%	0%	169	83	68	401	-	-	31	97%	97%	3%	7517	13891	41	72270	17	17	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-3 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	75	100%	100%	0%	8256	5476	1530	24300	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	5370	5173	23%
Sandblast	0-3 ft	Metals	Antimony	mg/kg	3.135	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	75	73%	5%	95%	1.38	2.02	0.07	13.7	0.16	4.01	-	Wilcoxon Rank Sum Test	0.194	**No**	1.86	1.79	1404%
Sandblast	0-3 ft	Metals	Arsenic	mg/kg	1.04	14	100%	100%	0%	3.10	1.26	1.09	5.18	-	-	75	99%	92%	8%	7.15	11.40	0.613	80.9	1.04	1.04	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-3 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	75	100%	100%	0%	71.7	32.3	10.7	138	-	-	Normal	t-Test (normal)	1.000	**No**	32.3	31.2	28%
Sandblast	0-3 ft	Metals	Beryllium	mg/kg	0.427	14	100%	79%	21%	0.491	0.091	0.319	0.629	-	-	75	59%	13%	87%	0.309	0.114	0.0587	0.63	0.363	0.472	-	Wilcoxon Rank Sum Test	1.000	**No**	0.111	0.107	22%
Sandblast	0-3 ft	Metals	Cadmium	mg/kg	0.259	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	75	89%	81%	19%	1.43	2.38	0.0561	17.3	0.248	0.311	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	75	100%	100%	0%	4820	2694	863	15100	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	2584	2489	35%
Sandblast	0-3 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	78	100%	100%	0%	306	554	5.27	2650	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.007	**Yes**			
Sandblast	0-3 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	75	100%	100%	0%	13.2	4.1	2.52	24.95	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	4.01	3.86	23%
Sandblast	0-3 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	75	100%	100%	0%	62.3	58.5	13.2	319	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.162	**No**	54.1	52.1	134%
Sandblast	0-3 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	75	100%	100%	0%	27114	8238	10100	46500	-	-	Lognormal	t-Test (lognormal)	0.995	**No**	7743	7460	25%
Sandblast	0-3 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	78	100%	100%	0%	309	446	8.58	3260	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	75	100%	100%	0%	10593	9932	9.75	47500	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.572	**No**	9211	8874	113%
Sandblast	0-3 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	75	100%	100%	0%	426	143	167	816	-	-	Normal	t-Test (normal)	1.000	**No**	143	137	22%
Sandblast	0-3 ft	Metals	Mercury	mg/kg	0.0428	14	100%	86%	14%	0.0494	0.0091	0.034	0.068	-	-	75	77%	39%	61%	0.0771	0.1150	0.0114	0.723	0.0199	0.0514	-	Wilcoxon Rank Sum Test	0.946	**No**	0.106	0.102	207%
Sandblast	0-3 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	75	100%	100%	0%	135	230	4.79	1060	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-3 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	75	100%	100%	0%	559	321	74.9	1480	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	333	320	24%
Sandblast	0-3 ft	Metals	Selenium	mg/kg	3	14	0%	0%	100%	-	-	-	-	2.1	2.3	75	57%	0%	100%	0.555	0.189	0.175	0.9	0.262	4.01	-	Contingency Table Analysis	0.000	**Yes**			
Sandblast	0-3 ft	Metals	Silver	mg/kg	0.454	14	86%	0%	100%	0.0605	0.0400	0.027	0.187	0.065	0.069	75	96%	0%	100%	0.141	0.075	0.045	0.431	0.454	0.54	-	All Samples are Censored at Median MRL	-	**-**			
Sandblast	0-3 ft	Metals	Sodium	mg/kg	232	14	100%	21%	79%	171	75	69.6	324	-	-	75	36%	31%	69%	251	104	173	547	103	1130	-	Wilcoxon Rank Sum Test	0.175	**No**	100	97	56%
Sandblast	0-3 ft	Metals	Thallium	mg/kg	0.497	14	57%	0%	100%	0.145	0.023	0.128	0.203	0.042	0.103	75	84%	0%	100%	0.107	0.045	0.0288	0.255	0.454	0.589	-	All Samples are Censored at Median MRL	-	**-**			
Sandblast	0-3 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	75	100%	100%	0%	48.1	20.8	6.89	89.1	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	19.9	19.1	24%
Sandblast	0-3 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	75	100%	100%	0%	148	176	30.3	1160	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-3 ft	SVOCs	Acenaphthene	ug/kg	4.51	14	64%	0%	100%	1.75	0.63	1.2	3.4	9.9	10	40	78%	63%	38%	147	503	1.1	3200	1.23	10	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Acenaphthylene	ug/kg	9.9	14	7%	0%	100%	-	-	1.6	1.6	9.9	10	40	40%	20%	80%	17.2	48.5	1.39	295	1.17	340	-	Contingency Table Analysis	0.021	**Yes**			
Sandblast	0-3 ft	SVOCs	Anthracene	ug/kg	2.52	14	86%	29%	71%	2.47	0.94	1.5	4.9	9.9	10	40	88%	75%	25%	178	372	1.72	2040	1.41	6.5	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Benzo(a)anthracene	ug/kg	2.5	14	100%	100%	0%	14.0	7.2	4.6	34	-	-	40	88%	88%	13%	935	2160	3.96	12300	2.07	6.5	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-3 ft	SVOCs	Benzo(a)pyrene	ug/kg	2.51	14	100%	100%	0%	18.2	9.5	7.7	45	-	-	40	90%	90%	10%	926	2090	7.49	11700	2.07	6.5	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-3 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	6.5	14	100%	100%	0%	23.4	11.5	9.1	55	-	-	18	94%	94%	6%	991	1150	25	4100	6.5	6.5	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	1.49	14	100%	100%	0%	13.7	6.6	5.8	32	-	-	40	83%	83%	18%	459	843	4.33	3830	1.23	6.5	-	Wilcoxon Rank Sum Test	0.006	**Yes**			
Sandblast	0-3 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	6.5	14	100%	79%	21%	8.00	3.94	2.7	19	-	-	18	94%	94%	6%	345	396	8.3	1400	6.5	6.5	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Chrysene	ug/kg	2.5	14	100%	100%	0%	18.3	9.5	6.4	45	-	-	40	93%	90%	10%	1030	2230	1.8	12000	2.07	2.52	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-3 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	2.52	14	50%	50%	50%	4.36	1.23	2.7	6.9	10	10	40	65%	63%	38%	154	295	1.23	1430	1.17	14.6	-	Wilcoxon Rank Sum Test	0.007	**Yes**			
Sandblast	0-3 ft	SVOCs	Fluoranthene	ug/kg	2.52	14	100%	100%	0%	27.0	14.0	10	66	-	-	40	93%	93%	8%	2120	5420	6.29	28600	2.07	6.5	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-3 ft	SVOCs	Fluorene	ug/kg	10	14	7%	0%	100%	-	-	3.2	3.2	9.9	10	40	70%	40%	60%	74.6	153.0	1.69	779	1.23	340	-	Contingency Table Analysis	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	2.07	14	100%	100%	0%	14.1	7.5	5.2	34	-	-	40	88%	88%	13%	503	944	3.52	4170	1.23	6.5	-	Wilcoxon Rank Sum Test	0.005	**Yes**			
Sandblast	0-3 ft	SVOCs	Naphthalene	ug/kg	6.7	14	43%	0%	100%	1.70	0.27	1.3	2.2	9.9	10	40	60%	33%	68%	27.0	55.4	1.7	256	1.17	340	-	Wilcoxon Rank Sum Test	0.012	**Yes**			
Sandblast	0-3 ft	SVOCs	Phenanthrene	ug/kg	4.51	14	100%	100%	0%	13.2	7.2	5.5	34	-	-	40	95%	93%	8%	757	1350	2.47	6550	2.52	6.5	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Pyrene	ug/kg	2.295	14	100%	100%	0%	26.8	13.3	10	64	-	-	40	95%	93%	8%	2230	5950	2.1	32000	2.07	2.52	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-3 ft	SVOCs	Total LPAHs	ug/kg	27	14	100%	64%	36%	32	12	20	56	-	-	40	95%	75%	25%	1214	2405	12	13120	15	39	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-3 ft	SVOCs	Total HPAHs	ug/kg	18	14	100%	100%	0%	169	83	68	401	-	-	40	95%	95%	5%	8961	19944	20	105200	17	20	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	78	100%	100%	0%	8518	5534	1530	24300	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	5425	5226	23%

Figure L-2. Comparison of Upland OU Soils to Reference Area Soils -- MRL Censored

						Reference Area										Site AOPC										Shapiro-Wilk W Test	Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Site AOPC	Depth Group	Analyte Group	Analyte	Unit	Median MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	Distribution	Appropriate Statistical Test	p-value	Significant Higher Conc in Site?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Sandblast	0-10 ft	Metals	Antimony	mg/kg	3.135	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	78	74%	5%	95%	1.35	1.99	0.07	13.7	0.16	4.01	-	Wilcoxon Rank Sum Test	0.199	**No**	1.84	1.77	1387%
Sandblast	0-10 ft	Metals	Arsenic	mg/kg	1.04	14	100%	100%	0%	3.10	1.26	1.09	5.18	-	-	78	99%	92%	8%	7.09	11.20	0.613	80.9	1.04	1.04	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	78	100%	100%	0%	73.0	32.3	10.7	138	-	-	Normal	t-Test (normal)	1.000	**No**	32.3	31.2	28%
Sandblast	0-10 ft	Metals	Beryllium	mg/kg	0.427	14	100%	79%	21%	0.491	0.091	0.319	0.629	-	-	78	60%	13%	87%	0.314	0.112	0.0587	0.63	0.363	0.472	-	Wilcoxon Rank Sum Test	1.000	**No**	0.109	0.105	21%
Sandblast	0-10 ft	Metals	Cadmium	mg/kg	0.264	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	78	86%	77%	23%	1.38	2.34	0.0561	17.3	0.248	0.311	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-10 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	78	100%	100%	0%	4833	2656	863	15100	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	2553	2460	35%
Sandblast	0-10 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	81	100%	100%	0%	296	546	5.27	2650	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.007	**Yes**			
Sandblast	0-10 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	78	100%	100%	0%	13.3	4.1	2.52	24.95	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	3.95	3.81	23%
Sandblast	0-10 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	78	100%	100%	0%	61.8	57.6	13.2	319	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.171	**No**	53.4	51.4	132%
Sandblast	0-10 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	78	100%	100%	0%	27049	8095	10100	46500	-	-	Lognormal	t-Test (lognormal)	0.995	**No**	7631	7351	25%
Sandblast	0-10 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	81	100%	100%	0%	298	442	5.235	3260	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-10 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	78	100%	100%	0%	10445	9768	9.75	47500	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.595	**No**	9085	8752	112%
Sandblast	0-10 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	78	100%	100%	0%	433	148	167	818	-	-	Normal	t-Test (normal)	1.000	**No**	147	142	23%
Sandblast	0-10 ft	Metals	Mercury	mg/kg	0.0428	14	100%	86%	14%	0.0494	0.0091	0.034	0.068	-	-	78	78%	38%	62%	0.0753	0.1130	0.0114	0.723	0.0199	0.0514	-	Wilcoxon Rank Sum Test	0.952	**No**	0.105	0.101	204%
Sandblast	0-10 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	78	100%	100%	0%	131	227	4.79	1060	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	78	100%	100%	0%	562	315	74.9	1480	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	328	316	24%
Sandblast	0-10 ft	Metals	Selenium	mg/kg	3	14	0%	0%	100%	-	-	-	-	2.1	2.3	78	59%	0%	100%	0.539	0.193	0.175	0.9	0.262	4.01	-	Contingency Table Analysis	0.000	**Yes**			
Sandblast	0-10 ft	Metals	Silver	mg/kg	0.454	14	86%	0%	100%	0.0605	0.0400	0.027	0.187	0.065	0.069	78	96%	0%	100%	0.141	0.074	0.045	0.431	0.454	0.54	-	All Samples are Censored at Median MRL	-	**-**			
Sandblast	0-10 ft	Metals	Sodium	mg/kg	232	14	100%	21%	79%	171	75	69.6	324	-	-	78	36%	29%	71%	223	123	114	547	103	1130	-	Wilcoxon Rank Sum Test	0.198	**No**	117	113	66%
Sandblast	0-10 ft	Metals	Thallium	mg/kg	0.497	14	57%	0%	100%	0.145	0.023	0.128	0.203	0.042	0.103	78	85%	0%	100%	0.109	0.046	0.0288	0.255	0.454	0.589	-	All Samples are Censored at Median MRL	-	**-**			
Sandblast	0-10 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	78	100%	100%	0%	48.9	20.8	6.89	89.1	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	19.9	19.2	24%
Sandblast	0-10 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	78	100%	100%	0%	145	173	30.3	1160	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.003	**Yes**			
Sandblast	0-10 ft	SVOCs	Acenaphthene	ug/kg	2.51	14	64%	7%	93%	1.75	0.63	1.2	3.4	9.9	10	43	74%	70%	30%	137	486	1.1	3200	1.23	10	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-10 ft	SVOCs	Acenaphthylene	ug/kg	6.85	14	7%	0%	100%	-	-	1.6	1.6	9.9	10	43	37%	21%	79%	16.0	46.9	1.39	295	1.17	340	-	Contingency Table Analysis	0.030	**Yes**			
Sandblast	0-10 ft	SVOCs	Anthracene	ug/kg	2.5	14	86%	29%	71%	2.47	0.94	1.5	4.9	9.9	10	43	84%	72%	28%	166	362	1.72	2040	1.41	6.5	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-10 ft	SVOCs	Benzo(a)anthracene	ug/kg	2.45	14	100%	100%	0%	14.0	7.2	4.6	34	-	-	43	84%	84%	16%	870	2100	3.96	12300	2.07	6.5	-	Wilcoxon Rank Sum Test	0.003	**Yes**			
Sandblast	0-10 ft	SVOCs	Benzo(a)pyrene	ug/kg	2.465	14	100%	100%	0%	18.2	9.5	7.7	45	-	-	43	86%	86%	14%	862	2030	7.49	11700	2.07	6.5	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	6.5	14	100%	100%	0%	23.4	11.5	9.1	55	-	-	18	94%	94%	6%	991	1150	25	4100	6.5	6.5	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-10 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	2.07	14	100%	100%	0%	13.7	6.6	5.8	32	-	-	43	79%	79%	21%	428	821	4.33	3830	1.23	6.5	-	Wilcoxon Rank Sum Test	0.015	**Yes**			
Sandblast	0-10 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	6.5	14	100%	79%	21%	8.00	3.94	2.7	19	-	-	18	94%	94%	6%	345	396	8.3	1400	6.5	6.5	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
Sandblast	0-10 ft	SVOCs	Chrysene	ug/kg	2.43	14	100%	100%	0%	18.3	9.5	6.4	45	-	-	43	88%	86%	14%	962	2170	1.8	12000	2.07	2.52	-	Wilcoxon Rank Sum Test	0.003	**Yes**			
Sandblast	0-10 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	2.465	14	50%	50%	50%	4.36	1.23	2.7	6.9	10	10	43	60%	58%	42%	143	287	1.23	1430	1.17	14.6	-	Wilcoxon Rank Sum Test	0.017	**Yes**			
Sandblast	0-10 ft	SVOCs	Fluoranthene	ug/kg	2.43	14	100%	100%	0%	27.0	14.0	10	66	-	-	43	88%	88%	12%	1970	5260	6.29	28600	2.07	6.5	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	SVOCs	Fluorene	ug/kg	9.9	14	7%	0%	100%	-	-	3.2	3.2	9.9	10	43	65%	37%	63%	69.4	149.0	1.69	779	1.23	340	-	Contingency Table Analysis	0.000	**Yes**			
Sandblast	0-10 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	2.4	14	100%	100%	0%	14.1	7.5	5.2	34	-	-	43	84%	84%	16%	469	920	3.52	4170	1.23	6.5	-	Wilcoxon Rank Sum Test	0.015	**Yes**			
Sandblast	0-10 ft	SVOCs	Naphthalene	ug/kg	6.4	14	43%	0%	100%	1.70	0.27	1.3	2.2	9.9	10	43	56%	30%	70%	25.2	53.7	1.7	256	1.17	340	-	Wilcoxon Rank Sum Test	0.011	**Yes**			
Sandblast	0-10 ft	SVOCs	Phenanthrene	ug/kg	2.475	14	100%	100%	0%	13.2	7.2	5.5	34	-	-	43	91%	88%	12%	705	1320	2.47	6550	2.4	6.5	-	Wilcoxon Rank Sum Test	0.001	**Yes**			
Sandblast	0-10 ft	SVOCs	Pyrene	ug/kg	2.415	14	100%	100%	0%	26.8	13.3	10	64	-	-	43	91%	88%	12%	2080	5770	2.1	32000	2.07	2.52	-	Wilcoxon Rank Sum Test	0.002	**Yes**			
Sandblast	0-10 ft	SVOCs	Total LPAHs	ug/kg	15	14	100%	100%	0%	32	12	20	56	-	-	43	91%	84%	16%	1131	2339	12	13120	14	39	-	Wilcoxon Rank Sum Test	0.010	**Yes**			
Sandblast	0-10 ft	SVOCs	Total HPAHs	ug/kg	19	14	100%	100%	0%	169	83	68	401	-	-	43	91%	91%	9%	8341	19368	20	105200	17	20	-	Wilcoxon Rank Sum Test	0.007	**Yes**			
Pistol Range	0-1 ft	Metals	Antimony	mg/kg	5	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	5	0%	0%	100%	-	-	-	-	5	6	-	Contingency Table Analysis	1.000	**No**			
Pistol Range	0-1 ft	Metals	Arsenic	mg/kg	5	14	100%	7%	93%	3.10	1.26	1.09	5.18	-	-	5	0%	0%	100%	-	-	-	-	5	6	-	Contingency Table Analysis	1.000	**No**			
Pistol Range	0-1 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	14	100%	100%	0%	38.1	14.3	15.6	53.1	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.307	**No**	12.2	11.8	30%
Pistol Range	0-1 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	63	100%	100%	0%	208	286	7.5	1110	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
Pistol Range	0-1 ft	Metals	Mercury	mg/kg	0.06	14	100%	14%	86%	0.0494	0.0091	0.034	0.068	-	-	14	0%	0%	100%	-	-	-	-	0.04	0.06	-	Contingency Table Analysis	1.000	**No**			
Pistol Range	0-1 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	10	100%	100%	0%	23.7	3.8	19	32	-	-	Normal	t-Test (normal)	0.004	**Yes**			
Pistol Range	0-1 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	10	100%	100%	0%	124	42	74	199	-	-	Normal	t-Test (normal)	0.000	**Yes**			
Bulb Slope	0-1 ft	GenChem-TOC	Carbon, Total Organic	%	-	14	100%	100%	0%	4.47	1.20	2.99	7.78	-	-	8	100%	100%	0%	3.56	1.92	1.715	6.92	-	-	Lognormal	t-Test (lognormal)	0.929	**No**	1.49	1.94	43%
Bulb Slope	0-1 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	12	100%	100%	0%	222	165	25	597	-	-	Normal	t-Test (normal)	0.001	**Yes**			
Bulb Slope	0-1 ft	Metals	Mercury	mg/kg	-	14	100%	100%	0%	0.0494	0.0091	0.034	0.068	-	-	12	100%	100%	0%	0.404	0.425	0.05	1.54	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
4 AOPCs	0-1 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	68	100%	100%	0%	7953	5445	1530	24300	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	5335	5139	23%
4 AOPCs	0-1 ft	Metals	Antimony	mg/kg	2.83	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	83	54%	7%	93%	1.39	2.02	0.0895	13.7	0.16	6	-	Wilcoxon Rank Sum Test	0.154	**No**	1.88	1.81	1414%
4 AOPCs	0-1 ft	Metals	Arsenic	mg/kg	5	14	100%	7%	93%	3.10	1.26	1.09	5.18	-	-	84	93%	38%	62%	6.80	11.20	0.613	80.9	1.04	6	-	Wilcoxon Rank Sum Test	0.009	**Yes**			
4 AOPCs	0-1 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	79	100%	100%	0%	80.3	41.2	10.7	242.5	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.996	**No**	40.1	38.6	35%
4 AOPCs	0-1 ft	Metals	Beryllium	mg/kg	0.424	14	100%	79%	21%	0.491	0.091	0.319	0.629	-	-	79	56%	10%	90%	0.303	0.108	0.0587	0.63	0.27	0.472	-	Wilcoxon Rank Sum Test	1.000	**No**	0.106	0.102	21%
4 AOPCs	0-1 ft	Metals	Cadmium	mg/kg	0.261	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	79	86%	82%	18%	1.42	2.32	0.0561	17.3	0.248	0.29	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	68	100%	100%	0%	4457	2571	863	15100	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	2466	2376	34%
4 AOPCs	0-1 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	82	100%	100%	0%	305	544	5.27	2650	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.012	**Yes**			
4 AOPCs	0-1 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	68	100%	100%	0%	12.4	4.5	2.52	24.95	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	4.26	4.10	25%
4 AOPCs	0-1 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	93	100%	100%	0%	62.8	71.4	13.2	494	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.277	**No**	66.9	64.4	165%
4 AOPCs	0-1 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	79	100%	100%	0%	26683	8581	10100	46500	-	-	Lognormal	t-Test (lognormal)	0.998	**No**	8078	7782	26%
4 AOPCs	0-1 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	157	100%	100%	0%	270	368	5.34	3260	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	68	100%	100%	0%	11090	10788	1350	47500	-	-	Lognormal	t-Test (lognormal)	0.397	**No**	9924	9560	122%
4 AOPCs	0-1 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	79	100%	100%	0%	407	144	167	789	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	144	139	22%
4 AOPCs	0-1 ft	Metals	Mercury	mg/kg	0.05	14	100%	36%	64%	0.0494	0.0091	0.034	0.068	-	-	107	68%	45%	55%	0.186	0.458	0.0114	4.15	0.0199	0.11	-	Wilcoxon Rank Sum Test	0.066	**No**	0.432	0.416	844%
4 AOPCs	0-1 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	89	100%	100%	0%	125	220	4.79	1060	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.005	**Yes**			
4 AOPCs	0-1 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	68	100%	100%	0%	642	437	74.9	1870	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	430	415	31%
4 AOPCs	0-1 ft	Metals	Selenium	mg/kg	2.2	14	0%	0%	100%	-	-	-	-	2.1	2.3	79	42%	0%	100%	0.431	0.232	0.175	0.9	0.2	3.54	-	Contingency Table Analysis	0.001	**Yes**			

Figure L-2. Comparison of Upland OU Soils to Reference Area Soils -- MRL Censored

						Reference Area										Site AOPC										Shapiro-Wilk W Test	Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Site AOPC	Depth Group	Analyte Group	Analyte	Unit	Median MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	Distribution	Appropriate Statistical Test	p-value	Significant Higher Conc in Site?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
4 AOPCs	0-1 ft	Metals	Silver	mg/kg	0.51	14	86%	0%	100%	0.0605	0.0400	0.027	0.187	0.065	0.069	79	78%	3%	97%	0.182	0.184	0.0571	1.5	0.2	0.57	-	Wilcoxon Rank Sum Test	0.282	**No**	0.171	0.165	272%
4 AOPCs	0-1 ft	Metals	Sodium	mg/kg	228	14	100%	21%	79%	171	75	69.6	324	-	-	68	34%	34%	66%	327	95	264	570	103	1130	-	Wilcoxon Rank Sum Test	0.102	**No**	91.7	88.3	52%
4 AOPCs	0-1 ft	Metals	Thallium	mg/kg	0.28	14	57%	0%	100%	0.145	0.023	0.128	0.203	0.042	0.103	79	61%	1%	99%	0.102	0.054	0.0288	0.378	0.2	0.589	-	Wilcoxon Rank Sum Test	0.348	**No**	0.0509	0.0490	34%
4 AOPCs	0-1 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	68	100%	100%	0%	44.1	19.5	6.89	84.7	-	-	Normal	t-Test (normal)	1.000	**No**	18.7	18.0	23%
4 AOPCs	0-1 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	89	100%	100%	0%	165	167	30.3	1160	-	-	Lognormal	t-Test (lognormal)	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Acenaphthene	ug/kg	10	14	64%	0%	100%	1.75	0.63	1.2	3.4	9.9	10	58	76%	64%	36%	160	380	1.5	2600	1.23	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Acenaphthylene	ug/kg	12.3	14	7%	0%	100%	-	-	1.6	1.6	9.9	10	58	36%	22%	78%	13.6	21.4	1.39	87.7	1.17	340	-	Contingency Table Analysis	0.029	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Anthracene	ug/kg	29.9	14	86%	0%	100%	2.47	0.94	1.5	4.9	9.9	10	58	90%	59%	41%	263	471	1.72	2700	1.41	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Benzo(a)anthracene	ug/kg	26.125	14	100%	7%	93%	14.0	7.2	4.6	34	-	-	58	93%	83%	17%	1780	4520	3.96	32000	2.07	305	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Benzo(a)pyrene	ug/kg	49.8	14	100%	0%	100%	18.2	9.5	7.7	45	-	-	58	95%	76%	24%	1880	4660	7.49	33000	2.07	152	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	49.8	14	100%	7%	93%	23.4	11.5	9.1	55	-	-	37	97%	92%	8%	3280	10500	25	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	1.78	14	100%	100%	0%	13.7	6.6	5.8	32	-	-	58	86%	86%	14%	977	2520	6.89	18000	1.23	168	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	49.8	14	100%	0%	100%	8.00	3.94	2.7	19	-	-	37	97%	89%	11%	2410	10500	8.3	65000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Chrysene	ug/kg	25.935	14	100%	7%	93%	18.3	9.5	6.4	45	-	-	58	97%	84%	16%	1920	4500	6.36	32000	2.07	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	10	14	50%	0%	100%	4.36	1.23	2.7	6.9	10	10	58	72%	69%	31%	364	1300	1.23	9900	1.17	1800	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Fluoranthene	ug/kg	49.8	14	100%	7%	93%	27.0	14.0	10	66	-	-	58	95%	79%	21%	3360	8060	8.47	54000	2.07	152	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Fluorene	ug/kg	10	14	7%	0%	100%	-	-	3.2	3.2	9.9	10	58	67%	52%	48%	94.8	186.0	1.69	1200	1.23	340	-	Contingency Table Analysis	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	25.935	14	100%	7%	93%	14.1	7.5	5.2	34	-	-	58	90%	76%	24%	1090	2730	3.68	19000	1.23	168	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Naphthalene	ug/kg	17.3	14	43%	0%	100%	1.70	0.27	1.3	2.2	9.9	10	58	52%	31%	69%	57.6	153.0	1.7	823	1.17	340	-	Wilcoxon Rank Sum Test	0.009	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Phenanthrene	ug/kg	49.8	14	100%	0%	100%	13.2	7.2	5.5	34	-	-	58	98%	71%	29%	1090	1910	5.64	12000	49.8	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Pyrene	ug/kg	25.935	14	100%	50%	50%	26.8	13.3	10	64	-	-	58	97%	91%	9%	3190	6750	10	40000	2.07	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Total LPAHs	ug/kg	299	14	100%	0%	100%	32	12	20	56	-	-	58	98%	57%	43%	1753	2956	12	18674	299	299	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-1 ft	SVOCs	Total HPAHs	ug/kg	257	14	100%	7%	93%	169	83	68	401	-	-	58	97%	83%	17%	18219	50008	41	367900	17	498	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	87	100%	100%	0%	8912	5551	1530	24300	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	5449	5249	23%
4 AOPCs	0-3 ft	Metals	Antimony	mg/kg	2.9	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	102	60%	6%	94%	1.26	1.86	0.07	13.7	0.16	6	-	Wilcoxon Rank Sum Test	0.180	**No**	1.75	1.69	1319%
4 AOPCs	0-3 ft	Metals	Arsenic	mg/kg	5	14	100%	7%	93%	3.10	1.26	1.09	5.18	-	-	103	94%	42%	58%	6.55	10.10	0.613	80.9	1.04	6	-	Wilcoxon Rank Sum Test	0.005	**Yes**			
4 AOPCs	0-3 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	98	100%	100%	0%	81.6	39.0	10.7	242.5	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.996	**No**	38.3	36.9	34%
4 AOPCs	0-3 ft	Metals	Beryllium	mg/kg	0.421	14	100%	79%	21%	0.491	0.091	0.319	0.629	-	-	98	62%	15%	85%	0.324	0.112	0.0587	0.63	0.27	0.472	-	Wilcoxon Rank Sum Test	1.000	**No**	0.110	0.106	22%
4 AOPCs	0-3 ft	Metals	Cadmium	mg/kg	0.27	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	98	86%	79%	21%	1.29	2.13	0.0561	17.3	0.248	0.311	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	87	100%	100%	0%	4991	2604	863	15100	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	2516	2424	34%
4 AOPCs	0-3 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	101	100%	100%	0%	279	531	5.27	2650	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.014	**Yes**			
4 AOPCs	0-3 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	87	100%	100%	0%	13.4	5.3	2.52	41	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.999	**No**	5.03	4.85	29%
4 AOPCs	0-3 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	112	100%	100%	0%	64.0	71.8	13.2	494	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.124	**No**	68.0	65.5	168%
4 AOPCs	0-3 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	98	100%	100%	0%	27150	8537	10100	51000	-	-	Lognormal	t-Test (lognormal)	0.996	**No**	8126	7828	26%
4 AOPCs	0-3 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	182	100%	100%	0%	274	379	5.34	3260	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	87	100%	100%	0%	11365	12218	9.75	77700	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.586	**No**	11424	11005	141%
4 AOPCs	0-3 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	98	100%	100%	0%	434	199	167	1712.5	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	193	186	30%
4 AOPCs	0-3 ft	Metals	Mercury	mg/kg	0.05	14	100%	36%	64%	0.0494	0.0091	0.034	0.068	-	-	126	71%	44%	56%	0.166	0.425	0.0114	4.15	0.0199	0.11	-	Wilcoxon Rank Sum Test	0.086	**No**	0.404	0.390	790%
4 AOPCs	0-3 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	108	100%	100%	0%	128	253	4.79	1610	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.003	**Yes**			
4 AOPCs	0-3 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	87	100%	100%	0%	646	399	74.9	1870	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	398	383	29%
4 AOPCs	0-3 ft	Metals	Selenium	mg/kg	2.3	14	0%	0%	100%	-	-	-	-	2.1	2.3	98	49%	0%	100%	0.464	0.233	0.175	0.9	0.2	4.01	-	Contingency Table Analysis	0.000	**Yes**			
4 AOPCs	0-3 ft	Metals	Silver	mg/kg	0.51	14	86%	0%	100%	0.0605	0.0400	0.027	0.187	0.065	0.069	98	83%	3%	97%	0.176	0.178	0.045	1.5	0.2	0.57	-	Wilcoxon Rank Sum Test	0.260	**No**	0.168	0.162	267%
4 AOPCs	0-3 ft	Metals	Sodium	mg/kg	235	14	100%	21%	79%	171	75	69.6	324	-	-	87	41%	37%	63%	277	127	173	570	103	1130	-	Wilcoxon Rank Sum Test	0.074	**No**	121	117	68%
4 AOPCs	0-3 ft	Metals	Thallium	mg/kg	0.28	14	57%	0%	100%	0.145	0.023	0.128	0.203	0.042	0.103	98	68%	1%	99%	0.109	0.052	0.0288	0.378	0.2	0.589	-	Wilcoxon Rank Sum Test	0.363	**No**	0.0495	0.0477	33%
4 AOPCs	0-3 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	87	100%	100%	0%	47.4	19.6	6.89	89.1	-	-	Normal	t-Test (normal)	1.000	**No**	18.9	18.2	23%
4 AOPCs	0-3 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	108	100%	100%	0%	158	183	30.3	1160	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Acenaphthene	ug/kg	10	14	64%	0%	100%	1.75	0.63	1.2	3.4	9.9	10	73	77%	62%	38%	257	598	1.1	3200	1.23	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Acenaphthylene	ug/kg	10	14	7%	0%	100%	-	-	1.6	1.6	9.9	10	73	40%	27%	73%	18.9	40.4	1.39	295	1.17	340	-	Contingency Table Analysis	0.015	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Anthracene	ug/kg	9.9	14	86%	0%	100%	2.47	0.94	1.5	4.9	9.9	10	73	88%	73%	27%	440	1090	1.72	8440	1.41	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Benzo(a)anthracene	ug/kg	2.52	14	100%	100%	0%	14.0	7.2	4.6	34	-	-	73	90%	90%	10%	2470	5430	3.96	32000	2.07	305	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Benzo(a)pyrene	ug/kg	4.51	14	100%	100%	0%	18.2	9.5	7.7	45	-	-	73	92%	92%	8%	2720	6020	7.49	34000	2.07	152	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	28.15	14	100%	21%	79%	23.4	11.5	9.1	55	-	-	46	96%	91%	9%	3450	9690	25	65000	6.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	2.295	14	100%	100%	0%	13.7	6.6	5.8	32	-	-	73	86%	86%	14%	1380	3140	4.33	18000	1.23	168	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	28.15	14	100%	0%	100%	8.00	3.94	2.7	19	-	-	46	96%	87%	13%	2230	9420	8.3	65000	6.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Chrysene	ug/kg	2.51	14	100%	100%	0%	18.3	9.5	6.4	45	-	-	73	95%	93%	7%	2730	5960	1.8	35300	2.07	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	10	14	50%	0%	100%	4.36	1.23	2.7	6.9	10	10	73	74%	68%	32%	416	1210	1.23	9900	1.17	1800	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Fluoranthene	ug/kg	6.5	14	100%	100%	0%	27.0	14.0	10	66	-	-	73	93%	92%	8%	4660	9770	6.29	54000	2.07	152	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Fluorene	ug/kg	10	14	7%	0%	100%	-	-	3.2	3.2	9.9	10	73	68%	52%	48%	132	265	1.69	1610	1.23	340	-	Contingency Table Analysis	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	4.51	14	100%	100%	0%	14.1	7.5	5.2	34	-	-	73	89%	86%	14%	1610	3640	3.52	20000	1.23	168	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Naphthalene	ug/kg	10	14	43%	0%	100%	1.70	0.27	1.3	2.2	9.9	10	73	56%	36%	64%	56.7	141.0	1.7	823	1.17	340	-	Wilcoxon Rank Sum Test	0.005	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Phenanthrene	ug/kg	6.5	14	100%	86%	14%	13.2	7.2	5.5	34	-	-	73	96%	92%	8%	1550	3150	2.47	21900	2.52	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Pyrene	ug/kg	2.52	14	100%	100%	0%	26.8	13.3	10	64	-	-	73	96%	95%	5%	4940	10600	2.1	67100	2.07	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Total LPAHs	ug/kg	39	14	100%	21%	79%	32	12	20	56	-	-	73	96%	81%	19%	2507	5049	12	34767	15	299	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-3 ft	SVOCs	Total HPAHs	ug/kg	20	14	100%	100%	0%	169	83	68	401	-	-	73	96%	95%	5%	24520	55546	20	367900	17	498	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	Metals	Aluminum	mg/kg	-	14	100%	100%	0%	22746	4724	15900	33200	-	-	104	100%	100%	0%	9071	5513	1530	24300	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	5430	5231	23%
4 AOPCs	0-10 ft	Metals	Antimony	mg/kg	2.9	14	100%	0%	100%	0.128	0.026	0.07	0.18	-	-	119	66%	8%	92%	1.36	1.93	0.07	13.7	0.16	6	-	Wilcoxon Rank Sum Test	0.146	**No**	1.83	1.76	1380%
4 AOPCs	0-10 ft	Metals	Arsenic	mg/kg	5	14	100%	7%	93%	3.10	1.26	1.09	5.18	-	-	120	95%	39%	61%	6.20	9.46	0.613	80.9	1.04	6	-	Wilcoxon Rank Sum Test	0.007	**Yes**			
4 AOPCs	0-10 ft	Metals	Barium	mg/kg	-	14	100%	100%	0%	110	33	57.4	182	-	-	115	100%	100%	0%	83.1	38.0	10.7	242.5	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.994	**No**	37.5	36.1	33%
4 AOPCs	0-10 ft	Metals	Beryllium	mg/kg	0.418	14	100%	79%	21%	0.491	0.091	0.319	0.629	-	-	115	63%	13%	87%	0.317	0.108	0.0587	0.63	0.27	0.472	-	Wilcoxon Rank Sum Test	1.000	**No**	0.106	0.103	21%
4 AOPCs	0-10 ft	Metals	Cadmium	mg/kg	0.27	14	100%	7%	93%	0.162	0.059	0.099	0.3395	-	-	115	85%	79%	21%	1.29	1.99	0.0561	17.3	0.248	0.311	-	Wilcoxon Rank Sum Test	0.000	**Yes**			

Figure L-2. Comparison of Upland OU Soils to Reference Area Soils -- MRL Censored

						Reference Area										Site AOPC										Shapiro-Wilk W Test	Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Site AOPC	Depth Group	Analyte Group	Analyte	Unit	Median MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	Distribution	Appropriate Statistical Test	p-value	Significant Higher Conc in Site?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
4 AOPCs	0-10 ft	Metals	Calcium	mg/kg	-	14	100%	100%	0%	7086	1829	3510	9120	-	-	104	100%	100%	0%	4959	2435	863	15100	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	2375	2288	32%
4 AOPCs	0-10 ft	Metals	Chromium	mg/kg	-	14	100%	100%	0%	21.8	3.5	15.5	27.3	-	-	118	100%	100%	0%	279	554	5.27	2650	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.015	**Yes**			
4 AOPCs	0-10 ft	Metals	Cobalt	mg/kg	-	14	100%	100%	0%	16.5	3.1	9.66	19.9	-	-	104	100%	100%	0%	13.8	6.1	2.52	42.3	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.998	**No**	5.80	5.59	34%
4 AOPCs	0-10 ft	Metals	Copper	mg/kg	-	14	100%	100%	0%	39.0	9.7	22.8	58.2	-	-	129	100%	100%	0%	64.1	71.4	13.2	494	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.159	**No**	68.0	65.6	168%
4 AOPCs	0-10 ft	Metals	Iron	mg/kg	-	14	100%	100%	0%	29829	3868	22900	37000	-	-	115	100%	100%	0%	27151	8743	10100	51000	-	-	Lognormal	t-Test (lognormal)	0.997	**No**	8375	8068	27%
4 AOPCs	0-10 ft	Metals	Lead	mg/kg	-	14	100%	100%	0%	17.7	4.2	12.5	26.5	-	-	199	100%	100%	0%	280	377	5.235	3260	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	Metals	Magnesium	mg/kg	-	14	100%	100%	0%	7820	2498	3710	12000	-	-	104	100%	100%	0%	11897	14967	9.75	88300	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.672	**No**	14128	13610	174%
4 AOPCs	0-10 ft	Metals	Manganese	mg/kg	-	14	100%	100%	0%	627	140	415	920.5	-	-	115	100%	100%	0%	443	202	146	1712.5	-	-	Lognormal	t-Test (lognormal)	1.000	**No**	196	189	30%
4 AOPCs	0-10 ft	Metals	Mercury	mg/kg	0.05	14	100%	36%	64%	0.0494	0.0091	0.034	0.068	-	-	143	75%	45%	55%	0.167	0.409	0.0114	4.15	0.0199	0.11	-	Wilcoxon Rank Sum Test	0.067	**No**	0.391	0.377	764%
4 AOPCs	0-10 ft	Metals	Nickel	mg/kg	-	14	100%	100%	0%	18.7	4.3	11.5	26.1	-	-	125	100%	100%	0%	133	284	4.79	1760	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.003	**Yes**			
4 AOPCs	0-10 ft	Metals	Potassium	mg/kg	-	14	100%	100%	0%	1334	392	572	1930	-	-	104	100%	100%	0%	639	378	74.9	1870	-	-	Non-parametric	Wilcoxon Rank Sum Test	1.000	**No**	379	365	27%
4 AOPCs	0-10 ft	Metals	Selenium	mg/kg	2.2	14	0%	0%	100%	-	-	-	-	2.1	2.3	115	50%	0%	100%	0.413	0.234	0.106	0.9	0.2	4.01	-	Contingency Table Analysis	0.000	**Yes**			
4 AOPCs	0-10 ft	Metals	Silver	mg/kg	0.51	14	86%	0%	100%	0.0605	0.0400	0.027	0.187	0.065	0.069	115	85%	6%	94%	0.214	0.263	0.045	1.52	0.2	0.57	-	Wilcoxon Rank Sum Test	0.175	**No**	0.250	0.240	397%
4 AOPCs	0-10 ft	Metals	Sodium	mg/kg	235.5	14	100%	21%	79%	171	75	69.6	324	-	-	104	37%	31%	69%	239	139	114	570	103	1130	-	Wilcoxon Rank Sum Test	0.153	**No**	133	128	75%
4 AOPCs	0-10 ft	Metals	Thallium	mg/kg	0.28	14	57%	0%	100%	0.145	0.023	0.128	0.203	0.042	0.103	115	73%	1%	99%	0.110	0.051	0.0288	0.378	0.2	0.589	-	Wilcoxon Rank Sum Test	0.373	**No**	0.0492	0.0474	33%
4 AOPCs	0-10 ft	Metals	Vanadium	mg/kg	-	14	100%	100%	0%	78.8	13.5	43	99.3	-	-	104	100%	100%	0%	48.7	20.0	6.89	93.4	-	-	Normal	t-Test (normal)	1.000	**No**	19.3	18.6	24%
4 AOPCs	0-10 ft	Metals	Zinc	mg/kg	-	14	100%	100%	0%	58.8	7.0	45.6	68.5	-	-	125	100%	100%	0%	161	175	30.3	1160	-	-	Non-parametric	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Acenaphthene	ug/kg	10	14	64%	0%	100%	1.75	0.63	1.2	3.4	9.9	10	87	76%	62%	38%	288	634	1.1	3200	1.23	1440	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Acenaphthylene	ug/kg	10	14	7%	0%	100%	-	-	1.6	1.6	9.9	10	87	40%	30%	70%	19.1	38.1	1.39	295	1.17	340	-	Contingency Table Analysis	0.013	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Anthracene	ug/kg	8.2	14	86%	0%	100%	2.47	0.94	1.5	4.9	9.9	10	87	86%	75%	25%	640	1450	1.72	8440	1.41	180	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Benzo(a)anthracene	ug/kg	2.5	14	100%	100%	0%	14.0	7.2	4.6	34	-	-	87	90%	90%	10%	3290	6450	3.96	32000	2.07	305	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Benzo(a)pyrene	ug/kg	2.51	14	100%	100%	0%	18.2	9.5	7.7	45	-	-	87	91%	91%	9%	3270	6160	7.49	34000	2.07	152	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Benzo(b)fluoranthene	ug/kg	28.15	14	100%	21%	79%	23.4	11.5	9.1	55	-	-	46	96%	91%	9%	3450	9690	25	65000	6.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Benzo(g,h,i)perylene	ug/kg	2.415	14	100%	100%	0%	13.7	6.6	5.8	32	-	-	87	86%	86%	14%	1650	3170	4.33	18000	1.23	168	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Benzo(k)fluoranthene	ug/kg	28.15	14	100%	0%	100%	8.00	3.94	2.7	19	-	-	46	96%	87%	13%	2230	9420	8.3	65000	6.5	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Chrysene	ug/kg	2.465	14	100%	100%	0%	18.3	9.5	6.4	45	-	-	87	93%	92%	8%	3350	6370	1.8	35300	2.07	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Dibenz(a,h)anthracene	ug/kg	10	14	50%	0%	100%	4.36	1.23	2.7	6.9	10	10	87	71%	67%	33%	399	1110	1.23	9900	1.17	1800	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Fluoranthene	ug/kg	2.52	14	100%	100%	0%	27.0	14.0	10	66	-	-	87	92%	92%	8%	5830	10400	6.29	54000	2.07	152	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Fluorene	ug/kg	10	14	7%	0%	100%	-	-	3.2	3.2	9.9	10	87	69%	55%	45%	160	300	1.69	1610	1.23	340	-	Contingency Table Analysis	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Indeno(1,2,3-cd)pyrene	ug/kg	2.475	14	100%	100%	0%	14.1	7.5	5.2	34	-	-	87	89%	89%	11%	1940	3710	3.52	20000	1.23	168	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Naphthalene	ug/kg	10	14	43%	0%	100%	1.70	0.27	1.3	2.2	9.9	10	87	55%	38%	62%	71.3	219.0	1.7	1710	1.17	340	-	Wilcoxon Rank Sum Test	0.003	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Phenanthrene	ug/kg	4.51	14	100%	100%	0%	13.2	7.2	5.5	34	-	-	87	93%	92%	8%	1780	3410	2.47	21900	2.4	11400	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Pyrene	ug/kg	2.43	14	100%	100%	0%	26.8	13.3	10	64	-	-	87	94%	93%	7%	6370	11500	2.1	67100	2.07	49.8	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Total LPAHs	ug/kg	15	14	100%	100%	0%	32	12	20	56	-	-	87	94%	91%	9%	3009	5715	12	34767	14	299	-	Wilcoxon Rank Sum Test	0.000	**Yes**			
4 AOPCs	0-10 ft	SVOCs	Total HPAHs	ug/kg	19	14	100%	100%	0%	169	83	68	401	-	-	87	94%	94%	6%	29117	56080	20	367900	17	498	-	Wilcoxon Rank Sum Test	0.000	**Yes**			

Table L-3
Upland OU Monitoring Well Groundwater Results Compared to Reference Area

	Landfill AOPC Groundwater		Landfill AOPC Seep Water		Sandblast Area AOPC Groundwater		Reference Well (MW-10)	
	Minimum Value	Maximum Value	Minimum Value	Maximum Value	Minimum Value	Maximum Value	Minimum Value	Maximum Value
Total Metals (µg/L)								
Aluminum	-	-	-	-	-	-	**6.45**	**211**
Antimony	**0.294 J**	**3.89**	-	1.00 U	-	-	**0.0250 J**	**0.0800**
Arsenic	**0.138 J**	**21.3**	**0.500**	**12.8**	**0.540**	**11.6**	**1.23**	**1.68**
Barium	**7.15**	**304**	-	**74.2**	-	-	**17.3**	**26.5**
Beryllium	0.0142 U	**0.435 J**	-	1.00 U	-	-	**0.0100 J**	**0.0100 J**
Cadmium	0.00710 U	**5.60**	-	1.00 U	-	-	0.00500 U	**0.0490**
Calcium	-	-	-	-	-	-	**29,150**	**30,950**
Chromium	1.00 U	**18.5**	-	**1.05**	-	-	**0.145 J**	**3.98 J**
Cobalt	-	-	-	-	-	-	**0.0710**	**0.323**
Copper	**2.33**	**201**	-	**2.72**	-	-	**0.125**	**1.12**
Iron	**9.40 J**	**42,900**	**271**	**121,000**	**12.9 J**	**1,500**	37.0 U	**451 J**
Lead	0.00600 U	**78.2**	**0.113**	**25.7**	-	-	**0.102**	**0.248**
Magnesium	-	-	-	-	-	-	**7,620**	**8,315**
Manganese	**0.810**	**5,385**	**8.90**	**3,240**	-	-	**204**	**259**
Mercury	**0.0300 J**	**0.330**	**0.0300**	**0.0300 J**	-	-	0.0300 U	0.0500 U
Nickel	**0.850 J**	**117**	-	**2.32**	-	-	0.500 U	**6.62**
Potassium	-	-	-	-	-	-	**4,705**	**4,955**
Selenium	0.385 U	**32.9**	-	**1.11**	-	-	0.400 U	0.500 U
Silver	**0.0810 J**	**0.658**	-	1.00 U	-	-	**0.00900 J**	**0.00900 J**
Sodium	-	-	-	-	-	-	**4,940**	**5,625**
Thallium	**0.115 J**	**0.323 J**	-	1.00 U	-	-	0.00500 U	0.00800 U
Vanadium	-	-	-	-	0.0700 U	**5.90 J**	0.0700 U	**1.55 J**
Zinc	**4.27**	**2,655**	-	10.0 U	-	-	**1.75**	**8.28 J**
Dissolved Metals (µg/L)								
Aluminum	-	-	-	-	-	-	**2.00 J**	**2.60**
Antimony	50.0 U	50.0 U	-	**2.28**	-	-	0.0100 U	**0.0500 J**
Arsenic	**0.220 J**	**19.3**	**0.500**	**1.00**	**0.510**	**8.99**	**1.13**	**1.55**
Barium	**21.2**	**134**	-	**277**	-	-	**15.3**	**22.9**
Beryllium	5.00 U	5.00 U	-	1.00 U	-	-	0.00800 U	0.0200 U
Cadmium	5.00 U	5.00 U	-	1.00 U	-	-	0.00500 U	**0.0425**
Calcium	**9,510**	**172,000**	**22,600**	**76,400**	**6,690**	**44,300**	**28,950**	**30,100**
Chromium	10.0 U	10.0 U	-	1.00 U	-	-	**0.0600 J**	**0.290**
Cobalt	-	-	-	-	-	-	**0.0630**	**0.139**
Copper	10.0 U	10.0 U	-	**1.09**	-	-	**0.0800 J**	**0.315**
Iron	4.00 U	**35,400**	**9.70 J**	**3,210**	4.00 U	**270**	**9.80 J**	**24.9**
Lead	0.00600 U	**3.50**	**0.00800 J**	**0.0650**	-	-	**0.00600 J**	**0.0220 J**
Magnesium	**1,210**	**25,800**	**5,070**	**16,600**	**883**	**14,000**	**7,360**	**8,085**
Manganese	**0.120**	**5,545**	0.140 U	**1,480 J**	-	-	**187**	**228**
Mercury	0.0300 U	0.200 U	0.0300 U	1.00 U	-	-	0.0300 U	0.0500 U
Nickel	10.0 U	**18.7**	-	**2.22**	-	-	0.500 U	**1.41**
Potassium	**808 J**	**12,900**	**771 J**	**4,160**	**782 J**	**2,610**	**4,710**	**4,880**
Selenium	5.00 U	5.00 U	-	1.00 U	-	-	0.400 U	0.500 U
Silver	10.0 U	10.0 U	-	1.00 U	-	-	0.00900 U	**0.117**
Sodium	**4,040**	**740,000**	**6,680**	**19,700**	**6,860**	**89,400**	**4,825**	**4,975**
Thallium	5.00 U	5.00 U	-	1.00 U	-	-	0.00500 U	0.00800 U
Vanadium	-	-	-	-	0.0700 U	**3.10 J**	0.0700 U	0.800 U
Zinc	10.0 U	**197**	-	**85.6**	-	-	**1.15 J**	**3.15**
Total Petroleum Hydrocarbons (µg/L)								
Diesel Range Organics	12.0 U	**1,800**	13.0 U	**130**	11.0 U	**18.0 J**	-	14.0 U
Residual Range Organics	21.0 U	**1,900**	23.0 U	**130**	19.0 U	120 U	-	24.0 U
Gasoline Range Organics	**13.0 J**	**430**	13.0 U	250 U	13.0 U	**23.5 J**	-	13.0 U
Buyltins (µg/L)								
Dibutyltin	0.00111 U	**0.447 J**	0.00730 U	0.00810 U	-	-	-	0.00810 U
Monobutyltin	0.00105 U	**0.240 J**	0.0110 U	0.0290 U	0.0110 U	**0.0260 J**	-	**0.0345 J**
Total Volatile Organic Compounds (µg/L)								
Chloroform	0.0820 U	**3.70**	0.0820 U	**2.80**	0.0820 U	**0.180 J**	-	0.0820 U
Tetrachloroethene (PCE)	0.0970 U	**8.78**	0.0970 U	**4.40**	0.0970 U	**6.20**	-	0.0970 U
Vinyl Chloride	0.0440 U	**0.955**	0.0440 U	1.00 U	0.0440 U	**4.10**	-	0.0440 U
Total Semivolatile Organic Compounds (µg/L)								
1,4-Dichlorobenzene	0.0150 U	**0.0601 J**	0.0290 U	4.76 UJ	-	-	-	0.0330 U
4-Nitrophenol	0.0290 U	48.0 U	0.280 U	4.76 U	-	-	-	**0.320**
Phenol	0.0320 U	**0.382 J**	0.0630 U	4.76 U	-	-	-	0.0700 U
Low Molecular Weight Polycyclic Aromatic Hydrodarbons (LPAHs) (µg/L)								
Phenanthrene	0.00220 UJ	**3.90**	0.0220 U	4.76 UJ	0.0220 U	**0.0840 J**	-	0.0250 U
High Molecular Weight Polycyclic Aromatic Hydrodarbons (HPAHs) (µg/L)								
Benzo(b)fluoranthene	9.40 U	10.0 U	-	4.76 UJ	0.0170 U	**0.0180 J**	-	**0.0250 J**
Benzo(k)fluoranthene	9.40 U	10.0 U	-	4.76 UJ	0.0240 U	0.0280 U	-	0.0270 U

Notes:
Analytes shown include all compounds that were analyzed in one r more samples from MW-10.
µg/L = microgram per liter
mg/L = milligram per liter
MDL = method detection limit
- = Not Analyzed
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL.
UJ = The analyte was not detected. The reported MDL is an estimate.
bold = analyte detected above MDL.
When only one result was available for a given set of data, this value is shown under "Maximum Value" only.
= The AOPC value exceeds the Reference Area maximum result

Table L-4. Statistical Comparison of Forebay Data to Reference Area Data -- MDL Censored

							Reference Area										Forebay Area										Shapiro-Wilk W Test					Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Medium	Basis	Analyte Group	IUPAC #	Analyte	Unit	Median MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	Ref Normality Test p-value	Ref Log-normality Test p-value	Site Normality Test p-value	Site Log-normality Test p-value	Distribution	Appropriate Statistical Test	Comparison p-value	Significant Higher Conc in Forebay?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Sediment	D	Metals		Aluminum	mg/Kg	-	18	100%	100%	0%	17328	9005	7380	33500	-	-	19	100%	100%	0%	13279	2993	9000	22900	-	-	0.011	0.064	0.008	0.317	Lognormal	t-Test (lognormal)	**0.891**	**No**	6633	5604	32%
Sediment	D	Metals		Antimony	mg/Kg	0.04	18	100%	100%	0%	0.264	0.091	0.15	0.52	-	-	19	95%	95%	5%	0.155	0.065	0.04	0.28	0.04	0.04	-	-	-	-	-	Wilcoxon Rank Sum Test	**1.000**	**No**	0.0790	0.0667	25%
Sediment	D	Metals		Arsenic	mg/Kg	-	18	100%	100%	0%	4.19	0.87	3.03	6.04	-	-	19	100%	100%	0%	3.12	1.00	1.4	5.39	-	-	0.031	0.108	0.025	0.217	Lognormal	t-Test (lognormal)	**1.000**	**No**	0.939	0.793	19%
Sediment	D	Metals		Barium	mg/Kg	-	18	100%	100%	0%	167	67	86.3	312	-	-	19	100%	100%	0%	121	36	53.1	202	-	-	0.037	0.085	0.269	0.170	Lognormal	t-Test (lognormal)	**0.989**	**No**	53.4	45.1	27%
Sediment	D	Metals		Beryllium	mg/Kg	-	18	100%	100%	0%	0.437	0.177	0.194	0.748	-	-	19	100%	100%	0%	0.362	0.092	0.215	0.597	-	-	0.047	0.116	0.547	0.754	Lognormal	t-Test (lognormal)	**0.884**	**No**	0.140	0.118	27%
Sediment	D	Metals		Cadmium	mg/Kg	0.118	18	100%	100%	0%	0.476	0.111	0.262	0.748	-	-	19	89%	89%	11%	0.453	0.181	0.175	0.719	0.115	0.121	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.670**	**No**	0.151	0.128	27%
Sediment	D	Metals		Chromium	mg/Kg	-	18	100%	100%	0%	19.8	4.6	12.8	27.3	-	-	19	100%	100%	0%	19.9	5.2	10.1	33.5	-	-	0.190	0.353	0.150	0.395	Normal	t-Test (normal)	**0.462**	**No**	4.90	4.14	21%
Sediment	D	Metals		Cobalt	mg/Kg	-	18	100%	100%	0%	9.66	3.12	5.68	15.2	-	-	19	100%	100%	0%	8.59	2.10	4.82	15.1	-	-	0.077	0.137	0.019	0.281	Lognormal	t-Test (lognormal)	**0.841**	**No**	2.64	2.23	23%
Sediment	D	Metals		Copper	mg/Kg	-	18	100%	100%	0%	25.6	13.8	8.22	47.8	-	-	19	100%	100%	0%	20.5	4.7	11.3	33.1	-	-	0.015	0.051	0.255	0.490	Lognormal	t-Test (lognormal)	**0.749**	**No**	10.2	8.6	34%
Sediment	D	Metals		Lead	mg/Kg	-	18	100%	100%	0%	11.6	1.6	8.65	15.1	-	-	19	100%	100%	0%	8.93	3.11	3.3	16.8	-	-	0.642	0.869	0.142	0.049	Normal	t-Test (normal)	**0.999**	**No**	2.50	2.12	18%
Sediment	D	Metals		Mercury	mg/Kg	-	18	100%	100%	0%	0.129	0.048	0.041	0.225	-	-	19	100%	100%	0%	0.132	0.111	0.008	0.373	-	-	0.953	0.321	0.049	0.233	Lognormal	t-Test (lognormal)	**0.902**	**No**	0.0862	0.0729	56%
Sediment	D	Metals		Nickel	mg/Kg	-	18	100%	100%	0%	14.6	3.6	9.87	25.6	-	-	19	100%	100%	0%	15.5	9.1	6.39	51.5	-	-	0.015	0.391	0.000	0.001	Non-parametric	Wilcoxon Rank Sum Test	**0.608**	**No**	7.03	5.94	41%
Sediment	D	Metals		Thallium	mg/Kg	0.1175	18	100%	100%	0%	0.244	0.062	0.145	0.36	-	-	19	79%	79%	21%	0.173	0.028	0.135	0.218	0.108	0.132	-	-	-	-	-	Wilcoxon Rank Sum Test	**1.000**	**No**	0.0473	0.0400	16%
Sediment	D	Metals		Vanadium	mg/Kg	-	18	100%	100%	0%	45.0	14.3	25.7	76.9	-	-	19	100%	100%	0%	40.0	8.2	27.5	59.3	-	-	0.219	0.778	0.162	0.582	Normal	t-Test (normal)	**0.901**	**No**	11.6	9.8	22%
Sediment	D	Metals		Zinc	mg/Kg	-	18	100%	100%	0%	87.6	10.1	70.2	109	-	-	19	100%	100%	0%	81.8	18.2	50.3	113	-	-	0.978	0.987	0.323	0.109	Normal	t-Test (normal)	**0.883**	**No**	14.8	12.5	14%
Sediment	D	NWTPH-Dx		Diesel Range Organics	mg/Kg	-	18	100%	100%	0%	15.7	8.2	7	31	-	-	19	100%	100%	0%	15.7	12.7	2.6	54	-	-	0.003	0.125	0.006	0.586	Lognormal	t-Test (lognormal)	**0.803**	**No**	10.8	9.1	58%
Sediment	D	NWTPH-Dx		Residual Range Organics	mg/Kg	150	18	72%	0%	100%	48.9	20.4	29	100	150	180	19	63%	26%	74%	95.3	48.8	17	180	130	180	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.044**	**Yes**			
Sediment	D	PCB Aroclors		Aroclor 1016	ug/Kg	1.7	18	0%	0%	100%	-	-	-	-	1.7	13	19	0%	0%	100%	-	-	-	-	1.7	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1221	ug/Kg	1.7	18	0%	0%	100%	-	-	-	-	1.7	11	19	0%	0%	100%	-	-	-	-	1.7	29	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1232	ug/Kg	1.7	18	0%	0%	100%	-	-	-	-	1.7	12	19	0%	0%	100%	-	-	-	-	1.7	18	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1242	ug/Kg	1.7	18	0%	0%	100%	-	-	-	-	1.7	16	19	0%	0%	100%	-	-	-	-	1.7	5.7	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1248	ug/Kg	1.7	18	0%	0%	100%	-	-	-	-	1.7	1.8	19	0%	0%	100%	-	-	-	-	1.7	4	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1254	ug/Kg	1.7	18	0%	0%	100%	-	-	-	-	1.7	1.8	19	11%	11%	89%	5.78	5.00	4.6	27	1.7	2.6	-	-	-	-	-	Contingency Table Analysis	**0.257**	**No**			
Sediment	D	PCB Aroclors		Aroclor 1260	ug/Kg	1.7	18	0%	0%	100%	-	-	-	-	1.7	1.8	19	0%	0%	100%	-	-	-	-	1.7	4.7	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1262	ug/Kg	1.7	18	0%	0%	100%	-	-	-	-	1.7	1.8	19	0%	0%	100%	-	-	-	-	1.7	1.7	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1268	ug/Kg	1.7	18	0%	0%	100%	-	-	-	-	1.7	1.8	19	0%	0%	100%	-	-	-	-	1.7	1.7	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	SVOCs		Acenaphthene	ug/Kg	1	18	0%	0%	100%	-	-	-	-	1	1.1	19	0%	0%	100%	-	-	-	-	1	1	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	SVOCs		Anthracene	ug/Kg	1.4	18	11%	11%	89%	1.45	0.21	1.4	2.3	1.4	1.5	19	26%	26%	74%	1.63	0.30	1.5	2.7	1.4	1.4	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.056**	**No**	0.257	0.217	15%
Sediment	D	SVOCs		Benzo(a)anthracene	ug/Kg	1.4	18	78%	78%	22%	2.90	1.89	1.6	10	1.4	1.4	19	63%	63%	37%	3.49	2.80	1.6	12	1.4	1.4	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.615**	**No**	2.40	2.03	70%
Sediment	D	SVOCs		Benzo(a)pyrene	ug/Kg	1.6	18	50%	50%	50%	3.06	2.36	1.6	11	1.6	1.6	19	58%	58%	42%	3.43	2.13	1.7	7.5	1.6	1.6	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.239**	**No**	2.25	1.90	62%
Sediment	D	SVOCs		Benzo(b)fluoranthene	ug/Kg	2.5	18	72%	72%	28%	4.94	3.32	2.7	17	2.5	2.5	19	47%	47%	53%	5.06	1.57	4	9.1	2.5	2.5	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.735**	**No**	2.57	2.17	44%
Sediment	D	SVOCs		Benzo(g,h,i)perylene	ug/Kg	2.3	18	56%	56%	44%	3.43	1.67	2.3	7.9	2.3	2.3	19	47%	47%	53%	3.26	1.01	2.6	6.2	2.3	2.3	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.628**	**No**	1.37	1.16	34%
Sediment	D	SVOCs		Benzo(k)fluoranthene	ug/Kg	2.5	18	6%	6%	94%	-	-	5	5	2.5	2.6	19	26%	26%	74%	2.74	0.57	2.5	4.9	2.5	2.5	-	-	-	-	-	Contingency Table Analysis	**0.102**	**No**			
Sediment	D	SVOCs		Bis(2-ethylhexyl) Phthalate	ug/Kg	200	18	100%	0%	100%	15.1	24.4	4.9	110	-	-	19	16%	5%	95%	102	75	38	340	200	200	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.179**	**No**	56.3	47.6	315%
Sediment	D	SVOCs		Butyl Benzyl Phthalate	ug/Kg	1.5	18	11%	11%	89%	2.57	0.30	2.5	3.8	1.5	1.6	19	0%	0%	100%	-	-	-	-	1.5	10	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Sediment	D	SVOCs		Carbazole	ug/Kg	1.3	18	0%	0%	100%	-	-	-	-	1.3	1.4	19	5%	5%	95%	-	-	1.4	1.4	1.3	1.3	-	-	-	-	-	Contingency Table Analysis	**0.514**	**No**			
Sediment	D	SVOCs		Chrysene	ug/Kg	1.4	18	83%	83%	17%	3.95	2.29	1.9	9.8	1.4	1.4	19	84%	84%	16%	4.96	4.73	1.4	20	1.4	1.4	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.567**	**No**	3.75	3.17	80%
Sediment	D	SVOCs		Dibenz(a,h)anthracene	ug/Kg	2.2	18	0%	0%	100%	-	-	-	-	2.2	2.3	19	0%	0%	100%	-	-	-	-	2.2	2.2	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	SVOCs		Di-n-butyl Phthalate	ug/Kg	10	18	83%	6%	94%	5.45	2.06	3.5	11	2.6	2.6	19	0%	0%	100%	-	-	-	-	9.8	19	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Sediment	D	SVOCs		Di-n-octyl Phthalate	ug/Kg	1.2	18	0%	0%	100%	-	-	-	-	1.2	1.3	19	0%	0%	100%	-	-	-	-	1.2	1.2	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	SVOCs		Fluoranthene	ug/Kg	2.2	18	83%	83%	17%	5.89	6.40	2.3	31	2.2	2.2	19	79%	79%	21%	4.60	2.78	2.5	12	2.2	2.2	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.739**	**No**	4.88	4.13	70%
Sediment	D	SVOCs		Fluorene	ug/Kg	1.7	18	0%	0%	100%	-	-	-	-	1.7	1.8	19	0%	0%	100%	-	-	-	-	1.7	1.7	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	SVOCs		Indeno(1,2,3-cd)pyrene	ug/Kg	1.9	18	50%	50%	50%	3.10	2.08	2	8.8	1.9	1.9	19	47%	47%	53%	2.98	1.15	2.2	5.7	1.9	1.9	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.487**	**No**	1.66	1.41	45%
Sediment	D	SVOCs		p-cresol (4-Methylphenol)	ug/Kg	2.9	18	61%	61%	39%	39.4	65.4	4.5	210	2.9	2.9	19	32%	32%	68%	6.90	4.59	4.8	21	2.9	2.9	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.960**	**No**	45.7	38.6	98%
Sediment	D	SVOCs		Phenanthrene	ug/Kg	1.3	18	89%	89%	11%	2.78	1.16	1.3	5.9	1.3	1.3	19	74%	74%	26%	3.01	1.92	1.4	7.4	1.3	1.3	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.688**	**No**	1.60	1.35	49%
Sediment	D	SVOCs		Pyrene	ug/Kg	1.3	18	100%	100%	0%	5.02	4.89	1.5	23	-	-	19	84%	84%	16%	5.02	4.13	1.8	17	1.3	1.3	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.625**	**No**	4.52	3.82	76%
Sediment	D	SVOCs - PAHs		HPAH	ug/Kg	19.3	18	100%	78%	22%	35.3	25.1	16.4	124.7	-	-	19	84%	58%	42%	34.8	20.9	15.4	73.9	19.3	19.3	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.633**	**No**	23.0	19.5	55%
Sediment	D	SVOCs - PAHs		LPAH	ug/Kg	5.4	18	89%	89%	11%	6.9	1.2	5.4	10.0	5.4	5.4	19	74%	74%	26%	7.3	2.2	5.5	12.0	5.4	5.4	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.693**	**No**	1.7	1.5	21%
Sediment	D	SVOCs - PAHs		PAH	ug/Kg	24.7	18	100%	72%	28%	39.2	26.4	17.1	133.2	-	-	19	84%	58%	42%	39.1	23.5	16.6	83.4	24.7	24.7	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.604**	**No**	24.9	21.1	54%
Clam	W	Metals		Aluminum	mg/Kg	-	18	100%	100%	0%	29.8	19.2	8	83.4	-	-	19	100%	100%	0%	32.6	25.4	9.37	83.2	-	-	0.025	0.949	0.002	0.110	Lognormal	t-Test (lognormal)	**0.499**	**No**	22.6	19.1	64%
Clam	W	Metals		Antimony	mg/Kg	0.004	18	17%	17%	83%	0.00428	0.00093	0.004	0.008	0.004	0.005	19	26%	11%	89%	0.00247	0.00119	0.002	0.007	0.002	0.005	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.729**	**No**	0.00107	0.00091	21%
Clam	W	Metals		Arsenic	mg/Kg	-	18	100%	100%	0%	2.30	0.19	2	2.62	-	-	19	100%	100%	0%	2.22	0.22	1.79	2.49	-	-	0.463	0.346	0.125	0.078	Normal	t-Test (normal)	**0.879**	**No**	0.205	0.173	8%
Clam	W	Metals		Barium	mg/Kg	-	18	100%	100%	0%	1.89	0.18	1.71	2.38	-	-	19	100%	100%	0%	1.87	0.46	1.18	3.05	-	-	0.004	0.010	0.380	0.880	Non-parametric	Wilcoxon Rank Sum Test	**0.803**	**No**	0.355	0.300	16%
Clam	W	Metals		Beryllium	mg/Kg	0.0004	18	50%	50%	50%	0.000622	0.000299	0.0004	0.0014	0.0004	0.0004	19	100%	100%	0%	0.00188	0.00075	0.0007	0.0038	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.000**	**Yes**			
Clam	W	Metals		Cadmium	mg/Kg	-	18	100%	100%	0%	0.332	0.044	0.247	0.405	-	-	19	100%	100%	0%	0.363	0.050	0.286	0.461	-	-	0.811	0.410	0.839	0.839	Normal	t-Test (normal)	**0.026**	**Yes**			
Clam	W	Metals		Chromium	mg/Kg	-	18	100%	100%	0%	0.548	0.100	0.45	0.76	-	-	19	100%	100%	0%	0.595	0.189	0.3	0.9	-	-	0.007	0.015	0.337	0.143	Non-parametric	Wilcoxon Rank Sum Test	**0.161**	**No**	0.152	0.129	23%
Clam	W	Metals		Cobalt	mg/Kg	-	18	100%	100%	0%	0.117	0.020	0.0902	0.15	-	-	19	100%	100%	0%	0.106	0.027	0.067	0.148	-	-	0.142	0.144	0.196	0.097	Normal	t-Test (normal)	**0.917**	**No**	0.0236	0.0199	17%
Clam	W	Metals		Copper	mg/Kg	-	18	100%	100%	0%	9.74	0.84	8.18	11.6	-	-	19	100%	100%	0%	9.15	1.04	7	11.4	-	-	0.932	0.951	0.948	0.905	Normal	t-Test (normal)	**0.969**	**No**	0.946	0.800	8%
Clam	W	Metals		Lead	mg/Kg	-	18	100%	100%	0%	0.0616	0.0063	0.049	0.072	-	-	19	100%	100%	0%	0.0431	0.0193	0.021	0.089	-	-	0.293	0.232	0.010	0.167	Lognormal	t-Test (lognormal)	**1.000**	**No**	0.0145	0.0123	20%
Clam	W	Metals		Mercury	mg/Kg	-	18	100%	100%	0%	0.00892	0.00366	0.0046	0.0179	-	-	19	100%	100%	0%	0.0111	0.0063	0.0058	0.0341	-	-	0.032	0.301	0.000	0.022	Non-parametric	Wilcoxon Rank Sum Test	**0.081**	**No**	0.00520	0.00439	49%
Clam	W	Metals		Methyl Mercury	mg/Kg	-	18	100%	100%	0%	0.00534	0.00202	0.0014	0.0099	-	-	19	100%	100%	0%	0.00475	0.00081	0.0035	0.0065	-	-	0.293	0.003	0.202	0.281	Normal	t-Test (normal)	**0.868**	**No**	0.00152	0.00129	24%
Clam	W	Metals		Nickel	mg/Kg	-	18	100%	100%	0%	0.354	0.052	0.273	0.482	-	-	19	100%	100%	0%	0.227	0.085	0.095	0.348	-	-	0.438	0.773	0.101	0.040	Normal	t-Test (normal)	**1.000**	**No**	0.0711	0.0601	17%
Clam	W	Metals		Thallium	mg/Kg	-	18	100%	100%	0%	0.00676	0.00128	0.0053	0.0105	-	-	19	100%	100%	0%	0.00692	0.00187	0.0045	0.0119	-	-	0.006	0.058	0.047	0.533	Lognormal	t-Test (lognormal)	**0.461**	**No**	0.00161	0.00136	20%
Clam	W	Metals		Vanadium	mg/Kg	-	18	100%	100%	0%	0.145	0.050	0.074	0.286	-	-	19	100%	100%	0%	0.177	0.099	0.078	0.426	-	-	0.091	0.619	0.013	0.177	Lognormal	t-Test (lognormal)	**0.215**	**No**	0.0791	0.0668	46%
Clam	W	Metals		Zinc	mg/Kg	-	18	100%	100%	0%	21.0	1.5	18.5	23.2	-	-	19	100%	100%	0%	21.4	2.8	16.3	26.5	-	-	0.633	0.605	0.840	0.779	Normal	t-Test (normal)	**0.308**	**No**	2.28	1.92	9%
Clam	W	PCB Aroclors		Aroclor 1016	ug/Kg	12	18	0%	0%	100%	-	-	-	-	8.4	15	19	0%	0%	100%	-	-	-	-	2.4	23	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1221	ug/Kg	12	18	0%	0%	100%	-	-	-	-	6.3	16	19	0%	0%	100%	-	-	-	-	2.6	20	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1232	ug/Kg	24	18	0%	0%	100%	-	-	-	-	18	35	19	0%	0%	100%	-	-	-	-	2.3	40	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1242	ug/Kg	12	18	0%	0%	100%	-	-	-	-	7.9	14	19	0%	0%	100%	-	-	-	-	2.2	48	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1248	ug/Kg	7.1	18	0%	0%	100%	-	-	-	-	5.5	9.9	19	0%	0%	100%	-	-	-	-	0.51	26	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1254	ug/Kg	32	18	100%	89%	11%	34.9	2.6	30	39	-	-	19	47%	11%	89%	27.7	21.9	21	120	28	74	-	-	-	-	-	Wilcoxon Rank Sum Test	**1.000**	**No**	15.8	13.4	38%
Clam	W	PCB Aroclors		Aroclor 1260	ug/Kg	6.5	18	0%	0%	100%	-	-	-	-	5.7	8.1	19	0%	0%	100%	-	-	-	-	1.9	11	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1262	ug/Kg	2.5	18	0%	0%	100%	-	-	-	-	3.7	9.9	19	0%	0%	100%	-	-	-	-	2.5	2.5	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1268	ug/Kg	2	18	0%	0%	100%	-	-	-	-	2	2	19	0%	0%	100%	-	-	-	-	2	2	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	SVOCs		Acenaphthene	ug/Kg	0.11	18	100%	100%	0%	0.647	0.233	0.27	1.2	-	-	19	95%	95%	5%	1.03	0.76	0.42	4.1	0.11	0.11	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.005**	**Yes**			
Clam	W	SVOCs		Anthracene	ug/Kg	1.45	18	11%	6%	94%	0.929	0.263	0.85	1.8	1.3	3.2	19	79%	11%	89%	0.827	0.499	0.28	2.3	0.065	0.33	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.304**	**No**	0.402	0.340	37%
Clam	W	SVOCs		Benzo(a)anthracene	ug/Kg	16	18	0%	0%	100%	-	-	-	-	3.7	27	19	42%	0%	100%	0.829	0.452	0.48	2.1	0.066	22	-	-	-	-	-	Contingency Table Analysis	**0.002**	**Yes**			
Clam	W	SVOCs		Benzo(a)pyrene	ug/Kg	0.41	18	0%	0%	100%	-	-	-	-	0.41	0.41	19	16%	11%	89%	0.396	0.050	0.38	0.58	0.081	0.86	-	-	-	-	-	Contingency Table Analysis	**0.125**	**No**			
Clam	W	SVOCs		Benzo(b)fluoranthene	ug/Kg	0.35	18	0%	0%	100%	-	-	-	-	0.35	0.35	19	47%	47%	53%	0.533	0.170	0.4	0.95	0.07	0.8	-	-	-	-	-	Contingency Table Analysis	**0.001**	**Yes**			
Clam	W	SVOCs		Benzo(g,h,i)perylene	ug/Kg	0.37	18	28%	28%	72%	0.625	0.286	0.5	1.4	0.37	0.37	19	42%	0%	100%	0.174	0.095	0.09	0.36	0.073	2.5	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.992**	**No**	0.211	0.178	28%
Clam	W	SVOCs		Benzo(k)fluoranthene	ug/Kg	0.28	18	0%	0%	100%	-	-	-	-	0.28	0.28	19	11%	0%	100%	0.168	0.026	0.16	0.25	0.056	0.58	-	-	-	-	-	Contingency Table Analysis	**0.257**	**No**			
Clam	W	SVOCs		Bis(2-ethylhexyl) Phthalate	ug/Kg	-	18	100%	100%	0%	444	115	310	680	-	-	19	100%	100%	0%	393	324	67	890	-	-	0.043	0.264	0.000	0.001	Non-parametric	Wilcoxon Rank Sum Test	**0.807**	**No**	246	208	47%
Clam	W	SVOCs		Butyl Benzyl Phthalate	ug/Kg	7.3	18	17%	17%	83%	57.9	3.9	57	74	7.3	7.3	19	16%	16%	84%	13.2	0.5	13	15	7.3	11	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.603**	**No**	2.74	2.31	4%
Clam	W	SVOCs		Carbazole	ug/Kg	9.1	18	0%	0%	100%	-	-	-	-	9.1	9.1	19	0%	0%	100%	-	-	-	-	9.1	13	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	SVOCs		Chrysene	ug/Kg	5.2	18	0%	0%	100%	-	-	-	-	1.3	13	19	42%	0%	100%	2.55	0.72	1.9	4	0.076	7.8	-	-	-	-	-	Contingency Table Analysis	**0.002**	**Yes**			

Table L-4. Statistical Comparison of Forebay Data to Reference Area Data -- MDL Censored

						Reference Area										Forebay Area										Shapiro-Wilk W Test					Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Medium	Basis	Analyte Group	IUPAC #	Analyte	Unit	Median MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	Ref Normality Test p-value	Ref Log-normality Test p-value	Site Normality Test p-value	Site Log-normality Test p-value	Distribution	Appropriate Statistical Test	Comparison p-value	Significant Higher Conc in Forebay?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Clam	W	SVOCs		Dibenz(a,h)anthracene	ug/Kg	0.3	18	0%	0%	100%	-	-	-	-	0.3	0.3	19	0%	0%	100%	-	-	-	-	0.059	0.5	-	-	-	-	-	All Samples are NDs	-	-			
Clam	W	SVOCs		Di-n-butyl Phthalate	ug/Kg	16	18	0%	0%	100%	-	-	-	-	16	48	19	0%	0%	100%	-	-	-	-	16	56	-	-	-	-	-	All Samples are NDs	-	-			
Clam	W	SVOCs		Di-n-octyl Phthalate	ug/Kg	11	18	0%	0%	100%	-	-	-	-	11	11	19	5%	5%	95%	-	-	38	38	11	16	-	-	-	-	-	Contingency Table Analysis	**0.514**	**No**			
Clam	W	SVOCs		Fluoranthene	ug/Kg	14	18	100%	22%	78%	12.0	2.0	8.5	17	-	-	19	74%	11%	89%	10.5	2.5	6.3	16	8.6	16	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.515**	**No**	2.30	1.94	16%
Clam	W	SVOCs		Fluorene	ug/Kg	-	18	100%	100%	0%	2.08	0.43	1.5	3.1	-	-	19	100%	100%	0%	2.25	0.65	0.92	3.8	-	-	0.189	0.595	0.962	0.366	Normal	t-Test (normal)	**0.171**	**No**	0.556	0.470	23%
Clam	W	SVOCs		Indeno(1,2,3-cd)pyrene	ug/Kg	0.32	18	39%	39%	61%	1.05	0.41	0.8	2	0.32	0.32	19	32%	16%	84%	0.240	0.540	0.08	2.5	0.064	0.5	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.974**	**No**	0.481	0.406	39%
Clam	W	SVOCs		p-cresol (4-Methylphenol)	ug/Kg	7.7	18	100%	100%	0%	46.5	22.4	13	110	-	-	19	53%	53%	47%	12.4	6.4	8.6	31	7.7	11	-	-	-	-	-	Wilcoxon Rank Sum Test	**1.000**	**No**	16.3	13.8	30%
Clam	W	SVOCs		Phenanthrene	ug/Kg	-	18	100%	100%	0%	9.60	1.95	6.7	14	-	-	19	100%	100%	0%	9.45	2.66	4.5	15	-	-	0.067	0.340	0.976	0.566	Normal	t-Test (normal)	**0.578**	**No**	2.34	1.98	21%
Clam	W	SVOCs		Pyrene	ug/Kg	3.7	18	0%	0%	100%	-	-	-	-	2	5.6	19	37%	5%	95%	2.23	1.15	1.6	6.3	0.098	7.2	-	-	-	-	-	Contingency Table Analysis	**0.005**	**Yes**			
Crayfish	W	Metals		Aluminum	mg/Kg	-	19	100%	100%	0%	134	39	71.2	221	-	-	17	100%	100%	0%	105	23	71.4	157	-	-	0.880	0.911	0.045	0.302	Lognormal	t-Test (lognormal)	**0.992**	**No**	32.6	28.3	21%
Crayfish	W	Metals		Antimony	mg/Kg	-	19	100%	100%	0%	0.0153	0.0090	0.006	0.039	-	-	17	100%	100%	0%	0.0288	0.0308	0.009	0.133	-	-	0.009	0.391	0.000	0.050	Lognormal	t-Test (lognormal)	**0.018**	**Yes**			
Crayfish	W	Metals		Arsenic	mg/Kg	-	19	100%	100%	0%	0.383	0.084	0.275	0.636	-	-	17	100%	100%	0%	0.479	0.092	0.38	0.68	-	-	0.027	0.375	0.025	0.082	Lognormal	t-Test (lognormal)	**0.001**	**Yes**			
Crayfish	W	Metals		Barium	mg/Kg	-	19	100%	100%	0%	68.2	19.9	40.2	120	-	-	17	100%	100%	0%	65.4	9.6	51.7	84.3	-	-	0.229	0.664	0.537	0.713	Normal	t-Test (normal)	**0.703**	**No**	15.9	13.8	20%
Crayfish	W	Metals		Beryllium	mg/Kg	-	19	100%	100%	0%	0.00349	0.00080	0.0026	0.0061	-	-	17	100%	100%	0%	0.00316	0.00059	0.0017	0.0041	-	-	0.002	0.067	0.520	0.042	Non-parametric	Wilcoxon Rank Sum Test	**0.826**	**No**	0.000710	0.000618	18%
Crayfish	W	Metals		Cadmium	mg/Kg	-	19	100%	100%	0%	0.0942	0.0392	0.046	0.201	-	-	17	100%	100%	0%	0.107	0.046	0.061	0.21	-	-	0.108	0.858	0.024	0.164	Lognormal	t-Test (lognormal)	**0.183**	**No**	0.0424	0.0369	39%
Crayfish	W	Metals		Chromium	mg/Kg	0.13	19	95%	89%	11%	0.472	0.309	0.12	1.23	0.13	0.13	17	100%	100%	0%	0.659	0.248	0.2	1.2	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.010**	**Yes**			
Crayfish	W	Metals		Cobalt	mg/Kg	-	19	100%	100%	0%	0.331	0.058	0.224	0.439	-	-	17	100%	100%	0%	0.233	0.019	0.192	0.262	-	-	0.738	0.435	0.646	0.442	Normal	t-Test (normal)	**1.000**	**No**	0.0441	0.0384	12%
Crayfish	W	Metals		Copper	mg/Kg	-	19	100%	100%	0%	18.2	5.1	12.2	33.2	-	-	17	100%	100%	0%	19.6	5.9	10.5	36	-	-	0.002	0.055	0.097	0.907	Lognormal	t-Test (lognormal)	**0.225**	**No**	5.50	4.79	26%
Crayfish	W	Metals		Lead	mg/Kg	-	19	100%	100%	0%	0.413	0.369	0.056	1.55	-	-	17	100%	100%	0%	0.603	0.635	0.098	2.66	-	-	0.001	0.998	0.000	0.240	Lognormal	t-Test (lognormal)	**0.191**	**No**	0.512	0.445	108%
Crayfish	W	Metals		Mercury	mg/Kg	-	19	100%	100%	0%	0.0176	0.0031	0.0105	0.0246	-	-	17	100%	100%	0%	0.0221	0.0036	0.0157	0.0315	-	-	0.811	0.357	0.329	0.587	Normal	t-Test (normal)	**0.000**	**Yes**			
Crayfish	W	Metals		Methyl Mercury	mg/kg	-	19	100%	100%	0%	0.0269	0.0057	0.0181	0.0367	-	-	17	100%	100%	0%	0.0311	0.0044	0.025	0.04	-	-	0.450	0.590	0.535	0.642	Normal	t-Test (normal)	**0.011**	**Yes**			
Crayfish	W	Metals		Nickel	mg/Kg	-	19	100%	100%	0%	1.80	0.62	0.992	3.44	-	-	17	100%	100%	0%	4.75	0.30	4.31	5.35	-	-	0.127	0.749	0.284	0.423	Normal	t-Test (normal)	**0.000**	**Yes**			
Crayfish	W	Metals		Thallium	mg/Kg	-	19	100%	100%	0%	0.0216	0.0056	0.014	0.037	-	-	17	100%	100%	0%	0.0184	0.0045	0.0117	0.0292	-	-	0.029	0.358	0.123	0.644	Lognormal	t-Test (lognormal)	**0.973**	**No**	0.00510	0.00444	21%
Crayfish	W	Metals		Vanadium	mg/Kg	-	19	100%	100%	0%	0.574	0.161	0.261	0.804	-	-	17	100%	100%	0%	0.435	0.070	0.3	0.6	-	-	0.220	0.046	0.003	0.004	Non-parametric	Wilcoxon Rank Sum Test	**0.995**	**No**	0.127	0.110	19%
Crayfish	W	Metals		Zinc	mg/Kg	-	19	100%	100%	0%	21.6	3.9	18	36.5	-	-	17	100%	100%	0%	20.5	1.6	16.9	23.2	-	-	0.000	0.000	0.915	0.713	Non-parametric	Wilcoxon Rank Sum Test	**0.747**	**No**	3.05	2.66	12%
Crayfish	W	PCB Aroclors		Aroclor 1016	ug/Kg	2.4	19	0%	0%	100%	-	-	-	-	2.4	4.8	17	0%	0%	100%	-	-	-	-	2.4	2.4	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1221	ug/Kg	2.6	19	0%	0%	100%	-	-	-	-	2.6	5.2	17	0%	0%	100%	-	-	-	-	2.6	2.6	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1232	ug/Kg	2.3	19	0%	0%	100%	-	-	-	-	2.3	4.6	17	0%	0%	100%	-	-	-	-	2.3	2.3	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1242	ug/Kg	2.2	19	0%	0%	100%	-	-	-	-	2.2	4.4	17	0%	0%	100%	-	-	-	-	2.2	2.2	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1248	ug/Kg	0.51	19	0%	0%	100%	-	-	-	-	0.51	1.1	17	0%	0%	100%	-	-	-	-	0.51	0.51	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1254	ug/Kg	1.8	19	0%	0%	100%	-	-	-	-	1.8	3.6	17	0%	0%	100%	-	-	-	-	1.8	19	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1260	ug/Kg	1.9	19	0%	0%	100%	-	-	-	-	1.9	3.8	17	0%	0%	100%	-	-	-	-	1.9	17	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1262	ug/Kg	2.5	19	0%	0%	100%	-	-	-	-	2.5	5	17	0%	0%	100%	-	-	-	-	2.5	10	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1268	ug/Kg	2	19	0%	0%	100%	-	-	-	-	2	4	17	0%	0%	100%	-	-	-	-	2	2	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	SVOCs		Acenaphthene	ug/Kg	0.11	18	17%	17%	83%	0.124	0.016	0.12	0.19	0.11	0.11	15	47%	47%	53%	0.138	0.046	0.11	0.26	0.11	0.11	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.046**	**Yes**			
Crayfish	W	SVOCs		Anthracene	ug/Kg	0.065	18	11%	11%	89%	0.103	0.021	0.098	0.19	0.065	0.065	15	27%	27%	73%	0.0802	0.0263	0.069	0.16	0.065	0.065	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.160**	**No**	0.0236	0.0219	21%
Crayfish	W	SVOCs		Benzo(a)anthracene	ug/Kg	0.066	18	11%	11%	89%	0.315	0.021	0.31	0.4	0.066	0.066	15	67%	67%	33%	0.256	0.032	0.23	0.35	0.066	0.066	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.003**	**Yes**			
Crayfish	W	SVOCs		Benzo(a)pyrene	ug/Kg	0.081	18	6%	6%	94%	-	-	0.12	0.12	0.081	0.081	15	20%	20%	80%	0.126	0.015	0.12	0.17	0.081	0.081	-	-	-	-	-	Contingency Table Analysis	**0.234**	**No**			
Crayfish	W	SVOCs		Benzo(b)fluoranthene	ug/Kg	0.07	18	22%	22%	78%	0.0970	0.0420	0.082	0.23	0.07	0.07	15	47%	47%	53%	0.118	0.045	0.096	0.24	0.07	0.07	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.063**	**No**	0.0436	0.0405	42%
Crayfish	W	SVOCs		Benzo(g,h,i)perylene	ug/Kg	0.073	18	0%	0%	100%	-	-	-	-	0.073	0.5	15	27%	27%	73%	0.126	0.074	0.098	0.39	0.073	0.073	-	-	-	-	-	Contingency Table Analysis	**0.033**	**Yes**			
Crayfish	W	SVOCs		Benzo(k)fluoranthene	ug/Kg	0.056	18	22%	22%	78%	0.0862	0.0371	0.072	0.2	0.056	0.056	15	47%	47%	53%	0.0999	0.0232	0.086	0.16	0.056	0.056	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.087**	**No**	0.0316	0.0294	34%
Crayfish	W	SVOCs		Bis(2-ethylhexyl) Phthalate	ug/Kg	66	18	22%	22%	78%	70.4	4.3	69	87	66	66	15	27%	27%	73%	71.3	11.6	67	110	66	66	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.396**	**No**	8.43	7.83	11%
Crayfish	W	SVOCs		Butyl Benzyl Phthalate	ug/Kg	7.3	18	17%	17%	83%	16.1	3.7	15	31	7.3	7.3	15	0%	0%	100%	-	-	-	-	7.3	7.3	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Crayfish	W	SVOCs		Carbazole	ug/Kg	9.1	18	0%	0%	100%	-	-	-	-	9.1	9.1	15	0%	0%	100%	-	-	-	-	9.1	9.1	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	SVOCs		Chrysene	ug/Kg	0.076	18	28%	28%	72%	0.113	0.054	0.091	0.27	0.076	0.076	15	53%	53%	47%	0.115	0.061	0.082	0.31	0.076	0.076	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.109**	**No**	0.0574	0.0534	47%
Crayfish	W	SVOCs		Dibenz(a,h)anthracene	ug/Kg	0.059	18	17%	17%	83%	0.0796	0.0224	0.072	0.16	0.059	0.059	15	0%	0%	100%	-	-	-	-	0.059	0.059	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Crayfish	W	SVOCs		Di-n-butyl Phthalate	ug/Kg	39	18	0%	0%	100%	-	-	-	-	16	110	15	0%	0%	100%	-	-	-	-	16	180	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	SVOCs		Di-n-octyl Phthalate	ug/Kg	11	18	6%	6%	94%	-	-	32	32	11	11	15	0%	0%	100%	-	-	-	-	11	11	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Crayfish	W	SVOCs		Fluoranthene	ug/Kg	0.49	18	0%	0%	100%	-	-	-	-	0.45	0.5	15	100%	20%	80%	0.349	0.156	0.17	0.75	-	-	-	-	-	-	-	Contingency Table Analysis	**0.000**	**Yes**			
Crayfish	W	SVOCs		Fluorene	ug/Kg	0.15	18	11%	11%	89%	0.184	0.016	0.18	0.25	0.15	0.15	15	33%	33%	67%	0.157	0.016	0.15	0.21	0.15	0.15	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.281**	**No**	0.0161	0.0150	8%
Crayfish	W	SVOCs		Indeno(1,2,3-cd)pyrene	ug/Kg	0.064	18	17%	17%	83%	0.0946	0.0229	0.087	0.18	0.064	0.064	15	20%	20%	80%	0.163	0.007	0.16	0.18	0.064	0.064	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.363**	**No**	0.0176	0.0163	17%
Crayfish	W	SVOCs		p-cresol (4-Methylphenol)	ug/Kg	7.7	18	0%	0%	100%	-	-	-	-	7.7	7.7	15	0%	0%	100%	-	-	-	-	7.7	7.7	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	SVOCs		Phenanthrene	ug/Kg	0.36	18	28%	28%	72%	0.469	0.043	0.45	0.59	0.36	0.36	15	67%	67%	33%	0.507	0.136	0.42	0.86	0.36	0.36	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.023**	**Yes**			
Crayfish	W	SVOCs		Pyrene	ug/Kg	0.49	18	0%	0%	100%	-	-	-	-	0.45	0.5	15	100%	7%	93%	0.361	0.250	0.16	1.2	-	-	-	-	-	-	-	Contingency Table Analysis	**0.000**	**Yes**			
Sculpin	W	Metals		Arsenic	mg/Kg	-	18	100%	100%	0%	0.382	0.074	0.239	0.484	-	-	17	100%	100%	0%	0.312	0.077	0.184	0.435	-	-	0.453	0.338	0.181	0.341	Normal	t-Test (normal)	**0.995**	**No**	0.0754	0.0656	17%
Sculpin	W	Metals		Cadmium	mg/Kg	-	18	100%	100%	0%	0.0152	0.0047	0.0087	0.0264	-	-	17	100%	100%	0%	0.0201	0.0091	0.0072	0.0453	-	-	0.096	0.891	0.050	0.947	Lognormal	t-Test (lognormal)	**0.032**	**Yes**			
Sculpin	W	Metals		Lead	mg/Kg	0.0214	18	94%	94%	6%	0.0360	0.0130	0.0239	0.0758	0.0214	0.0214	17	94%	94%	6%	0.0759	0.0640	0.0313	0.306	0.0214	0.0214	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.002**	**Yes**			
Sculpin	W	Metals		Mercury	mg/Kg	-	18	100%	100%	0%	0.0876	0.0258	0.0448	0.141	-	-	17	100%	100%	0%	0.152	0.083	0.0327	0.308	-	-	0.513	0.712	0.437	0.367	Normal	t-Test (normal)	**0.003**	**Yes**			
Sculpin	W	PCB Aroclors		Aroclor 1016	ug/Kg	2.4	18	0%	0%	100%	-	-	-	-	2.4	2.4	17	0%	0%	100%	-	-	-	-	2.4	14	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1221	ug/Kg	2.6	18	0%	0%	100%	-	-	-	-	2.6	2.6	17	0%	0%	100%	-	-	-	-	2.6	69	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1232	ug/Kg	2.3	18	0%	0%	100%	-	-	-	-	2.3	2.3	17	0%	0%	100%	-	-	-	-	2.3	62	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1242	ug/Kg	2.2	18	0%	0%	100%	-	-	-	-	2.2	2.2	17	0%	0%	100%	-	-	-	-	2.2	35	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1248	ug/Kg	0.51	18	0%	0%	100%	-	-	-	-	0.51	45	17	0%	0%	100%	-	-	-	-	0.51	13	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1254	ug/Kg	27	18	0%	0%	100%	-	-	-	-	1.8	44	17	18%	18%	82%	242	373	130	1700	13	130	-	-	-	-	-	Contingency Table Analysis	**0.104**	**No**			
Sculpin	W	PCB Aroclors		Aroclor 1260	ug/Kg	1.9	18	0%	0%	100%	-	-	-	-	1.9	1.9	17	0%	0%	100%	-	-	-	-	1.9	82	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1262	ug/Kg	2.5	18	0%	0%	100%	-	-	-	-	2.5	2.5	17	0%	0%	100%	-	-	-	-	2.5	13	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1268	ug/Kg	2	18	0%	0%	100%	-	-	-	-	2	2	17	0%	0%	100%	-	-	-	-	2	10	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	Metals		Aluminum	mg/Kg	-	19	100%	100%	0%	2.50	2.31	0.33	10.1	-	-	19	100%	100%	0%	5.05	4.13	1.06	15.5	-	-	0.001	0.998	0.010	0.248	Lognormal	t-Test (lognormal)	**0.007**	**Yes**			
Smallmouth Bass	W	Metals		Antimony	mg/Kg	0.005	19	21%	5%	95%	0.00416	0.00491	0.003	0.025	0.002	0.006	19	0%	0%	100%	-	-	-	-	0.005	0.006	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Smallmouth Bass	W	Metals		Arsenic	mg/Kg	-	19	100%	100%	0%	0.354	0.151	0.159	0.761	-	-	19	100%	100%	0%	0.412	0.150	0.17	0.7	-	-	0.025	0.807	0.755	0.097	Lognormal	t-Test (lognormal)	**0.127**	**No**	0.151	0.124	35%
Smallmouth Bass	W	Metals		Barium	mg/Kg	-	19	100%	100%	0%	1.10	0.39	0.43	1.72	-	-	19	100%	100%	0%	1.51	0.56	0.72	2.64	-	-	0.480	0.133	0.362	0.783	Normal	t-Test (normal)	**0.006**	**Yes**			
Smallmouth Bass	W	Metals		Beryllium	mg/Kg	0.0006	19	0%	0%	100%	-	-	-	-	0.0005	0.002	19	21%	16%	84%	0.000521	0.000052	0.0005	0.0007	0.0005	0.0006	-	-	-	-	-	Contingency Table Analysis	**0.053**	**No**			
Smallmouth Bass	W	Metals		Cadmium	mg/Kg	-	19	100%	100%	0%	0.0813	0.0602	0.004	0.143	-	-	19	100%	100%	0%	0.00974	0.00667	0.004	0.028	-	-	0.000	0.000	0.000	0.061	Non-parametric	Wilcoxon Rank Sum Test	**0.989**	**No**	0.0428	0.0352	43%
Smallmouth Bass	W	Metals		Chromium	mg/Kg	0.13	19	63%	21%	79%	0.458	1.578	0.04	7.15	0.1	0.1	19	26%	26%	74%	0.235	0.150	0.19	0.86	0.12	0.15	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.218**	**No**	1.12	0.92	201%
Smallmouth Bass	W	Metals		Cobalt	mg/Kg	0.0267	19	63%	63%	37%	0.0563	0.0098	0.0487	0.0838	0.0248	0.0361	19	100%	100%	0%	0.0548	0.0080	0.0441	0.0758	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.198**	**No**	0.00894	0.00735	13%
Smallmouth Bass	W	Metals		Copper	mg/Kg	-	19	100%	100%	0%	0.510	0.133	0.327	0.73	-	-	19	100%	100%	0%	0.664	0.249	0.364	1.42	-	-	0.182	0.259	0.005	0.486	Lognormal	t-Test (lognormal)	**0.008**	**Yes**			
Smallmouth Bass	W	Metals		Lead	mg/Kg	0.014	19	63%	63%	37%	1.53	0.12	1.42	1.81	0.013	0.015	19	100%	26%	74%	0.0109	0.0079	0.004	0.036	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.999**	**No**	0.0872	0.0716	5%
Smallmouth Bass	W	Metals		Mercury	mg/Kg	-	19	100%	100%	0%	0.131	0.071	0.0548	0.333	-	-	19	100%	100%	0%	0.265	0.130	0.071	0.512	-	-	0.016	0.766	0.499	0.197	Lognormal	t-Test (lognormal)	**0.000**	**Yes**			
Smallmouth Bass	W	Metals		Nickel	mg/Kg	0.298	19	84%	84%	16%	0.980	0.499	0.324	1.79	0.277	0.306	19	100%	47%	53%	0.298	0.055	0.213	0.399	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**1.000**	**No**	0.355	0.292	30%
Smallmouth Bass	W	Metals		Thallium	mg/Kg	-	19	100%	100%	0%	0.0160	0.0041	0.0109	0.0261	-	-	19	100%	100%	0%	0.0148	0.0033	0.0079	0.0215	-	-	0.167	0.664	0.753	0.182	Normal	t-Test (normal)	**0.825**	**No**	0.00370	0.00304	19%
Smallmouth Bass	W	Metals		Vanadium	mg/Kg	0.006	19	95%	95%	5%	0.0570	0.0212	0.03	0.104	0.006	0.006	19	100%	100%	0%	0.0595	0.0244	0.03	0.13	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.430**	**No**	0.0229	0.0188	33%
Smallmouth Bass	W	Metals		Zinc	mg/Kg	-	19	100%	100%	0%	13.4	1.2	11.2	15.5	-	-	19	100%	100%	0%	14.2	1.6	11.4	18	-	-	0.530	0.513	0.854	0.955	Normal	t-Test (normal)	**0.042**	**Yes**			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1016	ug/Kg	4.6	19	0%	0%	100%	-	-	-	-	2.4	9.9	19	0%	0%	100%	-	-	-	-	2.4	240	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1221	ug/Kg	3.75	19	0%	0%	100%	-	-	-	-	2.6	20	19	0%	0%	100%	-	-	-	-	2.6	260	-	-	-	-	-	All Samples are NDs	-	-			

Table L-4. Statistical Comparison of Forebay Data to Reference Area Data -- MDL Censored

							Reference Area										Forebay Area										Shapiro-Wilk W Test					Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Medium	Basis	Analyte Group	IUPAC #	Analyte	Unit	Median MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MDL	Percent of Data Censored at Median MDL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MDL of NDs	Max MDL of NDs	Ref Normality Test p-value	Ref Log-normality Test p-value	Site Normality Test p-value	Site Log-normality Test p-value	Distribution	Appropriate Statistical Test	Comparison p-value	Significant Higher Conc in Forebay?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Smallmouth Bass	W	PCB Aroclors		Aroclor 1232	ug/Kg	5.55	19	0%	0%	100%	-	-	-	-	2.3	11	19	0%	0%	100%	-	-	-	-	2.3	230	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1242	ug/Kg	2.9	19	21%	16%	84%	3.68	3.06	2.4	14	2.2	10	19	5%	5%	95%	-	-	260	260	2.2	220	-	-	-	-	-	Contingency Table Analysis	**0.977**	**No**			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1248	ug/Kg	0.51	19	0%	0%	100%	-	-	-	-	0.51	33	19	0%	0%	100%	-	-	-	-	0.51	68	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1254	ug/Kg	38	19	84%	53%	47%	49.5	22.3	27	110	9.6	130	19	37%	37%	63%	1948	4885	51	18000	11	420	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.500**	**No**	3454	2838	5732%
Smallmouth Bass	W	PCB Aroclors		Aroclor 1260	ug/Kg	19	19	0%	0%	100%	-	-	-	-	1.9	140	19	0%	0%	100%	-	-	-	-	1.9	300	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1262	ug/Kg	5.45	19	0%	0%	100%	-	-	-	-	2.5	110	19	0%	0%	100%	-	-	-	-	2.5	250	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1268	ug/Kg	2	19	0%	0%	100%	-	-	-	-	2	10	19	0%	0%	100%	-	-	-	-	2	200	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	SVOCs		Acenaphthene	ug/Kg	0.11	19	95%	95%	5%	0.797	0.214	0.51	1.3	0.11	0.11	19	84%	84%	16%	0.537	0.517	0.16	1.6	0.11	0.11	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.993**	**No**	0.396	0.325	41%
Smallmouth Bass	W	SVOCs		Anthracene	ug/Kg	0.065	19	16%	16%	84%	0.115	0.073	0.09	0.38	0.065	0.65	19	95%	95%	5%	2.16	4.10	0.078	17	0.065	0.065	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.000**	**Yes**			
Smallmouth Bass	W	SVOCs		Benzo(a)anthracene	ug/Kg	0.066	19	16%	16%	84%	0.583	0.085	0.56	0.94	0.066	0.66	19	26%	26%	74%	2.07	3.63	1	17	0.066	0.66	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.143**	**No**	2.57	2.11	362%
Smallmouth Bass	W	SVOCs		Benzo(a)pyrene	ug/Kg	0.081	19	0%	0%	100%	-	-	-	-	0.081	0.81	19	42%	42%	58%	2.18	2.53	0.72	7.4	0.081	0.081	-	-	-	-	-	Contingency Table Analysis	**0.002**	**Yes**			
Smallmouth Bass	W	SVOCs		Benzo(b)fluoranthene	ug/Kg	0.07	19	0%	0%	100%	-	-	-	-	0.07	0.7	19	32%	32%	68%	1.09	1.69	0.11	4.4	0.07	0.14	-	-	-	-	-	Contingency Table Analysis	**0.010**	**Yes**			
Smallmouth Bass	W	SVOCs		Benzo(g,h,i)perylene	ug/Kg	0.073	19	0%	0%	100%	-	-	-	-	0.073	0.73	19	32%	32%	68%	1.01	1.04	0.42	3.3	0.073	0.15	-	-	-	-	-	Contingency Table Analysis	**0.010**	**Yes**			
Smallmouth Bass	W	SVOCs		Benzo(k)fluoranthene	ug/Kg	0.056	19	0%	0%	100%	-	-	-	-	0.056	0.56	19	47%	47%	53%	2.06	2.91	0.11	7.7	0.056	0.056	-	-	-	-	-	Contingency Table Analysis	**0.001**	**Yes**			
Smallmouth Bass	W	SVOCs		Bis(2-ethylhexyl) Phthalate	ug/Kg	66	19	11%	11%	89%	86.3	18.4	81	150	66	2500	19	37%	37%	63%	186	344	89	1600	66	5000	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.027**	**Yes**			
Smallmouth Bass	W	SVOCs		Butyl Benzyl Phthalate	ug/Kg	7.3	19	0%	0%	100%	-	-	-	-	7.3	7.3	19	11%	11%	89%	54.4	90.9	33	440	7.3	7.3	-	-	-	-	-	Contingency Table Analysis	**0.243**	**No**			
Smallmouth Bass	W	SVOCs		Carbazole	ug/Kg	9.1	19	0%	0%	100%	-	-	-	-	7.7	9.1	19	0%	0%	100%	-	-	-	-	9.1	9.1	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	SVOCs		Chrysene	ug/Kg	0.076	19	5%	5%	95%	-	-	0.55	0.55	0.076	0.76	19	42%	42%	58%	1.76	2.47	0.5	10	0.076	0.076	-	-	-	-	-	Contingency Table Analysis	**0.009**	**Yes**			
Smallmouth Bass	W	SVOCs		Dibenz(a,h)anthracene	ug/Kg	0.059	19	0%	0%	100%	-	-	-	-	0.059	0.59	19	32%	32%	68%	1.16	1.30	0.41	4.1	0.059	0.12	-	-	-	-	-	Contingency Table Analysis	**0.010**	**Yes**			
Smallmouth Bass	W	SVOCs		Di-n-butyl Phthalate	ug/Kg	71	19	0%	0%	100%	-	-	-	-	16	280	19	5%	5%	95%	-	-	150	150	16	71	-	-	-	-	-	Contingency Table Analysis	**0.500**	**No**			
Smallmouth Bass	W	SVOCs		Di-n-octyl Phthalate	ug/Kg	11	19	5%	5%	95%	-	-	15	15	11	11	19	0%	0%	100%	-	-	-	-	11	11	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Smallmouth Bass	W	SVOCs		Fluoranthene	ug/Kg	0.09	19	58%	58%	42%	1.05	0.50	0.69	2.5	0.09	1.2	19	53%	53%	47%	1.93	2.27	0.49	6.5	0.09	0.09	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.463**	**No**	1.64	1.35	129%
Smallmouth Bass	W	SVOCs		Fluorene	ug/Kg	0.15	19	84%	84%	16%	1.31	0.33	0.89	2.1	0.15	2	19	89%	89%	11%	1.20	1.28	0.3	4.7	0.15	0.15	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.938**	**No**	0.936	0.769	59%
Smallmouth Bass	W	SVOCs		Indeno(1,2,3-cd)pyrene	ug/Kg	0.064	19	0%	0%	100%	-	-	-	-	0.064	0.64	19	37%	37%	63%	1.88	2.06	0.7	6.1	0.064	0.13	-	-	-	-	-	Contingency Table Analysis	**0.004**	**Yes**			
Smallmouth Bass	W	SVOCs		p-cresol (4-Methylphenol)	ug/Kg	7.7	19	0%	0%	100%	-	-	-	-	7.7	11	19	0%	0%	100%	-	-	-	-	7.7	7.7	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	SVOCs		Phenanthrene	ug/Kg	-	19	100%	100%	0%	3.11	1.05	1.4	5.1	-	-	19	100%	100%	0%	2.09	1.75	0.54	5.7	-	-	0.306	0.493	0.000	0.082	Lognormal	t-Test (lognormal)	**0.999**	**No**	1.44	1.18	38%
Smallmouth Bass	W	SVOCs		Pyrene	ug/Kg	0.098	19	11%	11%	89%	0.382	0.009	0.38	0.42	0.098	0.98	19	47%	47%	53%	1.35	2.24	0.11	7.2	0.098	0.49	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.005**	**Yes**			

Table L-5. Statistical Comparison of Forebay Data to Reference Area Data -- MRL Censored

							Reference Area									Forebay Area									Shapiro-Wilk W Test					Statistical Comparison(α = 5%)			If "No", Power Analysis (Normal Approximation)		
Medium	Basis	Analyte Group	IUPAC #	Analyte	Unit	Median MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	Ref Normality Test p-value	Ref Log-normality Test p-value	Site Normality Test p-value	Site Log-normality Test p-value	Distribution	Appropriate Statistical Test	Comparison p-value	Significant Higher Conc in Forebay?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Sediment	D	Metals		Aluminum	mg/Kg	-	18	100%	100%	0%	17328	9005	7380	33500	-	-	19	100%	100%	0%	13279	2993	9000	22900	-	-	0.011	0.064	0.008	0.317	Lognormal	t-Test (lognormal)	**0.891**	**No**	6633	5604	32%
Sediment	D	Metals		Antimony	mg/Kg	0.06	18	100%	100%	0%	0.264	0.091	0.15	0.52	-	-	19	95%	84%	16%	0.155	0.065	0.04	0.28	0.06	0.06	-	-	-	-	-	Wilcoxon Rank Sum Test	**1.000**	**No**	0.0790	0.0667	25%
Sediment	D	Metals		Arsenic	mg/Kg	-	18	100%	100%	0%	4.19	0.87	3.03	6.04	-	-	19	100%	100%	0%	3.12	1.00	1.4	5.39	-	-	0.031	0.108	0.025	0.217	Lognormal	t-Test (lognormal)	**1.000**	**No**	0.939	0.793	19%
Sediment	D	Metals		Barium	mg/Kg	-	18	100%	100%	0%	167	67	86.3	312	-	-	19	100%	100%	0%	121	36	53.1	202	-	-	0.037	0.085	0.269	0.170	Lognormal	t-Test (lognormal)	**0.989**	**No**	53.4	45.1	27%
Sediment	D	Metals		Beryllium	mg/Kg	-	18	100%	100%	0%	0.437	0.177	0.194	0.748	-	-	19	100%	100%	0%	0.362	0.092	0.215	0.597	-	-	0.047	0.116	0.547	0.754	Lognormal	t-Test (lognormal)	**0.884**	**No**	0.140	0.118	27%
Sediment	D	Metals		Cadmium	mg/Kg	0.118	18	100%	100%	0%	0.476	0.111	0.262	0.748	-	-	19	89%	89%	11%	0.453	0.181	0.175	0.719	0.115	0.121	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.670**	**No**	0.151	0.128	27%
Sediment	D	Metals		Chromium	mg/Kg	-	18	100%	100%	0%	19.8	4.6	12.8	27.3	-	-	19	100%	100%	0%	19.9	5.2	10.1	33.5	-	-	0.190	0.353	0.150	0.395	Normal	t-Test (normal)	**0.462**	**No**	4.90	4.14	21%
Sediment	D	Metals		Cobalt	mg/Kg	-	18	100%	100%	0%	9.66	3.12	5.68	15.2	-	-	19	100%	100%	0%	8.59	2.10	4.82	15.1	-	-	0.077	0.137	0.019	0.281	Lognormal	t-Test (lognormal)	**0.841**	**No**	2.64	2.23	23%
Sediment	D	Metals		Copper	mg/Kg	-	18	100%	100%	0%	25.6	13.8	8.22	47.8	-	-	19	100%	100%	0%	20.5	4.7	11.3	33.1	-	-	0.015	0.051	0.255	0.490	Lognormal	t-Test (lognormal)	**0.749**	**No**	10.2	8.6	34%
Sediment	D	Metals		Lead	mg/Kg	-	18	100%	100%	0%	11.6	1.6	8.65	15.1	-	-	19	100%	100%	0%	8.93	3.11	3.3	16.8	-	-	0.642	0.869	0.142	0.049	Normal	t-Test (normal)	**0.999**	**No**	2.50	2.12	18%
Sediment	D	Metals		Mercury	mg/Kg	-	18	100%	100%	0%	0.129	0.048	0.041	0.225	-	-	19	100%	100%	0%	0.132	0.111	0.008	0.373	-	-	0.953	0.321	0.049	0.233	Lognormal	t-Test (lognormal)	**0.902**	**No**	0.0862	0.0729	56%
Sediment	D	Metals		Nickel	mg/Kg	-	18	100%	100%	0%	14.6	3.6	9.87	25.6	-	-	19	100%	100%	0%	15.5	9.1	6.39	51.5	-	-	0.015	0.391	0.000	0.001	Non-parametric	Wilcoxon Rank Sum Test	**0.608**	**No**	7.03	5.94	41%
Sediment	D	Metals		Thallium	mg/Kg	0.1175	18	100%	100%	0%	0.244	0.062	0.145	0.36	-	-	19	79%	79%	21%	0.173	0.028	0.135	0.218	0.108	0.132	-	-	-	-	-	Wilcoxon Rank Sum Test	**1.000**	**No**	0.0473	0.0400	16%
Sediment	D	Metals		Vanadium	mg/Kg	-	18	100%	100%	0%	45.0	14.3	25.7	76.9	-	-	19	100%	100%	0%	40.0	8.2	27.5	59.3	-	-	0.219	0.778	0.162	0.582	Normal	t-Test (normal)	**0.901**	**No**	11.6	9.8	22%
Sediment	D	Metals		Zinc	mg/Kg	-	18	100%	100%	0%	87.6	10.1	70.2	109	-	-	19	100%	100%	0%	81.8	18.2	50.3	113	-	-	0.978	0.987	0.323	0.109	Normal	t-Test (normal)	**0.883**	**No**	14.8	12.5	14%
Sediment	D	NWTPH-Dx		Diesel Range Organics	mg/Kg	-	18	100%	100%	0%	15.7	8.2	7	31	-	-	19	100%	100%	0%	15.7	12.7	2.6	54	-	-	0.003	0.125	0.006	0.586	Lognormal	t-Test (lognormal)	**0.803**	**No**	10.8	9.1	58%
Sediment	D	NWTPH-Dx		Residual Range Organics	mg/Kg	150	18	72%	0%	100%	48.9	20.4	29	100	150	180	19	63%	26%	74%	95.3	48.8	17	180	130	180	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.044**	**Yes**			
Sediment	D	PCB Aroclors		Aroclor 1016	ug/Kg	10	18	0%	0%	100%	-	-	-	-	9.6	13	19	0%	0%	100%	-	-	-	-	6.4	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1221	ug/Kg	20	18	0%	0%	100%	-	-	-	-	20	21	19	0%	0%	100%	-	-	-	-	13	29	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1232	ug/Kg	10	18	0%	0%	100%	-	-	-	-	9.6	12	19	0%	0%	100%	-	-	-	-	6.4	18	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1242	ug/Kg	10	18	0%	0%	100%	-	-	-	-	9.6	16	19	0%	0%	100%	-	-	-	-	6.4	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1248	ug/Kg	10	18	0%	0%	100%	-	-	-	-	9.6	11	19	0%	0%	100%	-	-	-	-	6.4	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1254	ug/Kg	10	18	0%	0%	100%	-	-	-	-	9.6	11	19	11%	5%	95%	5.78	5.00	4.6	27	6.4	10	-	-	-	-	-	Contingency Table Analysis	**0.257**	**No**			
Sediment	D	PCB Aroclors		Aroclor 1260	ug/Kg	10	18	0%	0%	100%	-	-	-	-	9.6	11	19	0%	0%	100%	-	-	-	-	6.4	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1262	ug/Kg	10	18	0%	0%	100%	-	-	-	-	9.6	11	19	0%	0%	100%	-	-	-	-	6.4	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Aroclors		Aroclor 1268	ug/Kg	10	18	0%	0%	100%	-	-	-	-	9.6	11	19	0%	0%	100%	-	-	-	-	6.4	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	SVOCs		Acenaphthene	ug/Kg	9.9	18	0%	0%	100%	-	-	-	-	9.5	11	19	0%	0%	100%	-	-	-	-	9.8	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	SVOCs		Anthracene	ug/Kg	9.95	18	11%	0%	100%	1.85	0.45	1.4	2.3	9.5	11	19	26%	0%	100%	2.00	0.39	1.5	2.7	9.8	10	-	-	-	-	-	All Samples are Censored at Median MRL	**-**	**-**			
Sediment	D	SVOCs		Benzo(a)anthracene	ug/Kg	9.9	18	78%	6%	94%	3.16	1.81	1.6	10	9.8	10	19	63%	5%	95%	4.34	2.74	1.6	12	9.8	10	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.500**	**No**	2.33	1.97	62%
Sediment	D	SVOCs		Benzo(a)pyrene	ug/Kg	9.9	18	50%	6%	94%	4.11	2.14	1.6	11	9.5	10	19	58%	0%	100%	4.69	2.02	1.7	7.5	9.8	10	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.835**	**No**	2.08	1.76	43%
Sediment	D	SVOCs		Benzo(b)fluoranthene	ug/Kg	9.9	18	72%	6%	94%	5.54	3.14	2.7	17	9.8	10	19	47%	0%	100%	6.24	1.60	4	9.1	9.8	10	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.835**	**No**	2.47	2.09	38%
Sediment	D	SVOCs		Benzo(g,h,i)perylene	ug/Kg	9.9	18	56%	0%	100%	4.34	1.78	2.3	7.9	9.8	10	19	47%	0%	100%	4.00	1.05	2.6	6.2	9.8	10	-	-	-	-	-	All Samples are Censored at Median MRL	**-**	**-**			
Sediment	D	SVOCs		Benzo(k)fluoranthene	ug/Kg	10	18	6%	0%	100%	-	-	5	5	9.5	11	19	26%	0%	100%	3.40	0.80	2.5	4.9	9.8	10	-	-	-	-	-	Contingency Table Analysis	**0.102**	**No**			
Sediment	D	SVOCs		Bis(2-ethylhexyl) Phthalate	ug/Kg	200	18	100%	0%	100%	15.1	24.4	4.9	110	-	-	19	16%	5%	95%	102	75	38	340	200	200	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.179**	**No**	56.3	47.6	315%
Sediment	D	SVOCs		Butyl Benzyl Phthalate	ug/Kg	9.9	18	11%	0%	100%	3.15	0.65	2.5	3.8	9.8	11	19	0%	0%	100%	-	-	-	-	9.8	10	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Sediment	D	SVOCs		Carbazole	ug/Kg	9.95	18	0%	0%	100%	-	-	-	-	9.5	11	19	5%	0%	100%	-	-	1.4	1.4	9.8	10	-	-	-	-	-	Contingency Table Analysis	**0.514**	**No**			
Sediment	D	SVOCs		Chrysene	ug/Kg	9.9	18	83%	0%	100%	4.36	2.30	1.9	9.8	9.9	10	19	84%	11%	89%	5.40	4.63	1.4	20	9.8	9.9	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.087**	**No**	3.69	3.12	71%
Sediment	D	SVOCs		Dibenz(a,h)anthracene	ug/Kg	9.9	18	0%	0%	100%	-	-	-	-	9.5	11	19	0%	0%	100%	-	-	-	-	9.8	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	SVOCs		Di-n-butyl Phthalate	ug/Kg	10	18	83%	6%	94%	5.78	1.97	3.5	11	9.9	10	19	0%	0%	100%	-	-	-	-	9.8	19	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Sediment	D	SVOCs		Di-n-octyl Phthalate	ug/Kg	9.9	18	0%	0%	100%	-	-	-	-	9.5	11	19	0%	0%	100%	-	-	-	-	9.8	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	SVOCs		Fluoranthene	ug/Kg	9.9	18	83%	6%	94%	6.32	6.27	2.3	31	9.9	10	19	79%	11%	89%	4.97	2.73	2.5	12	9.8	9.9	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.327**	**No**	4.79	4.05	64%
Sediment	D	SVOCs		Fluorene	ug/Kg	9.9	18	0%	0%	100%	-	-	-	-	9.5	11	19	0%	0%	100%	-	-	-	-	9.8	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	SVOCs		Indeno(1,2,3-cd)pyrene	ug/Kg	9.9	18	50%	0%	100%	4.20	2.49	2	8.8	9.8	10	19	47%	0%	100%	3.86	1.15	2.2	5.7	9.8	10	-	-	-	-	-	All Samples are Censored at Median MRL	**-**	**-**			
Sediment	D	SVOCs		p-cresol (4-Methylphenol)	ug/Kg	10	18	61%	22%	78%	40.2	64.9	4.5	210	9.8	10	19	32%	16%	84%	7.85	4.27	4.8	21	9.8	10	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.768**	**No**	45.3	38.3	95%
Sediment	D	SVOCs		Phenanthrene	ug/Kg	9.9	18	89%	0%	100%	2.96	1.10	1.3	5.9	9.9	10	19	74%	0%	100%	3.59	1.93	1.4	7.4	9.8	10	-	-	-	-	-	All Samples are Censored at Median MRL	**-**	**-**			
Sediment	D	SVOCs		Pyrene	ug/Kg	9.8	18	100%	6%	94%	5.02	4.89	1.5	23	-	-	19	84%	16%	84%	5.34	4.02	1.8	17	9.8	9.9	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.191**	**No**	4.46	3.77	75%
Sediment	D	SVOCs - PAHs		HPAH	ug/kg	98	18	100%	6%	94%	45.2	27.3	20.0	129.4	-	-	19	84%	0%	100%	42.1	21.9	16.5	83.0	98.0	99.0	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.835**	**No**	24.7	20.8	46%
Sediment	D	SVOCs - PAHs		LPAH	ug/kg	39.6	18	89%	0%	100%	31.9	2.6	24.6	35.1	39.6	40.0	19	74%	0%	100%	30.5	2.9	23.5	34.6	39.2	40.0	-	-	-	-	-	All Samples are Censored at Median MRL	**-**	**-**			
Sediment	D	SVOCs - PAHs		PAH	ug/kg	137.2	18	100%	6%	94%	59.8	33.0	25.6	146.6	-	-	19	84%	0%	100%	55.3	26.1	23.1	103.7	137.2	138.6	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.835**	**No**	29.6	25.0	42%
Clam	W	Metals		Aluminum	mg/Kg	-	18	100%	100%	0%	29.8	19.2	8	83.4	-	-	19	100%	100%	0%	32.6	25.4	9.37	83.2	-	-	0.025	0.949	0.002	0.110	Lognormal	t-Test (lognormal)	**0.499**	**No**	22.6	19.1	64%
Clam	W	Metals		Antimony	mg/Kg	0.01	18	17%	0%	100%	0.00567	0.00170	0.004	0.008	0.009	0.011	19	26%	0%	100%	0.00360	0.00185	0.002	0.007	0.008	0.012	-	-	-	-	-	All Samples are Censored at Median MRL	**-**	**-**			
Clam	W	Metals		Arsenic	mg/Kg	-	18	100%	100%	0%	2.30	0.19	2	2.62	-	-	19	100%	100%	0%	2.22	0.22	1.79	2.49	-	-	0.463	0.346	0.125	0.078	Normal	t-Test (normal)	**0.879**	**No**	0.205	0.173	8%
Clam	W	Metals		Barium	mg/Kg	-	18	100%	100%	0%	1.89	0.18	1.71	2.38	-	-	19	100%	100%	0%	1.87	0.46	1.18	3.05	-	-	0.004	0.010	0.380	0.880	Non-parametric	Wilcoxon Rank Sum Test	**0.803**	**No**	0.355	0.300	16%
Clam	W	Metals		Beryllium	mg/Kg	0.0042	18	50%	0%	100%	0.000844	0.000283	0.0004	0.0014	0.0039	0.0045	19	100%	0%	100%	0.00188	0.00075	0.0007	0.0038	-	-	-	-	-	-	-	All Samples are Censored at Median MRL	**-**	**-**			
Clam	W	Metals		Cadmium	mg/Kg	-	18	100%	100%	0%	0.332	0.044	0.247	0.405	-	-	19	100%	100%	0%	0.363	0.050	0.286	0.461	-	-	0.811	0.410	0.839	0.839	Normal	t-Test (normal)	**0.026**	**Yes**			
Clam	W	Metals		Chromium	mg/Kg	-	18	100%	100%	0%	0.548	0.100	0.45	0.76	-	-	19	100%	100%	0%	0.595	0.189	0.3	0.9	-	-	0.007	0.015	0.337	0.143	Non-parametric	Wilcoxon Rank Sum Test	**0.161**	**No**	0.152	0.129	23%
Clam	W	Metals		Cobalt	mg/Kg	-	18	100%	100%	0%	0.117	0.020	0.0902	0.15	-	-	19	100%	100%	0%	0.106	0.027	0.067	0.148	-	-	0.142	0.144	0.196	0.097	Normal	t-Test (normal)	**0.917**	**No**	0.0236	0.0199	17%
Clam	W	Metals		Copper	mg/Kg	-	18	100%	100%	0%	9.74	0.84	8.18	11.6	-	-	19	100%	100%	0%	9.15	1.04	7	11.4	-	-	0.932	0.951	0.948	0.905	Normal	t-Test (normal)	**0.969**	**No**	0.946	0.800	8%
Clam	W	Metals		Lead	mg/Kg	-	18	100%	100%	0%	0.0616	0.0063	0.049	0.072	-	-	19	100%	100%	0%	0.0431	0.0193	0.021	0.089	-	-	0.293	0.232	0.010	0.167	Lognormal	t-Test (lognormal)	**1.000**	**No**	0.0145	0.0123	20%
Clam	W	Metals		Mercury	mg/Kg	-	18	100%	100%	0%	0.00892	0.00366	0.0046	0.0179	-	-	19	100%	100%	0%	0.0111	0.0063	0.0058	0.0341	-	-	0.032	0.301	0.000	0.022	Non-parametric	Wilcoxon Rank Sum Test	**0.081**	**No**	0.00520	0.00439	49%
Clam	W	Metals		Methyl Mercury	mg/Kg	-	18	100%	100%	0%	0.00534	0.00202	0.0014	0.0099	-	-	19	100%	100%	0%	0.00475	0.00081	0.0035	0.0065	-	-	0.293	0.003	0.202	0.281	Normal	t-Test (normal)	**0.868**	**No**	0.00152	0.00129	24%
Clam	W	Metals		Nickel	mg/Kg	-	18	100%	100%	0%	0.354	0.052	0.273	0.482	-	-	19	100%	100%	0%	0.227	0.085	0.095	0.348	-	-	0.438	0.773	0.101	0.040	Normal	t-Test (normal)	**1.000**	**No**	0.0711	0.0601	17%
Clam	W	Metals		Thallium	mg/Kg	-	18	100%	100%	0%	0.00676	0.00128	0.0053	0.0105	-	-	19	100%	100%	0%	0.00692	0.00187	0.0045	0.0119	-	-	0.006	0.058	0.047	0.533	Lognormal	t-Test (lognormal)	**0.461**	**No**	0.00161	0.00136	20%
Clam	W	Metals		Vanadium	mg/Kg	-	18	100%	100%	0%	0.145	0.050	0.074	0.286	-	-	19	100%	100%	0%	0.177	0.099	0.078	0.426	-	-	0.091	0.619	0.013	0.177	Lognormal	t-Test (lognormal)	**0.215**	**No**	0.0791	0.0668	46%
Clam	W	Metals		Zinc	mg/Kg	-	18	100%	100%	0%	21.0	1.5	18.5	23.2	-	-	19	100%	100%	0%	21.4	2.8	16.3	26.5	-	-	0.633	0.605	0.840	0.779	Normal	t-Test (normal)	**0.308**	**No**	2.28	1.92	9%
Clam	W	PCB Aroclors		Aroclor 1016	ug/Kg	12	18	0%	0%	100%	-	-	-	-	9.8	15	19	0%	0%	100%	-	-	-	-	9.8	23	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1221	ug/Kg	20	18	0%	0%	100%	-	-	-	-	20	20	19	0%	0%	100%	-	-	-	-	20	20	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1232	ug/Kg	24	18	0%	0%	100%	-	-	-	-	18	35	19	0%	0%	100%	-	-	-	-	9.8	40	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1242	ug/Kg	12	18	0%	0%	100%	-	-	-	-	9.7	14	19	0%	0%	100%	-	-	-	-	9.8	48	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1248	ug/Kg	9.9	18	0%	0%	100%	-	-	-	-	9.6	10	19	0%	0%	100%	-	-	-	-	9.6	26	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1254	ug/Kg	32	18	100%	89%	11%	34.9	2.6	30	39	-	-	19	47%	11%	89%	27.7	21.9	21	120	28	74	-	-	-	-	-	Wilcoxon Rank Sum Test	**1.000**	**No**	15.8	13.4	38%
Clam	W	PCB Aroclors		Aroclor 1260	ug/Kg	9.9	18	0%	0%	100%	-	-	-	-	9.6	10	19	0%	0%	100%	-	-	-	-	9.6	11	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1262	ug/Kg	9.9	18	0%	0%	100%	-	-	-	-	9.6	10	19	0%	0%	100%	-	-	-	-	9.6	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Aroclors		Aroclor 1268	ug/Kg	9.9	18	0%	0%	100%	-	-	-	-	9.6	10	19	0%	0%	100%	-	-	-	-	9.6	10	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	SVOCs		Acenaphthene	ug/Kg	0.5	18	100%	72%	28%	0.647	0.233	0.27	1.2	-	-	19	95%	84%	16%	1.03	0.75	0.42	4.1	0.5	0.5	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.004**	**Yes**			
Clam	W	SVOCs		Anthracene	ug/Kg	2.5	18	11%	0%	100%	1.33	0.48	0.85	1.8	2.3	3.2	19	79%	0%	100%	0.905	0.474	0.28	2.3	0.47	2.5	-	-	-	-	-	All Samples are Censored at Median MRL	**-**	**-**			
Clam	W	SVOCs		Benzo(a)anthracene	ug/Kg	16	18	0%	0%	100%	-	-	-	-	3.7	27	19	42%	0%	100%	0.891	0.462	0.48	2.1	0.47	22	-	-	-	-	-	Contingency Table Analysis	**0.002**	**Yes**			
Clam	W	SVOCs		Benzo(a)pyrene	ug/Kg	2.5	18	0%	0%	100%	-	-	-	-	2.3	2.5	19	16%	0%	100%	0.429	0.061	0.38	0.58	0.47	2.5	-	-	-	-	-	Contingency Table Analysis	**0.125**	**No**			
Clam	W	SVOCs		Benzo(b)fluoranthene	ug/Kg	2.5	18	0%	0%	100%	-	-	-	-	2.3	2.5	19	47%	0%	100%	0.624	0.164	0.4	0.95	0.48	2.5	-	-	-	-	-	Contingency Table Analysis	**0.001**	**Yes**			
Clam	W	SVOCs		Benzo(g,h,i)perylene	ug/Kg	2.5	18	28%	0%	100%	0.950	0.385	0.5	1.4	2.3	2.5	19	42%	0%	100%	0.205	0.094	0.09	0.36	0.47	2.5	-	-	-	-	-	All Samples are Censored at Median MRL	**-**	**-**			
Clam	W	SVOCs		Benzo(k)fluoranthene	ug/Kg	2.5	18	0%	0%	100%	-	-	-	-	2.3	2.5	19	11%	0%	100%	0.205	0.045	0.16	0.25	0.47	2.5	-	-	-	-	-	Contingency Table Analysis	**0.257**	**No**			
Clam	W	SVOCs		Bis(2-ethylhexyl) Phthalate	ug/Kg	-	18	100%	100%	0%	444	115	310	680	-	-	19	100%	100%	0%	393	324	67	890	-	-	0.043	0.264	0.000	0.001	Non-parametric	Wilcoxon Rank Sum Test	**0.807**	**No**	246	208	47%
Clam	W	SVOCs		Butyl Benzyl Phthalate	ug/Kg	40	18	17%	17%	83%	61.3	7.4	57	74	39	98	19	16%	0%	100%	14.0	0.8	13	15	36	56	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.964**	**No**	5.16	4.36	7%
Clam	W	SVOCs		Carbazole	ug/Kg	39	18	0%	0%	100%	-	-	-	-	35	40	19	0%	0%	100%	-	-	-	-	36	56	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	SVOCs		Chrysene	ug/Kg	5.2	18	0%	0%	100%	-	-	-	-	2.5	13	19	42%	0%	100%	2.55	0.72	1.9	4	0.47	7.8	-	-	-	-	-	Contingency Table Analysis	**0.002**	**Yes**			
Clam	W	SVOCs		Dibenz(a,h)anthracene	ug/Kg	2.4	18	0%	0%	100%	-	-	-	-	2.3	2.5	19	0%	0%	100%	-	-	-	-	0.47	2.5	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	SVOCs		Di-n-butyl Phthalate	ug/Kg	39	18	0%	0%	100%	-	-	-	-	35	48	19	0%	0%	100%	-	-	-	-	36	56	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	SVOCs		Di-n-octyl Phthalate	ug/Kg	38.5	18	0%	0%	100%	-	-	-	-	35	40	19	5%	0%	100%	-	-	38	38	36	56	-	-	-	-	-	Contingency Table Analysis	**0.514**	**No**			
Clam	W	SVOCs		Fluoranthene	ug/Kg	14	18	100%	22%	78%	12.0	2.0	8.5	17	-	-	19	74%	11%	89%	10.5	2.5	6.3	16	8.6	16	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.515**	**No**	2.30	1.94	16%
Clam	W	SVOCs		Fluorene	ug/Kg	-	18	100%	100%	0%	2.08	0.43	1.5	3.1	-	-	19	100%	100%	0%	2.25	0.65	0.92	3.8	-	-	0.189	0.595	0.962	0.366	Normal	t-Test (normal)	**0.171**	**No**	0.556	0.470	23%

Table L-5. Statistical Comparison of Forebay Data to Reference Area Data -- MRL Censored

							Reference Area										Forebay Area										Shapiro-Wilk W Test					Statistical Comparison(α = 5%)			If "No", Power Analysis (Normal Approximation)		
Medium	Basis	Analyte Group	IUPAC #	Analyte	Unit	Median MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	Ref Normality Test p-value	Ref Log-normality Test p-value	Site Normality Test p-value	Site Log-normality Test p-value	Distribution	Appropriate Statistical Test	Comparison p-value	Significant Higher Conc in Forebay?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Clam	W	SVOCs		Indeno(1,2,3-cd)pyrene	ug/Kg	2.5	18	39%	0%	100%	1.43	0.43	0.8	2	2.4	2.5	19	32%	5%	95%	0.316	0.532	0.08	2.5	0.47	2.5	-	-	-	-	-	All Samples are Censored at Median MRL	-	-			
Clam	W	SVOCs		p-cresol (4-Methylphenol)	ug/Kg	40	18	100%	61%	39%	46.5	22.4	13	110	-	-	19	53%	0%	100%	15.9	7.2	8.6	31	36	56	-	-	-	-	-	Wilcoxon Rank Sum Test	**1.000**	**No**	16.5	13.9	30%
Clam	W	SVOCs		Phenanthrene	ug/Kg	-	18	100%	100%	0%	9.60	1.95	6.7	14	-	-	19	100%	100%	0%	9.45	2.66	4.5	15	-	-	0.067	0.340	0.976	0.566	Normal	t-Test (normal)	**0.578**	**No**	2.34	1.98	21%
Clam	W	SVOCs		Pyrene	ug/Kg	3.7	18	0%	0%	100%	-	-	-	-	2.5	5.6	19	37%	5%	95%	2.26	1.14	1.6	6.3	0.47	7.2	-	-	-	-	-	Contingency Table Analysis	**0.005**	**Yes**			
Crayfish	W	Metals		Aluminum	mg/Kg	-	19	100%	100%	0%	134	39	71.2	221	-	-	17	100%	100%	0%	105	23	71.4	157	-	-	0.880	0.911	0.045	0.302	Lognormal	t-Test (lognormal)	**0.992**	**No**	32.6	28.3	21%
Crayfish	W	Metals		Antimony	mg/Kg	-	19	100%	100%	0%	0.0153	0.0090	0.006	0.039	-	-	17	100%	100%	0%	0.0288	0.0308	0.009	0.133	-	-	0.009	0.391	0.000	0.050	Lognormal	t-Test (lognormal)	**0.018**	**Yes**			
Crayfish	W	Metals		Arsenic	mg/Kg	-	19	100%	100%	0%	0.383	0.084	0.275	0.636	-	-	17	100%	100%	0%	0.479	0.092	0.38	0.68	-	-	0.027	0.375	0.025	0.082	Lognormal	t-Test (lognormal)	**0.001**	**Yes**			
Crayfish	W	Metals		Barium	mg/Kg	-	19	100%	100%	0%	68.2	19.9	40.2	120	-	-	17	100%	100%	0%	65.4	9.6	51.7	84.3	-	-	0.229	0.664	0.537	0.713	Normal	t-Test (normal)	**0.703**	**No**	15.9	13.8	20%
Crayfish	W	Metals		Beryllium	mg/Kg	-	19	100%	100%	0%	0.00349	0.00080	0.0026	0.0061	-	-	17	100%	100%	0%	0.00316	0.00059	0.0017	0.0041	-	-	0.002	0.067	0.520	0.042	Non-parametric	Wilcoxon Rank Sum Test	**0.826**	**No**	0.000710	0.000618	18%
Crayfish	W	Metals		Cadmium	mg/Kg	-	19	100%	100%	0%	0.0942	0.0392	0.046	0.201	-	-	17	100%	100%	0%	0.107	0.046	0.061	0.21	-	-	0.108	0.858	0.024	0.164	Lognormal	t-Test (lognormal)	**0.183**	**No**	0.0424	0.0369	39%
Crayfish	W	Metals		Chromium	mg/Kg	0.25	19	95%	74%	26%	0.473	0.308	0.12	1.23	0.25	0.25	17	100%	94%	6%	0.659	0.248	0.2	1.2	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.012**	**Yes**			
Crayfish	W	Metals		Cobalt	mg/Kg	-	19	100%	100%	0%	0.331	0.058	0.224	0.439	-	-	17	100%	100%	0%	0.233	0.019	0.192	0.262	-	-	0.738	0.435	0.646	0.442	Normal	t-Test (normal)	**1.000**	**No**	0.0441	0.0384	12%
Crayfish	W	Metals		Copper	mg/Kg	-	19	100%	100%	0%	18.2	5.1	12.2	33.2	-	-	17	100%	100%	0%	19.6	5.9	10.5	36	-	-	0.002	0.055	0.097	0.907	Lognormal	t-Test (lognormal)	**0.225**	**No**	5.50	4.79	26%
Crayfish	W	Metals		Lead	mg/Kg	-	19	100%	100%	0%	0.413	0.369	0.056	1.55	-	-	17	100%	100%	0%	0.603	0.635	0.098	2.66	-	-	0.001	0.998	0.000	0.240	Lognormal	t-Test (lognormal)	**0.191**	**No**	0.512	0.445	108%
Crayfish	W	Metals		Mercury	mg/Kg	-	19	100%	100%	0%	0.0176	0.0031	0.0105	0.0246	-	-	17	100%	100%	0%	0.0221	0.0036	0.0157	0.0315	-	-	0.811	0.357	0.329	0.587	Normal	t-Test (normal)	**0.000**	**Yes**			
Crayfish	W	Metals		Methyl Mercury	mg/Kg	-	19	100%	100%	0%	0.0269	0.0057	0.0181	0.0367	-	-	17	100%	100%	0%	0.0311	0.0044	0.025	0.04	-	-	0.450	0.590	0.535	0.642	Normal	t-Test (normal)	**0.011**	**Yes**			
Crayfish	W	Metals		Nickel	mg/Kg	-	19	100%	100%	0%	1.80	0.62	0.992	3.44	-	-	17	100%	100%	0%	4.75	0.30	4.31	5.35	-	-	0.127	0.749	0.284	0.423	Normal	t-Test (normal)	**0.000**	**Yes**			
Crayfish	W	Metals		Thallium	mg/Kg	-	19	100%	100%	0%	0.0216	0.0056	0.014	0.037	-	-	17	100%	100%	0%	0.0184	0.0045	0.0117	0.0292	-	-	0.029	0.358	0.123	0.644	Lognormal	t-Test (lognormal)	**0.973**	**No**	0.00510	0.00444	21%
Crayfish	W	Metals		Vanadium	mg/Kg	-	19	100%	100%	0%	0.574	0.161	0.261	0.804	-	-	17	100%	100%	0%	0.435	0.070	0.3	0.6	-	-	0.220	0.046	0.003	0.004	Non-parametric	Wilcoxon Rank Sum Test	**0.995**	**No**	0.127	0.110	19%
Crayfish	W	Metals		Zinc	mg/Kg	-	19	100%	100%	0%	21.6	3.9	18	36.5	-	-	17	100%	100%	0%	20.5	1.6	16.9	23.2	-	-	0.000	0.000	0.915	0.713	Non-parametric	Wilcoxon Rank Sum Test	**0.747**	**No**	3.05	2.66	12%
Crayfish	W	PCB Aroclors		Aroclor 1016	ug/Kg	9.9	19	0%	0%	100%	-	-	-	-	9.4	20	17	0%	0%	100%	-	-	-	-	9.6	10	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1221	ug/Kg	20	19	0%	0%	100%	-	-	-	-	19	40	17	0%	0%	100%	-	-	-	-	20	20	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1232	ug/Kg	9.9	19	0%	0%	100%	-	-	-	-	9.4	20	17	0%	0%	100%	-	-	-	-	9.6	10	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1242	ug/Kg	9.9	19	0%	0%	100%	-	-	-	-	9.4	20	17	0%	0%	100%	-	-	-	-	9.6	10	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1248	ug/Kg	9.9	19	0%	0%	100%	-	-	-	-	9.4	20	17	0%	0%	100%	-	-	-	-	9.6	10	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1254	ug/Kg	9.9	19	0%	0%	100%	-	-	-	-	9.4	20	17	0%	0%	100%	-	-	-	-	9.6	19	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1260	ug/Kg	9.9	19	0%	0%	100%	-	-	-	-	9.4	20	17	0%	0%	100%	-	-	-	-	9.6	17	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1262	ug/Kg	9.9	19	0%	0%	100%	-	-	-	-	9.4	20	17	0%	0%	100%	-	-	-	-	9.6	10	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	PCB Aroclors		Aroclor 1268	ug/Kg	9.9	19	0%	0%	100%	-	-	-	-	9.4	20	17	0%	0%	100%	-	-	-	-	9.6	10	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	SVOCs		Acenaphthene	ug/Kg	0.49	18	17%	0%	100%	0.147	0.031	0.12	0.19	0.45	0.5	15	47%	0%	100%	0.170	0.050	0.11	0.26	0.47	0.5	-	-	-	-	-	All Samples are Censored at Median MRL	-	-			
Crayfish	W	SVOCs		Anthracene	ug/Kg	0.49	18	11%	0%	100%	0.144	0.046	0.098	0.19	0.45	0.5	15	27%	0%	100%	0.111	0.036	0.069	0.16	0.46	0.5	-	-	-	-	-	All Samples are Censored at Median MRL	-	-			
Crayfish	W	SVOCs		Benzo(a)anthracene	ug/Kg	0.49	18	11%	0%	100%	0.355	0.045	0.31	0.4	0.45	0.5	15	67%	0%	100%	0.269	0.033	0.23	0.35	0.47	0.5	-	-	-	-	-	All Samples are Censored at Median MRL	-	-			
Crayfish	W	SVOCs		Benzo(a)pyrene	ug/Kg	0.49	18	6%	0%	100%	-	-	0.12	0.12	0.45	0.5	15	20%	0%	100%	0.150	0.022	0.12	0.17	0.46	0.5	-	-	-	-	-	Contingency Table Analysis	**0.234**	**No**			
Crayfish	W	SVOCs		Benzo(b)fluoranthene	ug/Kg	0.49	18	22%	0%	100%	0.150	0.066	0.082	0.23	0.48	0.5	15	47%	0%	100%	0.143	0.057	0.096	0.24	0.46	0.5	-	-	-	-	-	All Samples are Censored at Median MRL	-	-			
Crayfish	W	SVOCs		Benzo(g,h,i)perylene	ug/Kg	0.49	18	0%	0%	100%	-	-	-	-	0.45	0.5	15	27%	0%	100%	0.205	0.111	0.098	0.39	0.46	0.5	-	-	-	-	-	Contingency Table Analysis	**0.033**	**Yes**			
Crayfish	W	SVOCs		Benzo(k)fluoranthene	ug/Kg	0.49	18	22%	0%	100%	0.136	0.055	0.072	0.2	0.48	0.5	15	47%	0%	100%	0.116	0.026	0.086	0.16	0.46	0.5	-	-	-	-	-	All Samples are Censored at Median MRL	-	-			
Crayfish	W	SVOCs		Bis(2-ethylhexyl) Phthalate	ug/Kg	200	18	22%	0%	100%	75.5	7.2	69	87	190	200	15	27%	0%	100%	83.0	17.8	67	110	180	200	-	-	-	-	-	All Samples are Censored at Median MRL	-	-			
Crayfish	W	SVOCs		Butyl Benzyl Phthalate	ug/Kg	39	18	17%	0%	100%	21.3	6.9	15	31	38	40	15	0%	0%	100%	-	-	-	-	35	40	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Crayfish	W	SVOCs		Carbazole	ug/Kg	39	18	0%	0%	100%	-	-	-	-	38	40	15	0%	0%	100%	-	-	-	-	35	40	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	SVOCs		Chrysene	ug/Kg	0.49	18	28%	0%	100%	0.170	0.078	0.091	0.27	0.48	0.5	15	53%	0%	100%	0.143	0.072	0.082	0.31	0.47	0.5	-	-	-	-	-	All Samples are Censored at Median MRL	-	-			
Crayfish	W	SVOCs		Dibenz(a,h)anthracene	ug/Kg	0.49	18	17%	0%	100%	0.117	0.036	0.072	0.16	0.45	0.5	15	0%	0%	100%	-	-	-	-	0.46	0.5	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Crayfish	W	SVOCs		Di-n-butyl Phthalate	ug/Kg	40	18	0%	0%	100%	-	-	-	-	38	110	15	0%	0%	100%	-	-	-	-	35	180	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	SVOCs		Di-n-octyl Phthalate	ug/Kg	39	18	6%	0%	100%	-	-	32	32	38	40	15	0%	0%	100%	-	-	-	-	35	40	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Crayfish	W	SVOCs		Fluoranthene	ug/Kg	0.49	18	0%	0%	100%	-	-	-	-	0.45	0.5	15	100%	20%	80%	0.349	0.156	0.17	0.75	-	-	-	-	-	-	-	Contingency Table Analysis	**0.000**	**Yes**			
Crayfish	W	SVOCs		Fluorene	ug/Kg	0.49	18	11%	0%	100%	0.215	0.035	0.18	0.25	0.45	0.5	15	33%	0%	100%	0.170	0.023	0.15	0.21	0.46	0.5	-	-	-	-	-	All Samples are Censored at Median MRL	-	-			
Crayfish	W	SVOCs		Indeno(1,2,3-cd)pyrene	ug/Kg	0.49	18	17%	0%	100%	0.132	0.038	0.087	0.18	0.45	0.5	15	20%	0%	100%	0.173	0.009	0.16	0.18	0.46	0.5	-	-	-	-	-	All Samples are Censored at Median MRL	-	-			
Crayfish	W	SVOCs		p-cresol (4-Methylphenol)	ug/Kg	39	18	0%	0%	100%	-	-	-	-	38	40	15	0%	0%	100%	-	-	-	-	35	40	-	-	-	-	-	All Samples are NDs	-	-			
Crayfish	W	SVOCs		Phenanthrene	ug/Kg	0.49	18	28%	17%	83%	0.471	0.043	0.45	0.59	0.45	0.5	15	67%	33%	67%	0.512	0.133	0.42	0.86	0.46	0.49	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.119**	**No**	0.0948	0.0880	19%
Crayfish	W	SVOCs		Pyrene	ug/Kg	0.49	18	0%	0%	100%	-	-	-	-	0.45	0.5	15	100%	7%	93%	0.361	0.250	0.16	1.2	-	-	-	-	-	-	-	Contingency Table Analysis	**0.000**	**Yes**			
Sculpin	W	Metals		Arsenic	mg/Kg	-	18	100%	100%	0%	0.382	0.074	0.239	0.484	-	-	17	100%	100%	0%	0.312	0.077	0.184	0.435	-	-	0.453	0.338	0.181	0.341	Normal	t-Test (normal)	**0.995**	**No**	0.0754	0.0656	17%
Sculpin	W	Metals		Cadmium	mg/Kg	-	18	100%	100%	0%	0.0152	0.0047	0.0087	0.0264	-	-	17	100%	100%	0%	0.0201	0.0091	0.0072	0.0453	-	-	0.096	0.891	0.050	0.947	Lognormal	t-Test (lognormal)	**0.032**	**Yes**			
Sculpin	W	Metals		Lead	mg/Kg	0.0214	18	94%	94%	6%	0.0360	0.0130	0.0239	0.0758	0.0214	0.0214	17	94%	94%	6%	0.0759	0.0640	0.0313	0.306	0.0214	0.0214	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.002**	**Yes**			
Sculpin	W	Metals		Mercury	mg/Kg	-	18	100%	100%	0%	0.0876	0.0258	0.0448	0.141	-	-	17	100%	100%	0%	0.152	0.083	0.0327	0.308	-	-	0.513	0.712	0.437	0.367	Normal	t-Test (normal)	**0.003**	**Yes**			
Sculpin	W	PCB Aroclors		Aroclor 1016	ug/Kg	9.6	18	0%	0%	100%	-	-	-	-	9.2	10	17	0%	0%	100%	-	-	-	-	9.2	50	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1221	ug/Kg	20	18	0%	0%	100%	-	-	-	-	19	20	17	0%	0%	100%	-	-	-	-	19	99	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1232	ug/Kg	9.6	18	0%	0%	100%	-	-	-	-	9.2	10	17	0%	0%	100%	-	-	-	-	9.2	62	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1242	ug/Kg	9.6	18	0%	0%	100%	-	-	-	-	9.2	10	17	0%	0%	100%	-	-	-	-	9.2	50	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1248	ug/Kg	9.6	18	0%	0%	100%	-	-	-	-	9.2	45	17	0%	0%	100%	-	-	-	-	9.2	50	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1254	ug/Kg	27.5	18	0%	0%	100%	-	-	-	-	9.7	44	17	18%	18%	82%	242	373	130	1700	13	130	-	-	-	-	-	Contingency Table Analysis	**0.104**	**No**			
Sculpin	W	PCB Aroclors		Aroclor 1260	ug/Kg	9.7	18	0%	0%	100%	-	-	-	-	9.2	10	17	0%	0%	100%	-	-	-	-	9.2	82	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1262	ug/Kg	9.6	18	0%	0%	100%	-	-	-	-	9.2	10	17	0%	0%	100%	-	-	-	-	9.2	50	-	-	-	-	-	All Samples are NDs	-	-			
Sculpin	W	PCB Aroclors		Aroclor 1268	ug/Kg	9.6	18	0%	0%	100%	-	-	-	-	9.2	10	17	0%	0%	100%	-	-	-	-	9.2	50	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	Metals		Aluminum	mg/Kg	-	19	100%	100%	0%	2.50	2.31	0.33	10.1	-	-	19	100%	100%	0%	5.05	4.13	1.06	15.5	-	-	0.001	0.998	0.010	0.248	Lognormal	t-Test (lognormal)	**0.007**	**Yes**			
Smallmouth Bass	W	Metals		Antimony	mg/Kg	0.013	19	21%	5%	95%	0.00416	0.00491	0.003	0.025	0.011	0.018	19	0%	0%	100%	-	-	-	-	0.012	0.015	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Smallmouth Bass	W	Metals		Arsenic	mg/Kg	-	19	100%	100%	0%	0.354	0.151	0.159	0.761	-	-	19	100%	100%	0%	0.412	0.150	0.17	0.7	-	-	0.025	0.807	0.755	0.097	Lognormal	t-Test (lognormal)	**0.127**	**No**	0.151	0.124	35%
Smallmouth Bass	W	Metals		Barium	mg/Kg	-	19	100%	100%	0%	1.10	0.39	0.43	1.72	-	-	19	100%	100%	0%	1.51	0.56	0.72	2.64	-	-	0.480	0.133	0.362	0.783	Normal	t-Test (normal)	**0.006**	**Yes**			
Smallmouth Bass	W	Metals		Beryllium	mg/Kg	0.005	19	0%	0%	100%	-	-	-	-	0.004	0.006	19	21%	0%	100%	0.000600	0.000071	0.0005	0.0007	0.0048	0.0059	-	-	-	-	-	Contingency Table Analysis	**0.053**	**No**			
Smallmouth Bass	W	Metals		Cadmium	mg/Kg	-	19	100%	100%	0%	0.0813	0.0602	0.004	0.143	-	-	19	100%	100%	0%	0.00974	0.00667	0.004	0.028	-	-	0.000	0.000	0.000	0.061	Non-parametric	Wilcoxon Rank Sum Test	**0.989**	**No**	0.0428	0.0352	43%
Smallmouth Bass	W	Metals		Chromium	mg/Kg	0.29	19	63%	5%	95%	0.468	1.576	0.04	7.15	0.5	0.5	19	26%	11%	89%	0.241	0.149	0.19	0.86	0.24	0.3	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.500**	**No**	1.12	0.92	196%
Smallmouth Bass	W	Metals		Cobalt	mg/Kg	0.0267	19	63%	63%	37%	0.0563	0.0098	0.0487	0.0838	0.0248	0.0361	19	100%	100%	0%	0.0548	0.0080	0.0441	0.0758	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.198**	**No**	0.00894	0.00735	13%
Smallmouth Bass	W	Metals		Copper	mg/Kg	-	19	100%	100%	0%	0.510	0.133	0.327	0.73	-	-	19	100%	100%	0%	0.664	0.249	0.364	1.42	-	-	0.182	0.259	0.005	0.486	Lognormal	t-Test (lognormal)	**0.008**	**Yes**			
Smallmouth Bass	W	Metals		Lead	mg/Kg	0.014	19	63%	63%	37%	1.53	0.12	1.42	1.81	0.013	0.015	19	100%	26%	74%	0.0109	0.0079	0.004	0.036	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.999**	**No**	0.0872	0.0716	5%
Smallmouth Bass	W	Metals		Mercury	mg/Kg	-	19	100%	100%	0%	0.131	0.071	0.0548	0.333	-	-	19	100%	100%	0%	0.265	0.130	0.071	0.512	-	-	0.016	0.766	0.499	0.197	Lognormal	t-Test (lognormal)	**0.000**	**Yes**			
Smallmouth Bass	W	Metals		Nickel	mg/Kg	0.298	19	84%	84%	16%	0.980	0.499	0.324	1.79	0.277	0.306	19	100%	47%	53%	0.298	0.055	0.213	0.399	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**1.000**	**No**	0.355	0.292	30%
Smallmouth Bass	W	Metals		Thallium	mg/Kg	-	19	100%	100%	0%	0.0160	0.0041	0.0109	0.0261	-	-	19	100%	100%	0%	0.0148	0.0033	0.0079	0.0215	-	-	0.167	0.664	0.753	0.182	Normal	t-Test (normal)	**0.825**	**No**	0.00370	0.00304	19%
Smallmouth Bass	W	Metals		Vanadium	mg/Kg	0.056	19	95%	47%	53%	0.0576	0.0207	0.03	0.104	0.056	0.056	19	100%	47%	53%	0.0595	0.0244	0.03	0.13	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.450**	**No**	0.0226	0.0186	32%
Smallmouth Bass	W	Metals		Zinc	mg/Kg	-	19	100%	100%	0%	13.4	1.2	11.2	15.5	-	-	19	100%	100%	0%	14.2	1.6	11.4	18	-	-	0.530	0.513	0.854	0.955	Normal	t-Test (normal)	**0.042**	**Yes**			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1016	ug/Kg	10	19	0%	0%	100%	-	-	-	-	9.9	10	19	0%	0%	100%	-	-	-	-	9.9	1000	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1221	ug/Kg	20	19	0%	0%	100%	-	-	-	-	20	20	19	0%	0%	100%	-	-	-	-	20	2000	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1232	ug/Kg	10	19	0%	0%	100%	-	-	-	-	9.9	11	19	0%	0%	100%	-	-	-	-	9.9	1000	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1242	ug/Kg	10	19	21%	5%	95%	6.26	3.36	2.4	14	9.9	10	19	5%	5%	95%	-	-	260	260	9.9	1000	-	-	-	-	-	Contingency Table Analysis	**0.977**	**No**			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1248	ug/Kg	10	19	0%	0%	100%	-	-	-	-	9.9	33	19	0%	0%	100%	-	-	-	-	9.9	1000	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1254	ug/Kg	38	19	84%	53%	47%	49.5	22.3	27	110	10	130	19	37%	37%	63%	1948	4885	51	18000	11	420	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.500**	**No**	3454	2838	5732%
Smallmouth Bass	W	PCB Aroclors		Aroclor 1260	ug/Kg	24.5	19	0%	0%	100%	-	-	-	-	9.9	140	19	0%	0%	100%	-	-	-	-	10	1000	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1262	ug/Kg	10	19	0%	0%	100%	-	-	-	-	9.9	110	19	0%	0%	100%	-	-	-	-	10	1000	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	PCB Aroclors		Aroclor 1268	ug/Kg	10	19	0%	0%	100%	-	-	-	-	9.9	10	19	0%	0%	100%	-	-	-	-	9.9	1000	-	-	-	-	-	All Samples are NDs	-	-			
Smallmouth Bass	W	SVOCs		Acenaphthene	ug/Kg	0.485	19	95%	95%	5%	0.797	0.214	0.51	1.3	0.49	0.49	19	84%	26%	74%	0.554	0.506	0.16	1.6	0.46	0.49	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.996**	**No**	0.388	0.319	40%
Smallmouth Bass	W	SVOCs		Anthracene	ug/Kg	0.49	19	16%	0%	100%	0.230	0.119	0.09	0.38	0.47	4.8	19	95%	26%	74%	2.17	4.09	0.078	17	0.49	0.49	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.010**	**Yes**			
Smallmouth Bass	W	SVOCs		Benzo(a)anthracene	ug/Kg	0.49	19	16%	16%	84%	0.589	0.095	0.56	0.94	0.47	4.8	19	26%	26%	74%	2.08	3.63	1	17	0.46	5	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.143**	**No**	2.57	2.11	358%

Table L-5. Statistical Comparison of Forebay Data to Reference Area Data -- MRL Censored

							Reference Area										Forebay Area										Shapiro-Wilk W Test					Statistical Comparison(α = 5%)			If "No", Power Analysis (Normal Approximation)		
Medium	Basis	Analyte Group	IUPAC #	Analyte	Unit	Median MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median MRL	Percent of Data Censored at Median MRL	Mean	Std Dev	Min Detected Value	Max Detected Value	Min MRL of NDs	Max MRL of NDs	Ref Normality Test p-value	Ref Log-normality Test p-value	Site Normality Test p-value	Site Log-normality Test p-value	Distribution	Appropriate Statistical Test	Comparison p-value	Significant Higher Conc in Forebay?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Smallmouth Bass	W	SVOCs		Benzo(a)pyrene	ug/Kg	0.485	19	0%	0%	100%	-	-	-	-	0.47	4.8	19	42%	42%	58%	2.18	2.53	0.72	7.4	0.46	0.49	-	-	-	-	-	Contingency Table Analysis	**0.002**	**Yes**			
Smallmouth Bass	W	SVOCs		Benzo(b)fluoranthene	ug/Kg	0.49	19	0%	0%	100%	-	-	-	-	0.47	4.8	19	32%	26%	74%	1.09	1.69	0.11	4.4	0.46	1	-	-	-	-	-	Contingency Table Analysis	**0.010**	**Yes**			
Smallmouth Bass	W	SVOCs		Benzo(g,h,i)perylene	ug/Kg	0.49	19	0%	0%	100%	-	-	-	-	0.47	4.8	19	32%	26%	74%	1.01	1.04	0.42	3.3	0.46	0.99	-	-	-	-	-	Contingency Table Analysis	**0.010**	**Yes**			
Smallmouth Bass	W	SVOCs		Benzo(k)fluoranthene	ug/Kg	0.49	19	0%	0%	100%	-	-	-	-	0.47	4.8	19	47%	42%	58%	2.06	2.91	0.11	7.7	0.46	0.49	-	-	-	-	-	Contingency Table Analysis	**0.001**	**Yes**			
Smallmouth Bass	W	SVOCs		Bis(2-ethylhexyl) Phthalate	ug/Kg	190	19	11%	0%	100%	116	35	81	150	180	2500	19	37%	11%	89%	203	340	89	1600	170	5000	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.172**	**No**	241	198	172%
Smallmouth Bass	W	SVOCs		Butyl Benzyl Phthalate	ug/Kg	37	19	0%	0%	100%	-	-	-	-	35	40	19	11%	5%	95%	54.4	90.9	33	440	34	40	-	-	-	-	-	Contingency Table Analysis	**0.243**	**No**			
Smallmouth Bass	W	SVOCs		Carbazole	ug/Kg	37	19	0%	0%	100%	-	-	-	-	35	40	19	0%	0%	100%	-	-	-	-	34	40	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Smallmouth Bass	W	SVOCs		Chrysene	ug/Kg	0.49	19	5%	5%	95%	-	-	0.55	0.55	0.47	4.8	19	42%	42%	58%	1.76	2.47	0.5	10	0.46	0.49	-	-	-	-	-	Contingency Table Analysis	**0.009**	**Yes**			
Smallmouth Bass	W	SVOCs		Dibenz(a,h)anthracene	ug/Kg	0.49	19	0%	0%	100%	-	-	-	-	0.47	4.8	19	32%	26%	74%	1.16	1.30	0.41	4.1	0.46	0.99	-	-	-	-	-	Contingency Table Analysis	**0.010**	**Yes**			
Smallmouth Bass	W	SVOCs		Di-n-butyl Phthalate	ug/Kg	71	19	0%	0%	100%	-	-	-	-	40	280	19	5%	5%	95%	-	-	150	150	34	71	-	-	-	-	-	Contingency Table Analysis	**0.500**	**No**			
Smallmouth Bass	W	SVOCs		Di-n-octyl Phthalate	ug/Kg	37	19	5%	0%	100%	-	-	15	15	35	40	19	0%	0%	100%	-	-	-	-	34	40	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Smallmouth Bass	W	SVOCs		Fluoranthene	ug/Kg	0.49	19	58%	58%	42%	1.05	0.50	0.69	2.5	0.47	1.2	19	53%	53%	47%	1.93	2.27	0.49	6.5	0.46	0.49	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.500**	**No**	1.64	1.35	129%
Smallmouth Bass	W	SVOCs		Fluorene	ug/Kg	0.49	19	84%	84%	16%	1.31	0.33	0.89	2.1	0.49	2	19	89%	63%	37%	1.21	1.28	0.3	4.7	0.47	0.49	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.962**	**No**	0.932	0.766	58%
Smallmouth Bass	W	SVOCs		Indeno(1,2,3-cd)pyrene	ug/Kg	0.49	19	0%	0%	100%	-	-	-	-	0.47	4.8	19	37%	37%	63%	1.88	2.06	0.7	6.1	0.46	0.99	-	-	-	-	-	Contingency Table Analysis	**0.004**	**Yes**			
Smallmouth Bass	W	SVOCs		p-cresol (4-Methylphenol)	ug/Kg	37	19	0%	0%	100%	-	-	-	-	35	40	19	0%	0%	100%	-	-	-	-	34	40	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Smallmouth Bass	W	SVOCs		Phenanthrene	ug/Kg	-	19	100%	100%	0%	3.11	1.05	1.4	5.1	-	-	19	100%	100%	0%	2.09	1.75	0.54	5.7	-	-	0.306	0.493	0.000	0.082	Lognormal	t-Test (lognormal)	**0.999**	**No**	1.44	1.18	38%
Smallmouth Bass	W	SVOCs		Pyrene	ug/Kg	0.48	19	11%	0%	100%	0.400	0.020	0.38	0.42	0.47	4.8	19	47%	37%	63%	1.37	2.24	0.11	7.2	0.46	2.5	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.002**	**Yes**			

Table L-6. Statistical Comparison of Forebay Congener Data with Reference Area Congener Data

						Reference Area										Forebay Area										Shapiro-Wilk W Test					Statistical Comparison (α = 5%)			If "No", Power Analysis (Normal Approximation)		
Medium	Basis	Analyte Group	IUPAC #	Analyte	Unit	Median RDL or EMPC of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median RDL/EMPC	Percent of Data Censored at Median RDL/EMPC	Mean	Std Dev	Min Detected Value	Max Detected Value	Min RDL/EMPC of NDs	Max RDL/EMPC of NDs	No. of Samples	Detection Rate	Percent of Data NOT Censored at Median RDL/EMPC	Percent of Data Censored at Median RDL/EMPC	Mean	Std Dev	Min Detected Value	Max Detected Value	Min RDL/EMPC of NDs	Max RDL/EMPC of NDs	Ref Normality Test p-value	Ref Log-normality Test p-value	Site Normality Test p-value	Site Log-normality Test p-value	Distribution	Appropriate Statistical Test	Comparison p-value	Significant Higher Conc in Forebay?	Pooled Standard Deviation	Minimum Detectable Differences (MDD)	MDD as a Percentage of Ref Mean
Sediment	D	PCB Congeners	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	-	18	100%	100%	0%	1.02	0.36	0.434	2.01	-	-	19	100%	100%	0%	1.55	1.52	0.209	7.09	-	-	0.168	0.894	0.000	0.333	Lognormal	t-Test (lognormal)	**0.295**	**No**	1.12	0.945	93%
Sediment	D	PCB Congeners	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	0.0802	18	11%	6%	94%	0.0627	0.0195	0.058	0.143	0.049	0.1	19	0%	0%	100%	-	-	-	-	0.0486	3.4	-	-	-	-	-	Contingency Table Analysis	**1.000**	**No**			
Sediment	D	PCB Congeners	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	-	18	100%	100%	0%	8.95	5.21	2.96	27.5	-	-	19	100%	100%	0%	74.1	244	1.3	1080	-	-	0.000	0.243	0.000	0.062	Lognormal	t-Test (lognormal)	**0.035**	**Yes**			
Sediment	D	PCB Congeners	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	0.3445	18	89%	67%	33%	0.473	0.314	0.154	1.63	0.337	0.352	19	79%	68%	32%	4.07	13.3	0.174	60.3	0.058	1.71	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.029**	**Yes**			
Sediment	D	PCB Congeners	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	-	18	100%	100%	0%	25.7	16.5	8.31	70.5	-	-	19	100%	100%	0%	185	598	2.71	2650	-	-	0.000	0.269	0.000	0.097	Lognormal	t-Test (lognormal)	**0.049**	**Yes**			
Sediment	D	PCB Congeners	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	0.38	18	50%	28%	72%	0.439	0.265	0.272	1.22	0.172	0.446	19	58%	58%	42%	2.62	7.95	0.459	36.3	0.064	1.9	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.029**	**Yes**			
Sediment	D	PCB Congeners	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	0.147	18	50%	28%	72%	0.136	0.067	0.084	0.337	0.0583	0.185	19	16%	16%	84%	0.179	0.016	0.173	0.238	0.0479	2.69	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.818**	**No**	0.0479	0.0405	30%
Sediment	D	PCB Congeners	156	2,3,3',4,4',5-Hexachlorobiphenyl	pg/g	0.935	18	100%	94%	6%	2.93	1.65	0.93	8.5	-	-	19	95%	89%	11%	25.8	83.6	0.399	380	0.935	0.935	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.006**	**Yes**			
Sediment	D	PCB Congeners	157	2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**			
Sediment	D	PCB Congeners	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	0.675	18	83%	83%	17%	1.43	0.82	0.761	3.84	0.482	1.1	19	84%	79%	21%	8.27	24.7	0.461	113	0.173	0.71	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.010**	**Yes**			
Sediment	D	PCB Congeners	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	0.0971	18	0%	0%	100%	-	-	-	-	0.0542	0.2	19	0%	0%	100%	-	-	-	-	0.0454	0.879	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Sediment	D	PCB Congeners	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	0.2975	18	78%	17%	83%	0.231	0.116	0.072	0.573	0.159	0.357	19	47%	32%	68%	0.720	1.970	0.098	9.01	0.0479	0.814	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.113**	**No**	1.42	1.20	517%
Sediment	D	PCB Congeners		Sum 209 Congeners (KM-based)	pg/g	-	18	-	-	-	483	247	161	1204	-	-	19	-	-	-	2272	6672	61	29733	-	-	0.003	0.466	0.000	0.080	Lognormal	t-Test (lognormal)	**0.101**	**No**	4787	4045	837%
Clam	W	PCB Congeners	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	-	18	100%	100%	0%	39.1	4.2	33.2	46.8	-	-	17	100%	100%	0%	38.1	9.83	26.9	69	-	-	0.305	0.445	0.001	0.040	Non-parametric	Wilcoxon Rank Sum Test	**0.938**	**No**	7.48	6.51	17%
Clam	W	PCB Congeners	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	1.55	18	56%	56%	44%	2.04	0.29	1.8	2.75	0.961	2.23	17	24%	24%	76%	2.01	0.16	1.94	2.46	0.693	3.3	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.970**	**No**	0.240	0.209	10%
Clam	W	PCB Congeners	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	-	18	100%	100%	0%	446	53.9	350	556	-	-	17	100%	100%	0%	920	1405	361	6200	-	-	0.660	0.807	0.000	0.000	Non-parametric	Wilcoxon Rank Sum Test	**0.334**	**No**	979	852	191%
Clam	W	PCB Congeners	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	-	18	100%	100%	0%	26.2	3.06	21.3	33	-	-	17	100%	100%	0%	62.7	102	20.2	445	-	-	0.623	0.910	0.000	0.000	Non-parametric	Wilcoxon Rank Sum Test	**0.214**	**No**	71.1	61.8	236%
Clam	W	PCB Congeners	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	-	18	100%	100%	0%	2374	250	1910	2820	-	-	17	100%	100%	0%	8331	15120	2050	64700	-	-	0.672	0.724	0.000	0.001	Non-parametric	Wilcoxon Rank Sum Test	**0.028**	**Yes**			
Clam	W	PCB Congeners	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	-	18	100%	100%	0%	44.4	5.11	36.8	54	-	-	17	100%	100%	0%	157	269	38.4	1150	-	-	0.367	0.578	0.000	0.001	Non-parametric	Wilcoxon Rank Sum Test	**0.007**	**Yes**			
Clam	W	PCB Congeners	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	5.88	18	94%	0%	100%	4.79	0.49	4.03	5.64	5.88	5.88	17	100%	6%	94%	4.86	1.74	3.37	11	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.166**	**No**	1.26	1.10	23%
Clam	W	PCB Congeners	156	2,3,3',4,4',5-Hexachlorobiphenyl	pg/g	-	18	100%	100%	0%	141	13.3	123	166	-	-	17	100%	100%	0%	461	839	120	3610	-	-	0.368	0.391	0.000	0.001	Non-parametric	Wilcoxon Rank Sum Test	**0.043**	**Yes**			
Clam	W	PCB Congeners	157	2,3,3',4,4',5-Hexachlorobiphenyl	pg/g	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**			
Clam	W	PCB Congeners	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	-	18	100%	100%	0%	143	14.8	123	170	-	-	17	100%	100%	0%	562	901	125	3800	-	-	0.270	0.355	0.000	0.002	Non-parametric	Wilcoxon Rank Sum Test	**0.001**	**Yes**			
Clam	W	PCB Congeners	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	1.32	18	0%	0%	100%	-	-	-	-	0.698	1.73	17	0%	0%	100%	-	-	-	-	0.901	16.5	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Clam	W	PCB Congeners	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	1.51	18	94%	89%	11%	1.97	0.30	1.44	2.41	1.51	1.51	17	100%	100%	0%	2.49	2.05	1.52	10.1	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.666**	**No**	1.44	1.26	64%
Clam	W	PCB Congeners		Sum 209 Congeners (KM-based)	pg/g	-	18	-	-	-	30909	2314	26871	34451	-	-	17	-	-	-	55261	68859	24462	311599	-	-	0.630	0.562	0.000	0.000	Non-parametric	Wilcoxon Rank Sum Test	**0.276**	**No**	47976	41756	135%
Crayfish	W	PCB Congeners	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	-	17	100%	100%	0%	2.75	0.88	1.3	4.66	-	-	15	100%	100%	0%	5.96	5.38	1.57	20.7	-	-	0.837	0.991	0.001	0.402	Lognormal	t-Test (lognormal)	**0.009**	**Yes**			
Crayfish	W	PCB Congeners	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	0.1935	17	12%	0%	100%	0.168	0.003	0.167	0.176	0.104	0.401	15	27%	27%	73%	0.306	0.278	0.211	1.32	0.125	0.823	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.014**	**Yes**			
Crayfish	W	PCB Congeners	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	4.89	17	100%	59%	41%	8.40	6.07	1.97	24.8	-	-	15	80%	80%	20%	28.7	36.7	6.36	134	3.67	86.3	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.058**	**No**	25.5	23.7	282%
Crayfish	W	PCB Congeners	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	2.61	17	100%	88%	12%	3.70	1.33	2.36	8.15	-	-	15	93%	87%	13%	115	218	2.14	804	2.61	2.61	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.004**	**Yes**			
Crayfish	W	PCB Congeners	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	-	17	100%	100%	0%	129	70.5	52.6	323	-	-	15	100%	100%	0%	2038	3842	82.4	14000	-	-	0.004	0.637	0.000	0.004	Non-parametric	Wilcoxon Rank Sum Test	**0.007**	**Yes**			
Crayfish	W	PCB Congeners	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	3.11	17	100%	41%	59%	3.37	1.50	1.93	7.36	-	-	15	93%	80%	20%	70.2	128	2.11	460	3.11	3.11	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.003**	**Yes**			
Crayfish	W	PCB Congeners	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	0.397	17	35%	29%	71%	0.406	0.047	0.377	0.53	0.207	1.96	15	47%	33%	67%	1.11	1.97	0.238	7.83	0.397	3.51	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.275**	**No**	1.35	1.25	308%
Crayfish	W	PCB Congeners	156	2,3,3',4,4',5-Hexachlorobiphenyl	pg/g	-	17	100%	100%	0%	19.2	6.83	12.3	39.1	-	-	15	100%	100%	0%	593	1144	13.6	3910	-	-	0.006	0.266	0.000	0.002	Non-parametric	Wilcoxon Rank Sum Test	**0.016**	**Yes**			
Crayfish	W	PCB Congeners	157	2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**			
Crayfish	W	PCB Congeners	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	-	17	100%	100%	0%	13.8	6.37	8.16	30.1	-	-	15	100%	100%	0%	254	480	8.53	1530	-	-	0.001	0.051	0.000	0.003	Non-parametric	Wilcoxon Rank Sum Test	**0.005**	**Yes**			
Crayfish	W	PCB Congeners	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	0.2445	17	0%	0%	100%	-	-	-	-	0.0911	0.325	15	0%	0%	100%	-	-	-	-	0.167	2.95	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Crayfish	W	PCB Congeners	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	1.345	17	94%	12%	88%	1.20	0.34	0.767	2.2	1.14	1.14	15	80%	47%	53%	15.1	25.8	0.923	82.1	1.09	1.62	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.010**	**Yes**			
Crayfish	W	PCB Congeners		Sum 209 Congeners (KM-based)	pg/g	-	17	-	-	-	793	362	366	1940	-	-	15	-	-	-	6744	11572	536	42612	-	-	0.004	0.789	0.000	0.005	Non-parametric	Wilcoxon Rank Sum Test	**0.004**	**Yes**			
Sculpin	W	PCB Congeners	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	-	18	100%	100%	0%	15.1	4.91	5.19	25.9	-	-	17	100%	100%	0%	49.6	104	4.31	443	-	-	0.699	0.145	0.000	0.062	Lognormal	t-Test (lognormal)	**0.081**	**No**	72.5	63.1	418%
Sculpin	W	PCB Congeners	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	1.075	18	0%	0%	100%	-	-	-	-	0.689	2.21	17	6%	6%	94%	-	-	1.45	1.45	0.225	295	-	-	-	-	-	Contingency Table Analysis	**0.486**	**No**			
Sculpin	W	PCB Congeners	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	-	18	100%	100%	0%	692	200	358	1040	-	-	17	100%	100%	0%	20180	64900	303	269000	-	-	0.670	0.708	0.000	0.001	Non-parametric	Wilcoxon Rank Sum Test	**0.200**	**No**	45191	39332	5684%
Sculpin	W	PCB Congeners	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	-	18	100%	100%	0%	48.2	16.4	25	82.1	-	-	17	100%	100%	0%	1631	4820	21.2	19900	-	-	0.553	0.912	0.000	0.003	Non-parametric	Wilcoxon Rank Sum Test	**0.004**	**Yes**			
Sculpin	W	PCB Congeners	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	-	18	100%	100%	0%	2275	802	1050	3870	-	-	17	100%	100%	0%	59810	182500	870	757000	-	-	0.408	0.749	0.000	0.006	Non-parametric	Wilcoxon Rank Sum Test	**0.013**	**Yes**			
Sculpin	W	PCB Congeners	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	22.4	18	94%	67%	33%	30.4	9.71	15.3	47	32	32	17	94%	82%	18%	895	2758	19.6	11800	12.8	12.8	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.024**	**Yes**			
Sculpin	W	PCB Congeners	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	204.175	18	94%	0%	100%	4.17	1.08	2.54	5.93	3.35	3.35	17	94%	0%	100%	10.2	12.9	2.39	54	405	405	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.500**	**No**	9.02	7.85	188%
Sculpin	W	PCB Congeners	156	2,3,3',4,4',5-Hexachlorobiphenyl	pg/g	-	18	100%	100%	0%	275	106	140	464	-	-	17	100%	100%	0%	10240	28800	123	118000	-	-	0.067	0.180	0.000	0.003	Non-parametric	Wilcoxon Rank Sum Test	**0.002**	**Yes**			
Sculpin	W	PCB Congeners	157	2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**			
Sculpin	W	PCB Congeners	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	-	18	100%	100%	0%	108	38.2	51.9	175	-	-	17	100%	100%	0%	2507	7428	43.2	30800	-	-	0.192	0.425	0.000	0.006	Non-parametric	Wilcoxon Rank Sum Test	**0.013**	**Yes**			
Sculpin	W	PCB Congeners	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	4.105	18	0%	0%	100%	-	-	-	-	2.14	9.29	17	6%	0%	100%	-	-	3.65	3.65	1.45	164	-	-	-	-	-	Contingency Table Analysis	**0.486**	**No**			
Sculpin	W	PCB Congeners	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	5.659	18	89%	83%	17%	8.90	3.47	5.2	17.2	0.318	11	17	100%	100%	0%	219	600	5.86	2480	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.000**	**Yes**			
Sculpin	W	PCB Congeners		Sum 209 Congeners (KM-based)	pg/g	-	18	-	-	-	24189	7570	12243	38319	-	-	17	-	-	-	396515	1153555	9874	4773180	-	-	0.485	0.846	0.000	0.002	Non-parametric	Wilcoxon Rank Sum Test	**0.042**	**Yes**			
Smallmouth Bass	W	PCB Congeners	77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	-	19	100%	100%	0%	63.3	44.6	25.4	195	-	-	19	100%	100%	0%	774	2132	21.7	8950	-	-	0.000	0.022	0.000	0.015	Non-parametric	Wilcoxon Rank Sum Test	**0.045**	**Yes**			
Smallmouth Bass	W	PCB Congeners	81	3,4,4',5-Tetrachlorobiphenyl	pg/g	6.15	19	63%	5%	95%	3.80	3.06	2.02	15.9	2.53	20.5	19	89%	37%	63%	70.0	264.0	1.21	1190	6.15	23.1	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.009**	**Yes**			
Smallmouth Bass	W	PCB Congeners	105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	-	19	100%	100%	0%	2738	5079	498	23400	-	-	19	100%	100%	0%	129200	332100	717	1300000	-	-	0.000	0.001	0.000	0.060	Non-parametric	Wilcoxon Rank Sum Test	**0.004**	**Yes**			
Smallmouth Bass	W	PCB Congeners	114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	77	19	89%	68%	32%	257	629	29.2	2910	68.4	85.6	19	100%	95%	5%	9949	24390	59.4	89800	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.000**	**Yes**			
Smallmouth Bass	W	PCB Congeners	118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	-	19	100%	100%	0%	9619	21700	1330	98600	-	-	19	100%	100%	0%	347200	861700	2420	3270000	-	-	0.000	0.000	0.000	0.031	Non-parametric	Wilcoxon Rank Sum Test	**0.001**	**Yes**			
Smallmouth Bass	W	PCB Congeners	123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	45.25	19	89%	79%	21%	165	394	24.8	1830	43.5	47	19	100%	95%	5%	5690	14470	32.3	55300	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.002**	**Yes**			
Smallmouth Bass	W	PCB Congeners	126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	12.2	19	68%	32%	68%	14.0	15.0	5.61	74.6	10.7	30.1	19	95%	58%	42%	254	710	5.05	3030	48	48	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.017**	**Yes**			
Smallmouth Bass	W	PCB Congeners	156	2,3,3',4,4',5-Hexachlorobiphenyl	pg/g	-	19	100%	100%	0%	1651	4461	194	20000	-	-	19	100%	100%	0%	60870	137600	541	486000	-	-	0.000	0.000	0.000	0.051	Non-parametric	Wilcoxon Rank Sum Test	**0.000**	**Yes**			
Smallmouth Bass	W	PCB Congeners	157	2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**			
Smallmouth Bass	W	PCB Congeners	167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	-	19	100%	100%	0%	574	1450	84.3	6540	-	-	19	100%	100%	0%	16980	39680	161	140000	-	-	0.000	0.000	0.000	0.028	Non-parametric	Wilcoxon Rank Sum Test	**0.000**	**Yes**			
Smallmouth Bass	W	PCB Congeners	169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	4.855	19	0%	0%	100%	-	-	-	-	1.3	10.9	19	0%	0%	100%	-	-	-	-	1.29	607	-	-	-	-	-	All Samples are NDs	**-**	**-**			
Smallmouth Bass	W	PCB Congeners	189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	18.15	19	79%	63%	37%	56.4	114	13.3	532	16.5	23.2	19	100%	100%	0%	1318	2990	21.6	10100	-	-	-	-	-	-	-	Wilcoxon Rank Sum Test	**0.000**	**Yes**			
Smallmouth Bass	W	PCB Congeners		Sum 209 Congeners (KM-based)	pg/g	-	19	-	-	-	81480	106096	22101	498783	-	-	19	-	-	-	2941078	7172800	32118	2.65E+07	-	-	0.000	0.001	0.000	0.037	Non-parametric	Wilcoxon Rank Sum Test	**0.004**	**Yes**			

Table L-7
Mouth of Eagle Creek and Goose Island Analytical Results Comparison to Reference Area

	Forebay - Eagle Creek		Forebay - Goose Island		Reference		
	Minimum Value	Maximum Value	Minimum Value	Maximum Value	Minimum Value	Maximum Value	95% UPL
SEDIMENT							
PCB Aroclors (µg/kg dry)							
Aroclor 1016	1.70 U	1.70 U	2.50 U	2.70 U	1.70 U	13.0 U	Same as Max
Aroclor 1221	1.70 U	1.70 U	2.50 U	2.70 U	1.70 U	11.0 U	Same as Max
Aroclor 1232	1.70 U	1.70 U	2.50 U	2.70 U	1.70 U	12.0 U	Same as Max
Aroclor 1242	1.70 U	1.70 U	2.50 U	2.70 U	1.70 U	16.0 U	Same as Max
Aroclor 1248	1.70 U	**76.0**	2.50 U	2.70 U	1.70 U	1.80 U	Same as Max
Aroclor 1254	1.70 U	1.70 U	2.50 U	**9.90 J**	1.70 U	1.80 U	Same as Max
Aroclor 1260	1.70 U	1.70 U	2.50 UJ	2.70 UJ	1.70 U	1.80 U	Same as Max
Aroclor 1262	1.70 U	1.70 U	-	-	1.70 U	1.80 U	Same as Max
Aroclor 1268	1.70 U	1.70 U	-	-	1.70 U	1.80 U	Same as Max
Total PCBs as Aroclors (NDs at MDL) [1]	3.40 U	**77.7 J**	5.00 U	**12.6 J**	1.70 U	16.0 U	
PCB Dioxin-Like Congeners (µg/kg dry)							
PCB 77	-	-	**0.00285**	**0.00353**	**0.000434**	**0.00201**	0.00165
PCB 81	-	-	**0.000135**	**0.000135**	0.0000490 EMPC	**0.000143**	Same as Max
PCB 105	-	-	**0.0249**	**0.0277**		**0.0275**	0.0177
PCB 114	-	-	**0.00129**	**0.00137**	**0.000154**	**0.00163**	Same as Max
PCB 118	-	-	**0.0657**	**0.0695**	**0.00831**	**0.0705**	0.0552
PCB 123	-	-	**0.000963**	**0.000963**	0.000172 EMPC	**0.00122**	Same as Max
PCB 126	-	-	0.000255 EMPC	0.000419 EMPC	0.0000583 U	**0.000337**	Same as Max
PCB 156 + 157	-	-	**0.00850**	**0.0104**	**0.000930**	**0.00850**	0.00579
PCB 167	-	-	**0.00381**	**0.00402**	0.000482 EMPC	**0.00384**	Same as Max
PCB 169	-	-	0.000241 U	0.000250 U	0.0000542 U	0.000200 U	Same as Max
PCB 189	-	-	**0.000615**	**0.000869**	**0.0000720**	**0.000573**	Same as Max
Total PCBs as Congeners (KM, capped)	-	-	**1.20 J**	**1.34 J**	**0.161 J**	**1.20 J**	Same as Max
Metals (mg/kg dry)							
Aluminum	**16,300**	**18,000**	**17,100**	**18,800**	**7,380**	**33,500**	38,000
Antimony	**0.0400 J**	**0.0800 J**	**0.440**	**0.580**	**0.150 J**	**0.520 J**	0.427
Arsenic	**0.680**	**3.23**	**4.00**	**4.25**	**3.03**	**6.04**	5.86
Barium	**74.4**	**110**	**112**	**131**	**86.3**	**312**	315
Beryllium	**0.353**	**0.371**	**0.505**	**0.561**	**0.194**	**0.748**	0.847
Cadmium	0.0750 U	0.131 U	**0.887**	**1.17**	**0.262**	**0.748**	0.674
Chromium	**20.2**	**23.5**	**20.6**	**21.6**	**12.8**	**27.3**	28.0
Cobalt	**9.93**	**11.0**	**11.2**	**11.6**	**5.68**	**15.2**	15.2
Copper	**16.6**	**24.8**	**32.6**	**34.2**	**8.22**	**47.8**	55.6
Lead	**4.19**	**10.9**	**13.1**	**13.6**	**8.65**	**15.1**	14.5
Mercury	**0.00700**	**0.0290**	**0.179**	**0.181**	**0.0410**	**0.225 J**	0.214
Nickel	**15.6**	**19.9**	**18.1**	**19.4**	**9.87**	**25.6**	21.2
Thallium	0.0560 U	0.156 U	**0.272**	**0.435**	**0.145**	**0.360**	0.354
Vanadium	**62.5**	**70.3**	**59.3**	**61.5**	**25.7 J**	**76.9 J**	70.6
Zinc	**52.7**	**65.1**	**115**	**148**	**70.2**	**109**	106
Petroleum Hydrocarbons (mg/kg dry)							
Diesel Range Organics	**2.90 J**	**13.0 J**	**49.0 J**	**53.0 J**	**7.00 J**	**31.0**	31.7
Residual Range Organics	150 U	150 U	**410**	**480**	**29.0 J**	**100 J**	Same as Max
Semivolatile Organic Compounds (µg/kg dry)							
Bis(2-ethylhexyl) Phthalate	200 U	200 U	**9.90 J**	**13.0 J**	**4.90 J**	**110 J**	Same as Max
Butyl Benzyl Phthalate	9.90 U	9.90 U	1.80 U	1.90 U	1.50 U	**3.80 J**	Same as Max
Carbazole	1.30 U	**2.20 J**	1.60 U	1.70 U	1.30 U	1.40 U	Same as Max
Di-n-butyl Phthalate	9.90 U	11.0 U	**5.60 J**	**10.0 J**	2.60 UJ	**11.0 J**	Same as Max
Di-n-octyl Phthalate	1.20 U	1.20 U	1.50 U	1.60 U	1.20 U	1.30 U	Same as Max
p-cresol (4-Methylphenol)	2.90 U	2.90 U	3.70 U	**8.50 J**	2.90 U	**210**	Same as Max
Low Molecular Weight Polycyclic Aromatic Hydrodarbons (LPAHs) (µg/kg dry)							
Acenaphthene	1.00 U	1.00 U	1.20 U	1.30 U	1.00 U	1.10 U	Same as Max
Anthracene	1.40 U	**2.60 J**	1.70 U	1.80 U	1.40 U	**2.30 J**	Same as Max
Fluorene	1.70 U	1.70 U	2.10 U	2.20 U	1.70 UJ	1.80 UJ	Same as Max
Phenanthrene	**2.30 J**	**6.50 J**	**3.80 J**	**4.60 J**	1.30 U	**5.90 J**	Same as Max
Total LPAHs (KM, capped; NDs at MDL)	**6.40 J**	**11.8 J**	**8.80 J**	**9.90 J**	5.40 UJ	**10.0 J**	Same as Max
High Molecular Weight Polycyclic Aromatic Hydrodarbons (HPAHs) (µg/kg dry)							
Benzo(a)anthracene	1.40 U	**6.60 J**	**4.20 J**	**7.80 J**	1.40 U	**10.0**	Same as Max
Benzo(a)pyrene	1.60 U	**7.10 J**	**8.70 J**	**13.0 J**	**1.60 J**	**11.0**	Same as Max
Benzo(b)fluoranthene	2.50 U	**11.0**	**6.50 J**	**15.0**	2.50 U	**17.0**	Same as Max
Benzo(g,h,i)perylene	2.30 U	**5.00 J**	**5.60 J**	**9.90 J**	2.30 U	**7.90 J**	Same as Max
Benzo(k)fluoranthene	2.50 U	**3.40 J**	3.00 U	**4.10 J**	2.50 U	**5.00 J**	Same as Max
Chrysene	**1.80 J**	**13.0**	**5.80 J**	**11.0 J**	1.40 U	**9.80**	Same as Max
Dibenz(a,h)anthracene	2.20 U	2.20 U	2.70 U	2.80 U	2.20 U	2.30 U	Same as Max
Fluoranthene	2.20 U	**11.0**	**7.30 J**	**9.60 J**	2.20 UJ	**31.0 J**	Same as Max
Indeno(1,2,3-cd)pyrene	1.90 U	**4.60 J**	**5.00 J**	**7.10 J**	1.90 UJ	**8.80 J**	Same as Max
Pyrene	**3.40 J**	**17.0**	**7.20 J**	**8.80 J**	**1.50 J**	**23.0 J**	12.7
Total HPAHs (KM, capped; NDs at MDL)	**17.2 J**	**80.9 J**	**55.7 J**	**89.1 J**	**16.4 J**	**125 J**	Same as Max
Total Polycyclic Aromatic Hydrodarbons (PAHs) (µg/kg dry)							
Total PAHs (KM, capped; NDs at MDL)	**19.5 J**	**90.8 J**	**60.1 J**	**96.1 J**	**17.1 J**	**133 J**	Same as Max
CLAM TISSUE							
PCB Aroclors (µg/kg wet)							
Aroclor 1016	-	-	-	6.10 UJ	8.40 U	15.0 U	Same as Max
Aroclor 1221	-	-	-	5.90 UJ	6.30 U	16.0 U	Same as Max
Aroclor 1232	-	-	-	9.70 UJ	18.0 U	35.0 U	Same as Max
Aroclor 1242	-	-	-	6.60 UJ	7.90 U	14.0 U	Same as Max
Aroclor 1248	-	-	-	5.20 UJ	5.50 U	9.90 U	Same as Max
Aroclor 1254	-	-	-	14.0 UJ	**30.0**	**39.0**	39.7
Aroclor 1260	-	-	-	6.30 UJ	5.70 U	8.10 U	Same as Max
Aroclor 1262	-	-	-	3.20 UJ	3.70 U	9.90 U	Same as Max
Aroclor 1268	-	-	-	2.00 UJ	2.00 U	2.00 U	Same as Max
Total PCBs as Aroclors (NDs at MDL) [1]	-	-	-	14.0 UJ	**30.0**	**39.0**	Same as Max
PCB Dioxin-Like Congeners (µg/kg wet)							
PCB 77	-	-	-	**0.0337**	**0.0332**	**0.0468**	0.0466
PCB 81	-	-	-	0.00217 EMPC	0.000961 EMPC	**0.00275**	Same as Max
PCB 105	-	-	-	**0.352**	**0.350**	**0.556**	0.542
PCB 114	-	-	-	**0.0228**	**0.0213**	**0.0330**	0.0316
PCB 118	-	-	-	**1.59**	**1.91**	**2.82**	2.82
PCB 123	-	-	-	**0.0280**	**0.0368**	**0.0540**	0.0536
PCB 126	-	-	-	**0.00307**	**0.00403**	**0.00564**	Same as Max
PCB 156 + 157	-	-	-	**0.0969**	**0.123**	**0.166**	0.165
PCB 167	-	-	-	**0.0925**	**0.123**	**0.170**	0.169
PCB 169	-	-	-	0.00108 U	0.000698 U	0.00173 U	Same as Max
PCB 189	-	-	-	**0.00157**	**0.00144**	**0.00241**	Same as Max
Total PCBs as Congeners (KM, capped)	-	-	-	**21.4 J**	**26.9 J**	**34.5 J**	Same as Max

Table L-7
Mouth of Eagle Creek and Goose Island Analytical Results Comparison to Reference Area

	Forebay - Eagle Creek		Forebay - Goose Island		Reference		
	Minimum Value	Maximum Value	Minimum Value	Maximum Value	Minimum Value	Maximum Value	95% UPL
Metals (mg/kg wet)							
Aluminum	-	-	-	**75.5**	**8.00**	**83.4**	68.7
Antimony	-	-	-	0.00100 U	**0.00400**	**0.00800**	Same as Max
Arsenic	-	-	-	**1.59**	**2.00**	**2.62**	2.64
Barium	-	-	-	**1.66**	**1.71**	**2.38**	Same as Max
Beryllium	-	-	-	**0.00200 J**	0.000400 U	**0.00140**	Same as Max
Cadmium	-	-	-	**0.243**	**0.247**	**0.405**	0.410
Chromium	-	-	-	**0.492**	**0.450**	**0.760**	Same as Max
Cobalt	-	-	-	**0.0996**	**0.0902**	**0.150**	0.153
Copper	-	-	-	**6.75**	**8.18**	**11.6**	11.2
Lead	-	-	-	**0.0615**	**0.0490**	**0.0720**	0.0729
Mercury	-	-	-	**0.0163 J**	**0.00460**	**0.0179**	0.0160
Methyl Mercury	-	-	-	-	**0.00140**	**0.00990**	0.00896
Nickel	-	-	-	**0.221**	**0.273**	**0.482**	0.447
Thallium	-	-	-	**0.00650**	**0.00530**	**0.0105**	0.00905
Vanadium	-	-	-	**0.253**	**0.0740**	**0.286**	0.234
Zinc	-	-	-	**20.5**	**18.5**	**23.2**	23.6
Semivolatile Organic Compounds (µg/kg wet)							
Bis(2-ethylhexyl) Phthalate	-	-	-	66.0 U	**310**	**680**	660
Butyl Benzyl Phthalate	-	-	-	7.30 U	7.30 U	**74.0 J**	Same as Max
Carbazole	-	-	-	7.70 U	9.10 U	9.10 U	Same as Max
Di-n-butyl Phthalate	-	-	-	170 U	16.0 U	48.0 U	Same as Max
Di-n-octyl Phthalate	-	-	-	11.0 U	11.0 U	11.0 U	Same as Max
p-cresol (4-Methylphenol)	-	-	-	**29.0 J**	**13.0 J**	**110**	Same as Max
Low Molecular Weight Polycyclic Aromatic Hydrodarbons (LPAHs) (µg/kg wet)							
Acenaphthene	-	-	-	**0.680**	**0.270 J**	**1.20 J**	1.06
Anthracene	-	-	-	**1.20**	**0.850 J**	**1.80**	Same as Max
Fluorene	-	-	-	**1.80**	**1.50**	**3.10 J**	2.85
Phenanthrene	-	-	-	**10.0**	**6.70**	**14.0 J**	13.1
High Molecular Weight Polycyclic Aromatic Hydrodarbons (HPAHs) (µg/kg wet)							
Benzo(a)anthracene	-	-	-	**3.40**	3.70 U	27.0 U	Same as Max
Benzo(a)pyrene	-	-	-	**0.750**	0.410 U	0.410 U	Same as Max
Benzo(b)fluoranthene	-	-	-	**2.20**	0.350 U	0.350 U	Same as Max
Benzo(g,h,i)perylene	-	-	-	**0.740**	0.370 U	**1.40 J**	Same as Max
Benzo(k)fluoranthene	-	-	-	**1.30**	0.280 U	0.280 U	Same as Max
Chrysene	-	-	-	**2.50**	1.30 UJ	13.0 UJ	Same as Max
Dibenz(a,h)anthracene	-	-	-	**0.480 J**	0.300 U	0.300 U	Same as Max
Fluoranthene	-	-	-	**18.0**	**8.50**	**17.0 J**	15.6
Indeno(1,2,3-cd)pyrene	-	-	-	**0.890**	0.320 U	2.00 U	Same as Max
Pyrene	-	-	-	**5.40**	2.00 U	5.60 UJ	Same as Max
CRAYFISH TISSUE							
PCB Aroclors (µg/kg wet)							
Aroclor 1016	-	-	-	2.40 U	2.40 U	4.80 U	Same as Max
Aroclor 1221	-	-	-	2.60 U	2.60 U	5.20 U	Same as Max
Aroclor 1232	-	-	-	2.30 U	2.30 U	4.60 U	Same as Max
Aroclor 1242	-	-	-	2.20 U	2.20 U	4.40 U	Same as Max
Aroclor 1248	-	-	-	0.510 U	0.510 U	1.10 U	Same as Max
Aroclor 1254	-	-	-	1.80 U	1.80 U	3.60 U	Same as Max
Aroclor 1260	-	-	-	1.90 U	1.90 U	3.80 U	Same as Max
Aroclor 1262	-	-	-	2.50 U	2.50 U	5.00 U	Same as Max
Aroclor 1268	-	-	-	2.00 U	2.00 U	4.00 U	Same as Max
Total PCBs as Aroclors (NDs at MDL) [1]	-	-	-	2.60 U	2.60 U	5.20 U	
PCB Dioxin-Like Congeners (µg/kg wet)							
PCB 77	-	-	-	**0.00226**	**0.00130**	**0.00466**	0.00434
PCB 81	-	-	-	0.000145 U	0.000104 U	**0.000176**	Same as Max
PCB 105	-	-	-	**0.00624**	**0.00197**	**0.0248**	0.0214
PCB 114	-	-	-	**0.00235**	**0.00236**	**0.00815**	0.00598
PCB 118	-	-	-	**0.0870**	**0.0526**	**0.323**	0.261
PCB 123	-	-	-	**0.00256**	**0.00193**	**0.00736**	0.00610
PCB 126	-	-	-	0.000261 EMPC	0.000207 U	**0.000530**	0.000530
PCB 156 + 157	-	-	-	**0.0133**	**0.0123**	**0.0391**	0.0315
PCB 167	-	-	-	**0.0112**	**0.00816**	**0.0301**	0.0253
PCB 169	-	-	-	0.000164 U	0.0000911 U	0.000325 U	Same as Max
PCB 189	-	-	-	**0.000662**	**0.000767**	**0.00220**	Same as Max
Total PCBs as Congeners (KM, capped)	-	-	-	**0.587 J**	**0.366 J**	**1.94 J**	Same as Max
Metals (mg/kg wet)							
Aluminum	-	-	-	**147**	**71.2 J**	**221 J**	204
Antimony	-	-	-	**0.00800 J**	**0.00600 J**	**0.0390**	0.0327
Arsenic	-	-	-	**0.303**	**0.275**	**0.636**	0.535
Barium	-	-	-	**57.0**	**40.2**	**120**	104
Beryllium	-	-	-	**0.00400 J**	**0.00260 J**	**0.00610 J**	0.00489
Cadmium	-	-	-	**0.0769**	**0.0460**	**0.201**	0.164
Chromium	-	-	-	**0.190**	**0.120 J**	**1.23**	Same as Max
Cobalt	-	-	-	**0.391**	**0.224**	**0.439**	0.434
Copper	-	-	-	**15.5**	**12.2 J**	**33.2 J**	27.4
Lead	-	-	-	**0.471**	**0.0560**	**1.55**	1.14
Mercury	-	-	-	**0.0359 J**	**0.0105 J**	**0.0246 J**	0.0231
Methyl Mercury	-	-	-	-	**0.0181**	**0.0367**	0.0370
Nickel	-	-	-	**1.21**	**0.992**	**3.44**	2.90
Thallium	-	-	-	**0.0128**	**0.0140**	**0.0370**	0.0319
Vanadium	-	-	-	**0.729**	**0.261**	**0.804**	0.860
Zinc	-	-	-	**20.3**	**18.0**	**36.5**	Same as Max
Semivolatile Organic Compounds (µg/kg wet)							
Bis(2-ethylhexyl) Phthalate	-	-	-	66.0 U	66.0 U	**87.0 J**	Same as Max
Butyl Benzyl Phthalate	-	-	-	7.30 U	7.30 U	**31.0 J**	Same as Max
Carbazole	-	-	-	7.70 U	9.10 U	9.10 U	Same as Max
Di-n-butyl Phthalate	-	-	-	140 U	16.0 U	110 U	Same as Max
Di-n-octyl Phthalate	-	-	-	11.0 U	11.0 U	**32.0 J**	Same as Max
p-cresol (4-Methylphenol)	-	-	-	11.0 U	7.70 U	7.70 U	Same as Max
Low Molecular Weight Polycyclic Aromatic Hydrodarbons (LPAHs) (µg/kg wet)							
Acenaphthene	-	-	-	0.500 U	0.110 U	**0.190 J**	Same as Max
Anthracene	-	-	-	**0.430 J**	0.0650 U	**0.190 J**	Same as Max
Fluorene	-	-	-	**0.510**	0.150 U	**0.250 J**	Same as Max
Phenanthrene	-	-	-	**0.820**	0.360 U	**0.590**	Same as Max

Table L-7
Mouth of Eagle Creek and Goose Island Analytical Results Comparison to Reference Area

	Forebay - Eagle Creek		Forebay - Goose Island		Reference		
	Minimum Value	**Maximum Value**	**Minimum Value**	**Maximum Value**	**Minimum Value**	**Maximum Value**	**95% UPL**
High Molecular Weight Polycyclic Aromatic Hydrodarbons (HPAHs) (µg/kg wet)							
Benzo(a)anthracene	-	-	-	0.500 U	0.0660 U	**0.400 J**	Same as Max
Benzo(a)pyrene	-	-	-	0.0610 U	0.0810 U	**0.120 J**	Same as Max
Benzo(b)fluoranthene	-	-	-	**0.150 J**	0.0700 U	**0.230 J**	Same as Max
Benzo(g,h,i)perylene	-	-	-	**0.110 J**	0.0730 U	0.500 U	Same as Max
Benzo(k)fluoranthene	-	-	-	**0.110 J**	0.0560 U	**0.200 J**	Same as Max
Chrysene	-	-	-	0.200 U	0.0760 U	**0.270 J**	Same as Max
Dibenz(a,h)anthracene	-	-	-	0.0450 U	0.0590 U	**0.160 J**	Same as Max
Fluoranthene	-	-	-	0.500 U	0.450 U	0.500 U	Same as Max
Indeno(1,2,3-cd)pyrene	-	-	-	**0.150 J**	0.0640 U	**0.180 J**	Same as Max
Pyrene	-	-	-	0.500 U	0.450 U	0.500 U	Same as Max
SCULPIN TISSUE							
PCB Aroclors (µg/kg wet)							
Aroclor 1016	-	-	-	-	2.40 U	2.40 U	Same as Max
Aroclor 1221	-	-	-	-	2.60 U	2.60 U	Same as Max
Aroclor 1232	-	-	-	-	2.30 U	2.30 U	Same as Max
Aroclor 1242	-	-	-	-	2.20 U	2.20 U	Same as Max
Aroclor 1248	-	-	-	-	0.510 U	45.0 U	Same as Max
Aroclor 1254	-	-	-	-	1.80 U	44.0 U	Same as Max
Aroclor 1260	-	-	-	-	1.90 U	1.90 U	Same as Max
Aroclor 1262	-	-	-	-	2.50 U	2.50 U	Same as Max
Aroclor 1268	-	-	-	-	2.00 U	2.00 U	Same as Max
Total PCBs as Aroclors (NDs at MDL) [1]	-	-	-	-	13.0 U	45.0 U	
PCB Dioxin-Like Congeners (µg/kg wet)							
PCB 77	-	-	-	**0.00799**	**0.00519**	**0.0259**	0.0239
PCB 81	-	-	-	0.000882 EMPC	0.000689 EMPC	0.00221 EMPC	Same as Max
PCB 105	-	-	-	**0.362**	**0.358**	**1.04**	1.05
PCB 114	-	-	-	**0.0220**	**0.0250**	**0.0821**	0.0775
PCB 118	-	-	-	**0.872**	**1.05**	**3.87**	3.71
PCB 123	-	-	-	**0.0163**	**0.0153**	**0.0470**	Same as Max
PCB 126	-	-	-	**0.00315**	**0.00254**	**0.00593**	Same as Max
PCB 156 + 157	-	-	-	**0.106**	**0.140**	**0.464**	0.465
PCB 167	-	-	-	**0.0348**	**0.0519**	**0.175**	0.177
PCB 169	-	-	-	0.00131 U	0.00214 U	0.00929 U	Same as Max
PCB 189	-	-	-	**0.00383**	**0.000318**	**0.0172**	Same as Max
Total PCBs as Congeners (KM, capped)	-	-	-	**8.14 J**	**12.2 J**	**38.3 J**	Same as Max
Metals (mg/kg wet)							
Arsenic	-	-	-	-	**0.239**	**0.484**	0.513
Cadmium	-	-	-	-	**0.00870**	**0.0264**	0.0236
Lead	-	-	-	-	0.0214 U	**0.0758**	Same as Max
Mercury	-	-	-	-	**0.0448 J**	**0.141 J**	0.134

Notes:

µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
ND = Non Detect
MDL = method detection limit
RDL = reported detection limit
UPL = Upper Prediction Limit
- = Not Analyzed
bold = analyte detected above MDL/RDL.

[1] Only Aroclors 1248 and 1254 were included in summing sediment Total PCBs as Aroclors because all other aroclors were undected in Forebay sediment samples.
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL (except PCB congeners).
For PCB congeners, the analyte was not detected at or above the RDL/EMPC.
UJ = The analyte was not detected. The reported MDL (non-congeners) or RDL/EMPC (congeners) is an estimate.
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
= The maximum result exceeds the maximum Reference Area and the 95% UPL for the Reference Area.

Table L-8
Comparison of COI Concentrations in Erodible and Mass Wasting Soils with Reference Area Sediment Concentrations

	Upland Area of Potential Concern (AOPC)			Reference Area Sediments	
	Landfill	Sandblast Area	Bulb Slope		
	Max Detected Value	Max Detected Value	Max Detected Value	Maximum Value	95% UPL
PCB Aroclors (µg/kg dry)					
Aroclor 1016	-	-	-	13.0 U	Same as Max
Aroclor 1221	-	-	-	11.0 U	Same as Max
Aroclor 1232	-	-	-	12.0 U	Same as Max
Aroclor 1242	-	-	-	16.0 U	Same as Max
Aroclor 1248	-	-	-	1.80 U	Same as Max
Aroclor 1254	**49.0**			1.80 U	Same as Max
Aroclor 1260	**92.0**	**67.0**	**251**	1.80 U	Same as Max
Aroclor 1262	-	-	-	1.80 U	Same as Max
Aroclor 1268	-	-	-	1.80 U	Same as Max
Total PCBs as Aroclors	**127**	**69.1**	**251**	16.0 U	
PCB Dioxin-Like Congeners (µg/kg dry)					
PCB 77	-	-	-	**0.00201**	0.00165
PCB 81	-	-	-	**0.000143**	Same as Max
PCB 105	-	-	-	**0.0275**	0.01770
PCB 114	-	-	-	**0.00163**	Same as Max
PCB 118	-	-	-	**0.0705**	0.0552
PCB 123	-	-	-	**0.00122**	Same as Max
PCB 126	-	-	-	**0.000337**	Same as Max
PCB 156 + 157	-	-	-	**0.00850**	0.00579
PCB 167	-	-	-	**0.00384**	Same as Max
PCB 169	-	-	-	0.000200 U	Same as Max
PCB 189	-	-	-	**0.000573**	Same as Max
Total PCBs as Congeners (KM, capped)	-	-	-	**1.20 J**	Same as Max
Metals (mg/kg dry)					
Aluminum	**19,100**	**13,000**	-	**33,500**	38,000
Antimony	-	**0.340**	-	**0.520 J**	0.427
Arsenic	**6.20**	**5.94**	-	**6.04**	5.86
Barium	**242**	**108**	-	**312**	315
Beryllium	**0.576**	**0.350**	-	**0.748**	0.847
Cadmium	**1.70**	**1.06**	-	**0.748**	0.674
Chromium	**801**	**162**	-	**27.3**	28.0
Cobalt	**22.7**	**13.4**	-	**15.2**	15.2
Copper	**60.5**	**71.6**	-	**47.8**	55.6
Lead	**680**	**319**	**597**	**15.1**	14.5
Manganese	**614**	**479**	-	-	-
Mercury	**0.320**	**0.0390**	**1.54**	**0.225 J**	0.214
Nickel	**570**	**74.9**	-	**25.6**	21.2
Selenium	**0.848**	**0.650**	-	-	-
Silver	**0.500**	**0.175**	-	-	-
Thallium	**0.378**	**0.117**	-	**0.360**	0.354
Vanadium	**56.3**	**69.8**	-	**76.9 J**	70.6
Zinc	**221**	**203**	-	**109**	106
Petroleum Hydrocarbons (mg/kg dry)					
Diesel Range Organics	-	**69.0**	**170**	**31.0**	31.7
Residual Range Organics	-	**1,000**	**410**	**100 J**	Same as Max
Semivolatile Organic Compounds (µg/kg dry)					
Bis(2-ethylhexyl) Phthalate	**420**	**260,000**	-	**110 J**	Same as Max
Butyl Benzyl Phthalate	-	-	-	**3.80 J**	Same as Max
Carbazole	**210**	**91.0**	-	1.40 U	Same as Max
Di-n-butyl Phthalate	**1,800**	-	-	**11.0 J**	Same as Max
Di-n-octyl Phthalate	-	-	-	1.30 U	Same as Max
p-cresol (4-Methylphenol)	-	-	-	**210**	Same as Max
Low Molecular Weight Polycyclic Aromatic Hydrodarbons (LPAHs) (µg/kg dry)					
Acenaphthene	**1,160**	**68.0**	-	1.10 U	Same as Max
Anthracene	**1,070**	**150**	-	**2.30 J**	Same as Max
Fluorene	**510**	-	-	1.80 UJ	Same as Max
Phenanthrene	**4,200**	**940**	-	**5.90 J**	Same as Max
Total LPAHs (KM, capped; NDs at MDL)	**12,200**	**1,356**	-	**10.0 J**	Same as Max
High Molecular Weight Polycyclic Aromatic Hydrodarbons (HPAHs) (µg/kg dry)					
Benzo(a)anthracene	**4,500**	**1,200**	-	**10.0**	Same as Max
Benzo(a)pyrene	**6,200**	**1,000**	-	**11.0**	Same as Max
Benzo(b)fluoranthene	**8,200**	**1,600**	-	**17.0**	Same as Max
Benzo(g,h,i)perylene	**3,300**	**590**	-	**7.90 J**	Same as Max
Benzo(k)fluoranthene	**2,500**	**570**	-	**5.00 J**	Same as Max

Table L-8
Comparison of COI Concentrations in Erodible and Mass Wasting Soils with Reference Area Sediment Concentrations

	Upland Area of Potential Concern (AOPC)			Reference Area Sediments	
	Landfill	Sandblast Area	Bulb Slope		
	Max Detected Value	Max Detected Value	Max Detected Value	Maximum Value	95% UPL
Chrysene	**5,900**	**1,500**	-	**9.80**	Same as Max
Dibenz(a,h)anthracene	**1,000**	**220**	-	2.30 U	Same as Max
Fluoranthene	**14,000**	**2,100**	-	**31.0 J**	Same as Max
Indeno(1,2,3-cd)pyrene	**4,600**	**690**	-	**8.80 J**	Same as Max
Pyrene	**9,100**	**1,900**	-	**23.0 J**	12.7
Total HPAHs (KM, capped; NDs at MDL)	**55,030**	**11,370**	-	**125 J**	Same as Max
Total Polycyclic Aromatic Hydrodarbons (PAHs) (µg/kg dry)					
Total PAHs (KM, capped; NDs at MDL)	-	-	-	**133 J**	Same as Max

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
RDL = reported detection limit
SLV = screening level value
UPL = Upper Prediction Limit
- = Not Analyzed
bold = analyte detected above MDL/RDL.

KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL (except PCB congeners).
For PCB congeners, the analyte was not detected at or above the RDL/EMPC.
UJ = The analyte was not detected. The reported MDL (non-congeners) or RDL/EMPC (congeners) is an estimate.
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
= The reported concentration exceeds the Maximum Reference Area sediment concentation and the 95% UPL.

Table L-9
Comparison of COI Concentrations in Erodible and Mass Wasting Soils with Reference Area Soil Concentrations

	Upland Area of Potential Concern (AOPC)			Reference Area Soils	
	Landfill	Sandblast Area	Bulb Slope		
	Max Detected Value	Max Detected Value	Max Detected Value	Maximum Value	95% UPL
Metals (mg/kg dry)					
Aluminum	**19,100**	**13,000**	-	33,200	31,400
Antimony	-	**0.340**	-	0.180	0.176
Arsenic	**6.20**	**5.94**	-	5.18	5.40
Barium	**242**	**108**	-	182	169
Beryllium	**0.576**	**0.350**	-	0.629	0.659
Cadmium	**1.70**	**1.06**	-	0.340	0.271
Chromium	**801**	**162**	-	27.3	28.1
Cobalt	**22.7**	**13.4**	-	19.9	19.9
Copper	**60.5**	**71.6**	-	58.2	56.7
Lead	**680**	**319**	**597**	26.5	25.5
Manganese	**614**	**479**	-	920	885
Mercury	**0.320**	**0.0390**	**1.54**	0.0680	0.0660
Nickel	**570**	**74.9**	-	26.1	26.5
Selenium	**0.848**	**0.650**		0.500 U	0.500
Thallium	**0.378**	**0.117**	-	0.203	0.203
Vanadium	**56.3**	**69.8**	-	99.3	104
Zinc	**221**	**203**	-	68.5	71.7
Low Molecular Weight Polycyclic Aromatic Hydrodarbons (LPAHs) (µg/kg dry)					
Acenaphthene	**1,160**	**68.0**	-	3.40	3.40
Acenaphthylene	**19.0**			1.60	1.60
Anthracene	**1,070**	**150**	-	4.90	4.90
Fluorene	**510**	-	-	3.20	3.20
Naphthalene	**79.0**	-		2.20	29.4
Phenanthrene	**4,200**	**940**	-	34.0	2.20
Total LPAHs (KM, capped; NDs at MDL)	**12,200**	**1,356**	-	49.3	49.3
High Molecular Weight Polycyclic Aromatic Hydrodarbons (HPAHs) (µg/kg dry)					
Benzo(a)anthracene	**4,500**	**1,200**	-	34.0	28.7
Benzo(a)pyrene	**6,200**	**1,000**	-	45.0	37.0
Benzo(b)fluoranthene	**8,200**	**1,600**	-	55.0	46.4
Benzo(g,h,i)perylene	**3,300**	**590**	-	32.0	26.5
Benzo(k)fluoranthene	**2,500**	**570**	-	19.0	16.2
Chrysene	**5,900**	**1,500**	-	45.0	37.4
Dibenz(a,h)anthracene	**1,000**	**220**	-	6.90	6.90
Fluoranthene	**14,000**	**2,100**	-	66.0	55.1
Indeno(1,2,3-cd)pyrene	**4,600**	**690**	-	34.0	27.0
Pyrene	**9,100**	**1,900**	-	64.0	53.3
Total HPAHs (KM, capped; NDs at MDL)	**55,030**	**11,370**	-	401	401

Notes:
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram
MDL = method detection limit
RDL = reported detection limit
SLV = screening level value
UPL = Upper Prediction Limit
- = Not Analyzed
-- = SLV for analyte not available
bold = analyte detected above MDL/RDL.
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
J = The reported value is an estimate.
U = The analyte was not detected at or above the MDL (except PCB congeners). For PCB congeners, the analyte was not detected at or above the RDL/EMPC.
UJ = The analyte was not detected. The reported MDL (non-congeners) or RDL/EMPC (congeners) is an estimate.
EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.
= The reported concentration exceeds the Maximum Reference Area sediment concentation and the 95% UPL.

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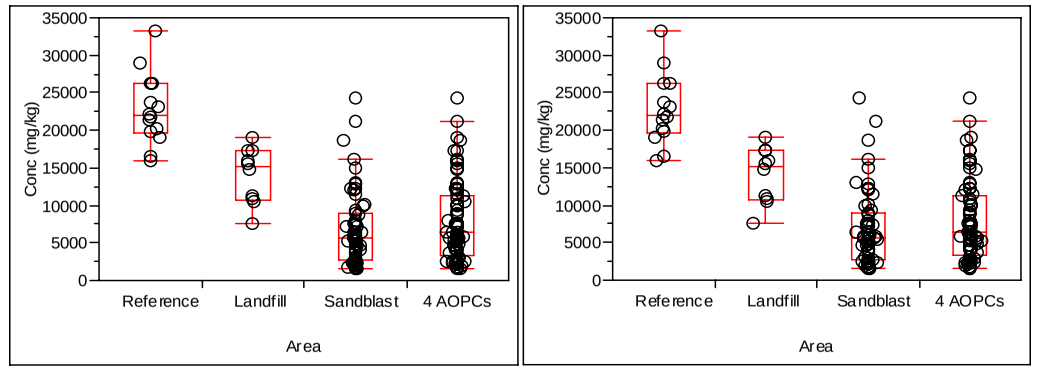

CENSORED AT MDL

CENSORED AT MRL

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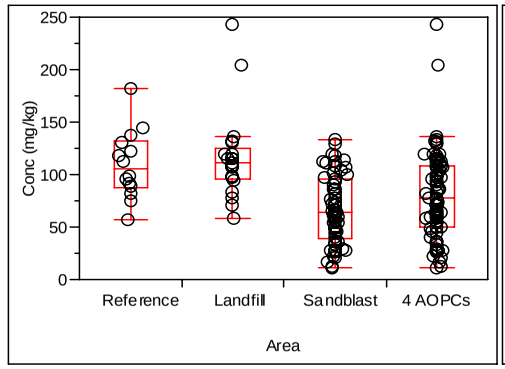

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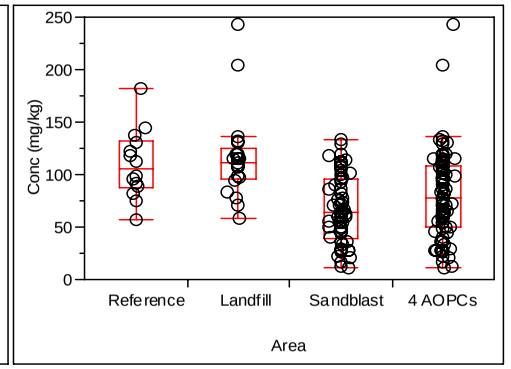

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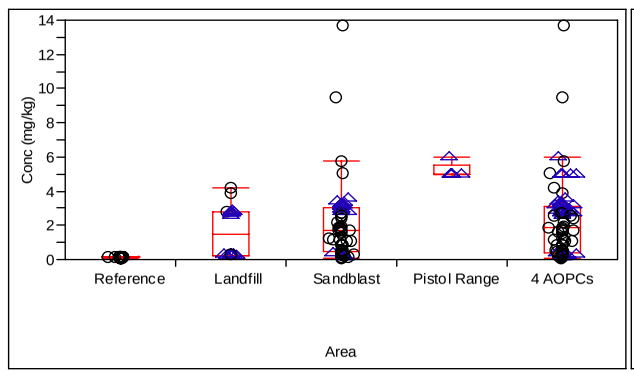

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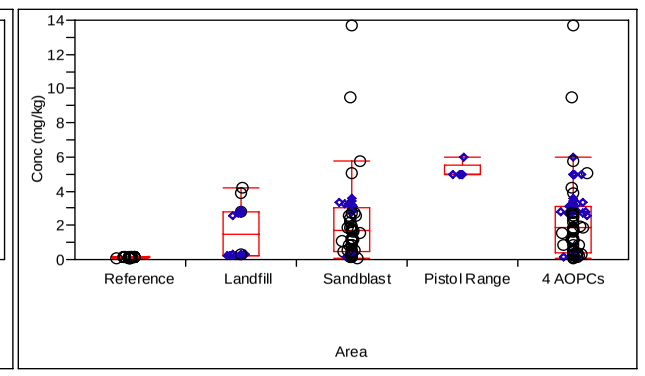

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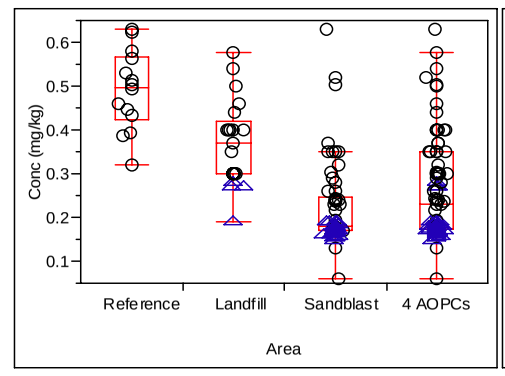

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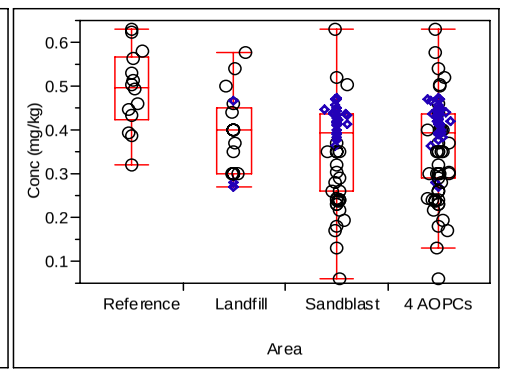

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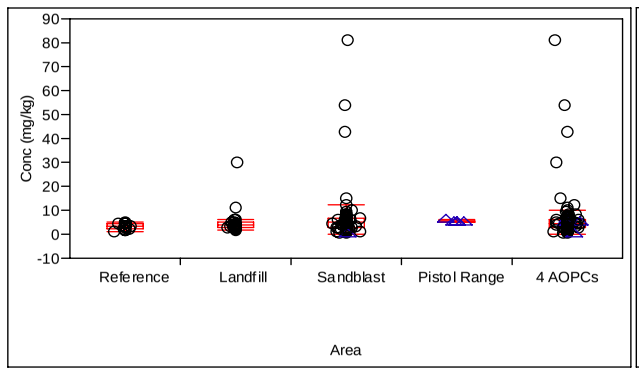

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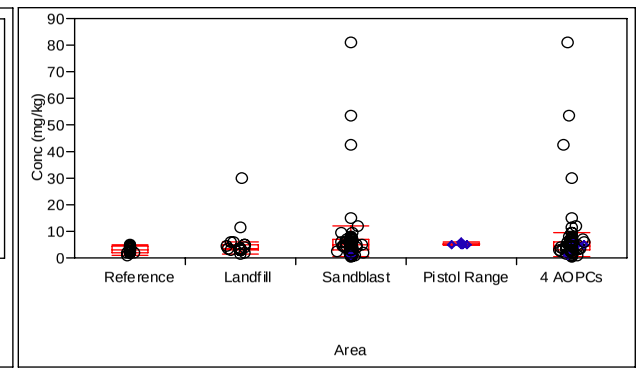

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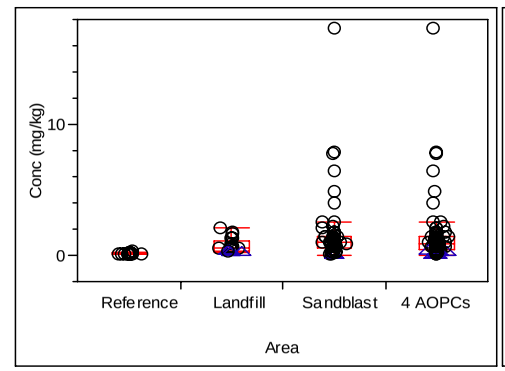
CADMIUM



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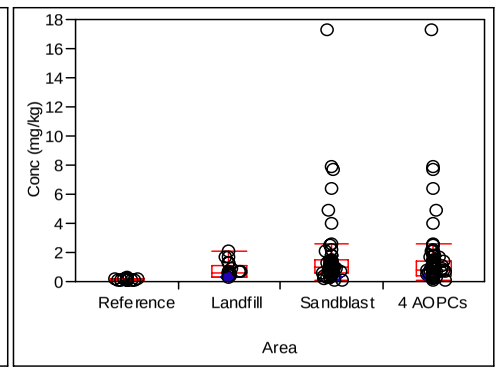

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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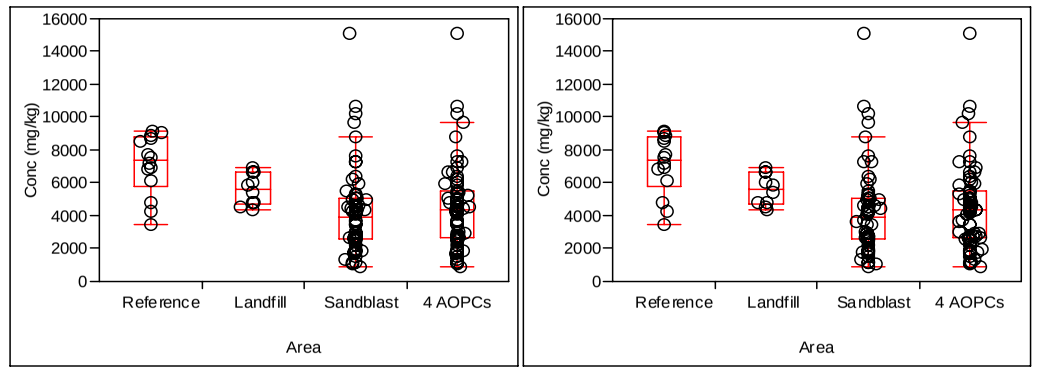
UPLAND OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN SOIL (0 - 1ft)

DRAWING NUMBER:	
FIG L-1a	
CAD FILE NUMBER:	
FIG L-1a	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Bradford\Ft Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1a Metals in Upland Soil.dwg Nov 17, 2010 - 8:01am

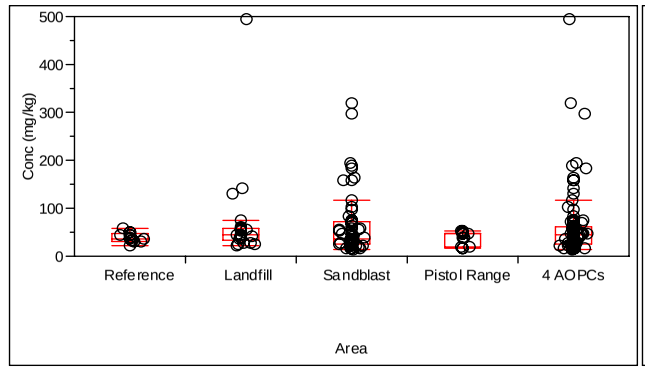
CALCIUM



CENSORED AT MDL

CENSORED AT MRL

COPPER



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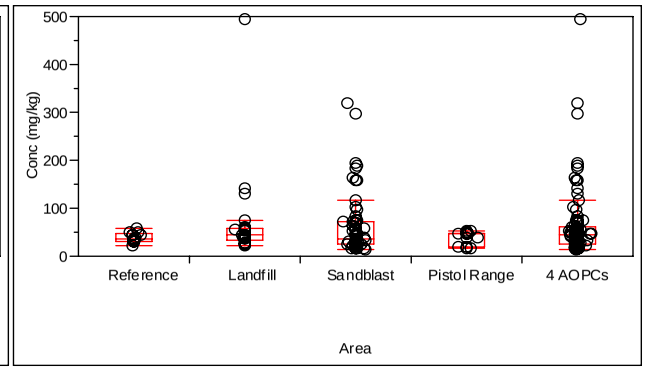

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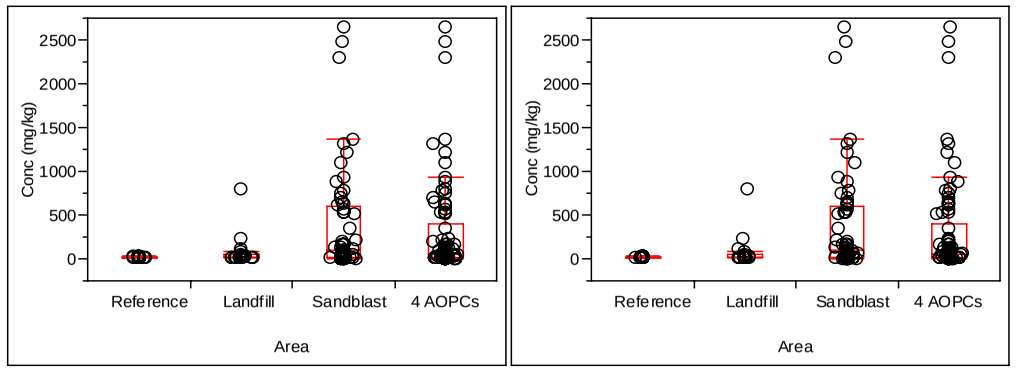

CENSORED AT MDL

CENSORED AT MRL

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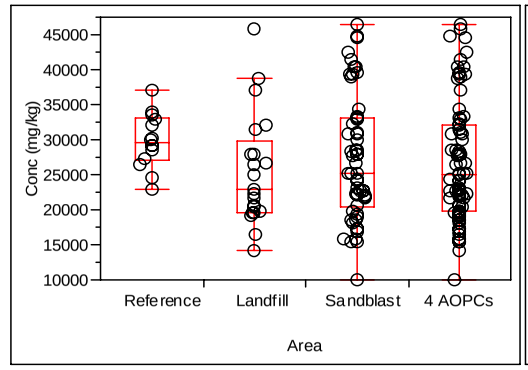

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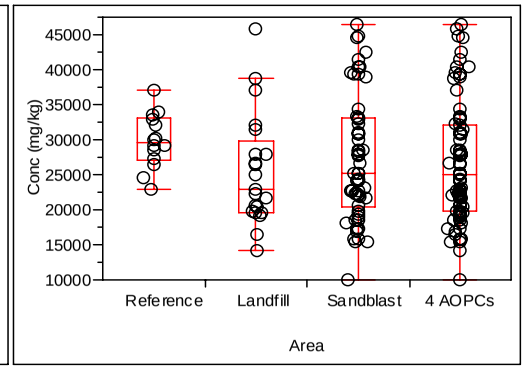

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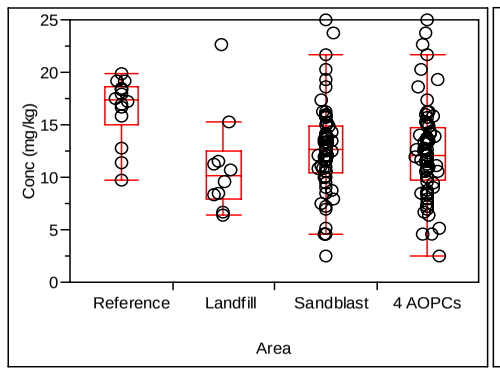

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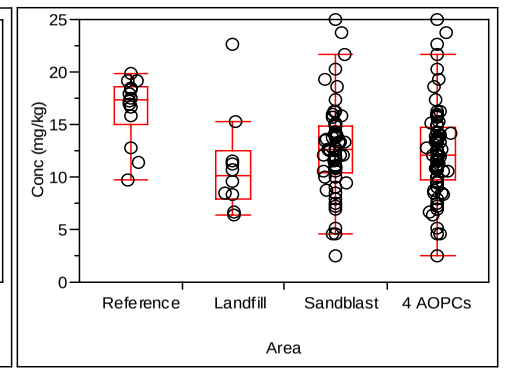

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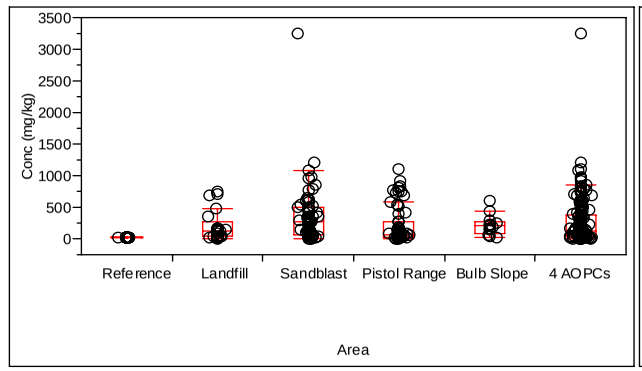

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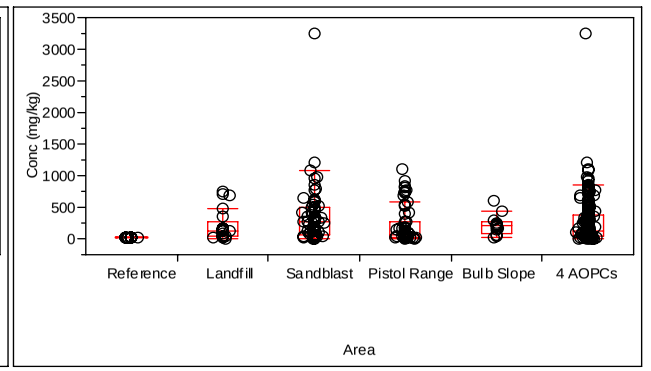

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN SOIL (0 - 1ft)

DRAWING NUMBER:	
FIG L-1b	
CAD FILE NUMBER:	
FIG L-1b	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Bradford1\Ft Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1b Metals in Upland Soil.dwg Nov 17, 2010 - 8:08am

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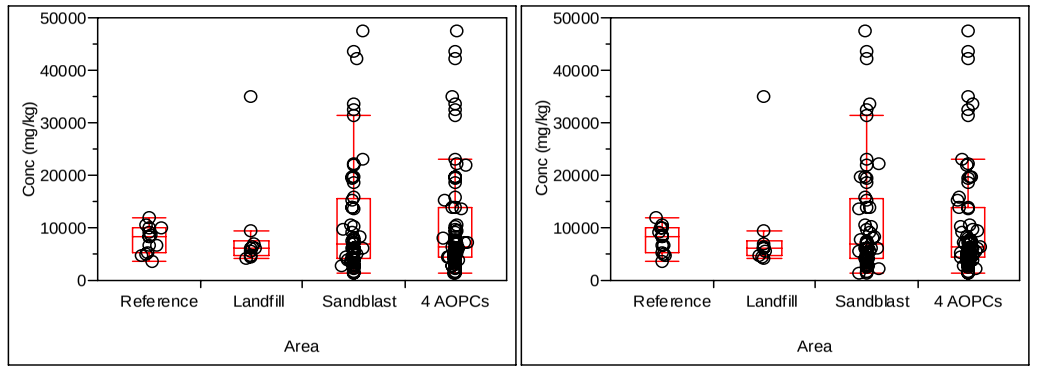

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CENSORED AT MRL

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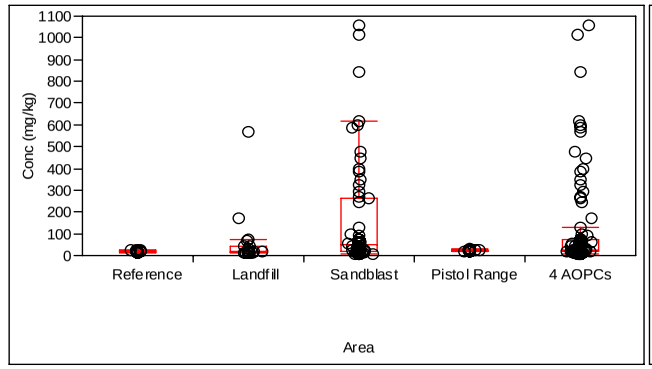

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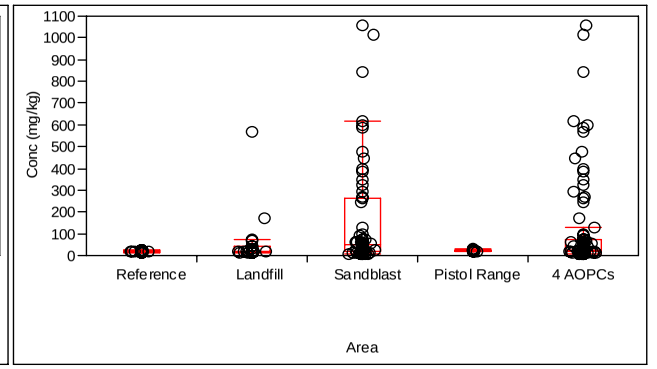

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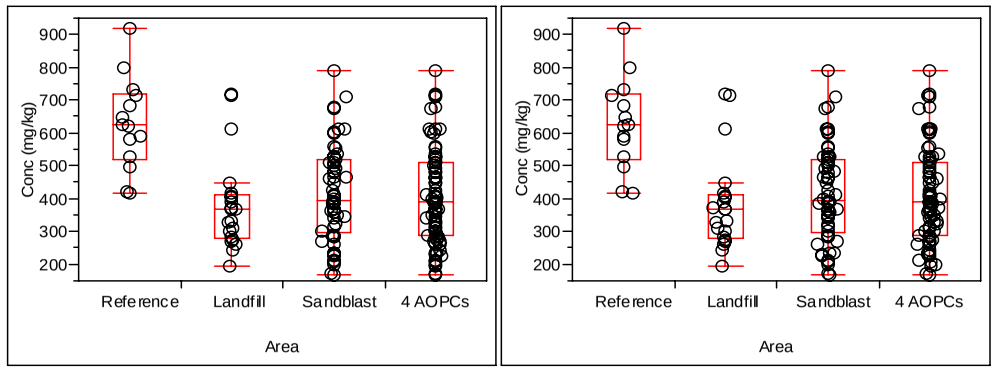
MANGANESE



CENSORED AT MDL

CENSORED AT MRL

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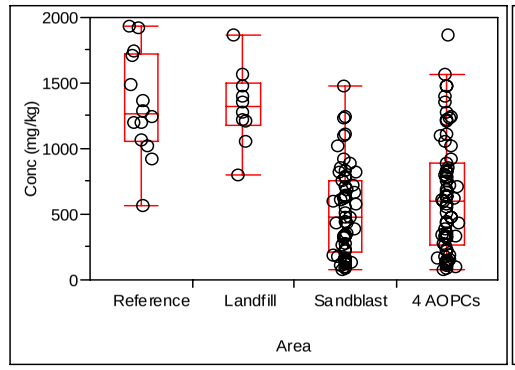

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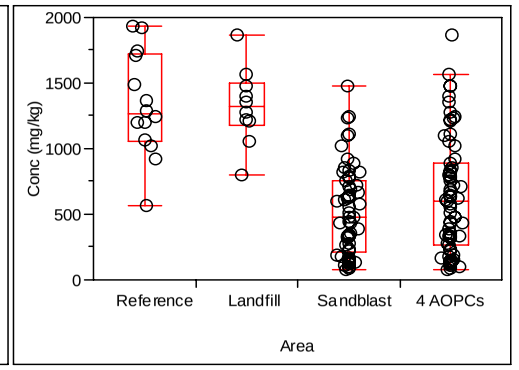

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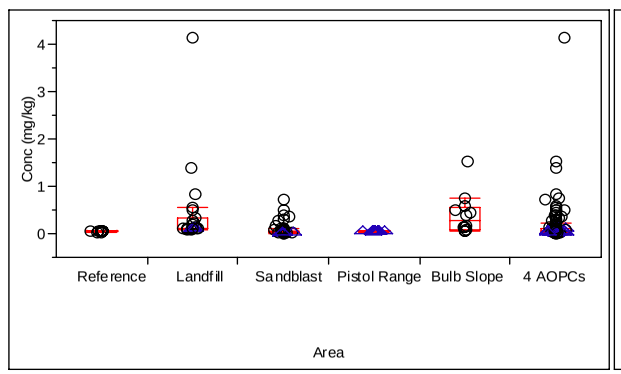

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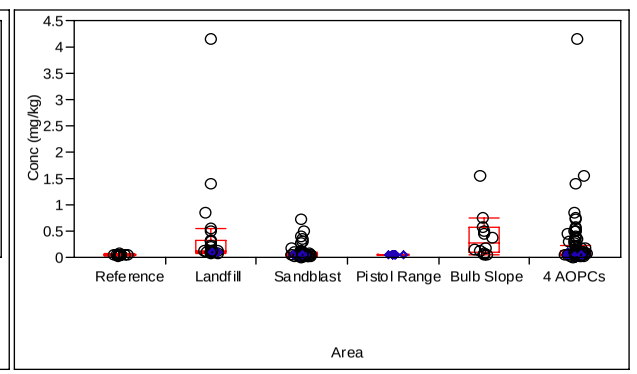
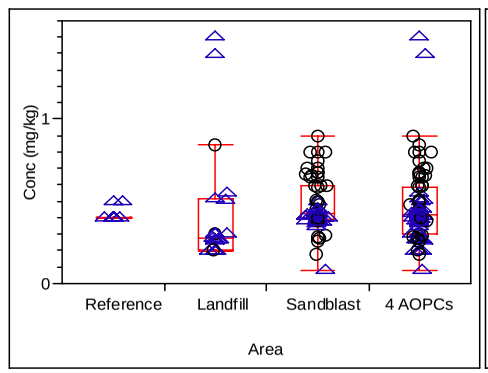
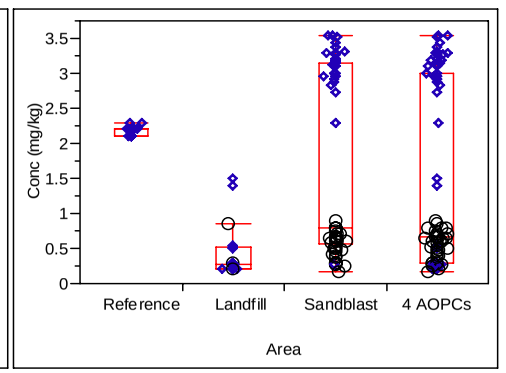


CENSORED AT MRL

SELENIUM



CENSORED AT MDL



CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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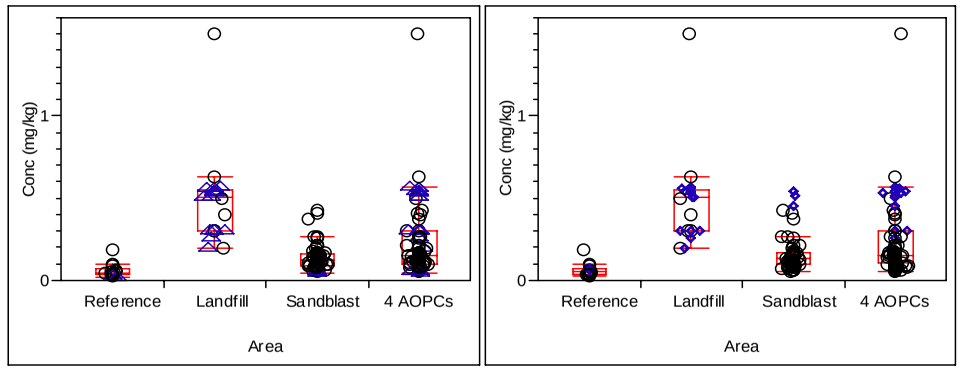
UPLAND OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN SOIL (0 - 1ft)

DRAWING NUMBER:	
FIG L-1c	
CAD FILE NUMBER:	
FIG L-1c	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Bradford\FtWorth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1c Metals in Upland Soil.dwg Nov 17, 2010 - 8:09am

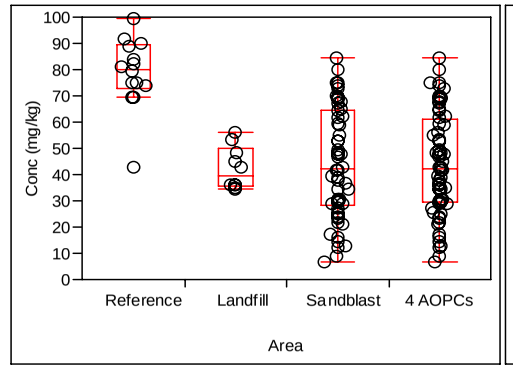
SILVER



CENSORED AT MDL

CENSORED AT MRL

VANADIUM



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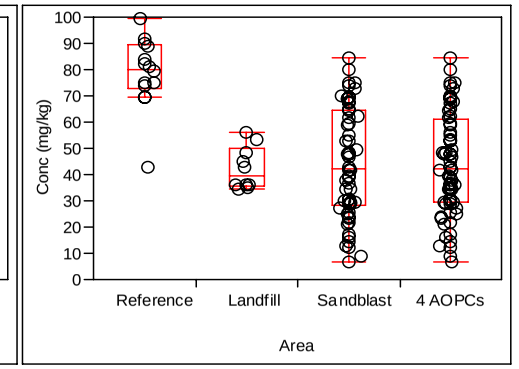
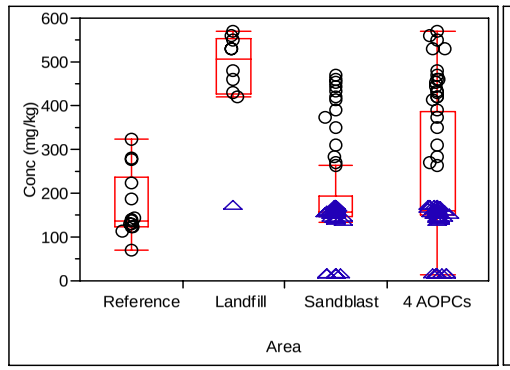
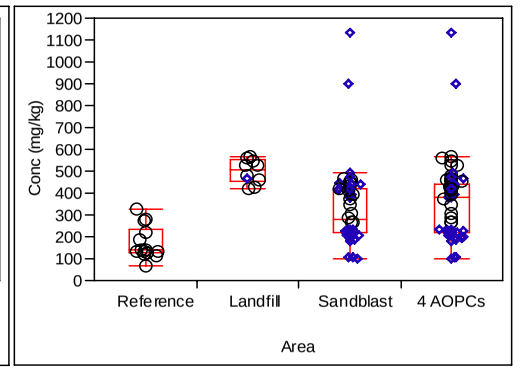


CENSORED AT MRL

SODIUM

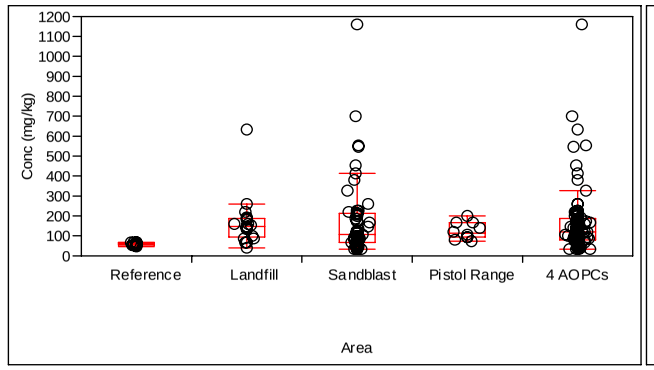


CENSORED AT MDL



CENSORED AT MRL

ZINC



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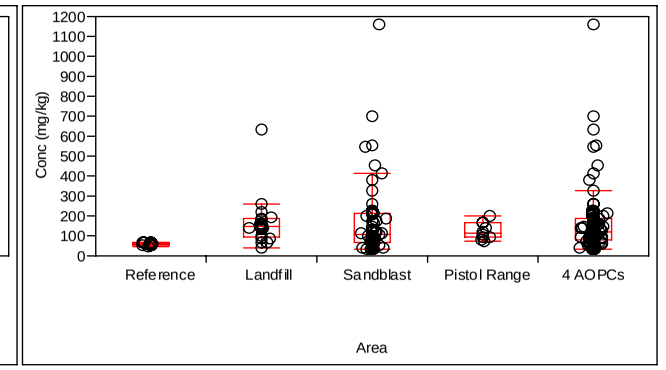
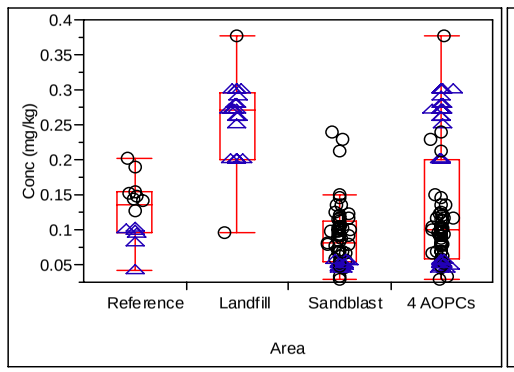


CENSORED AT MRL

THALLIUM



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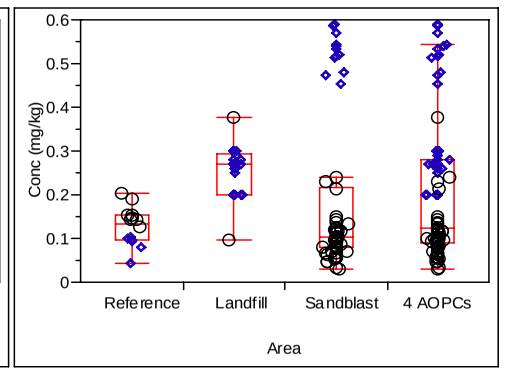

CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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METALS IN SOIL (0 - 1ft)

DRAWING NUMBER:	
FIG L-1d	
CAD FILE NUMBER:	
FIG L-1d	
SHEET: OF	REV.

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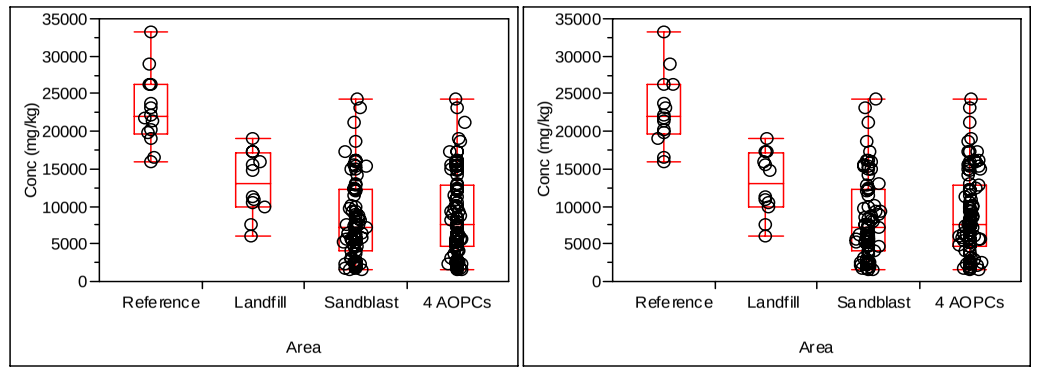
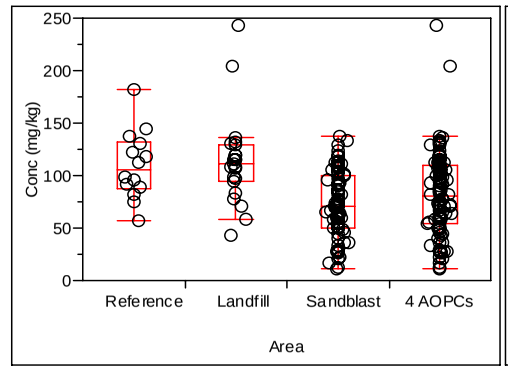
ALUMINUM



CENSORED AT MDL

CENSORED AT MRL

BARIUM



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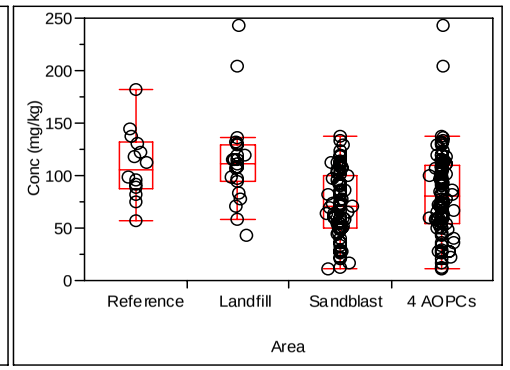
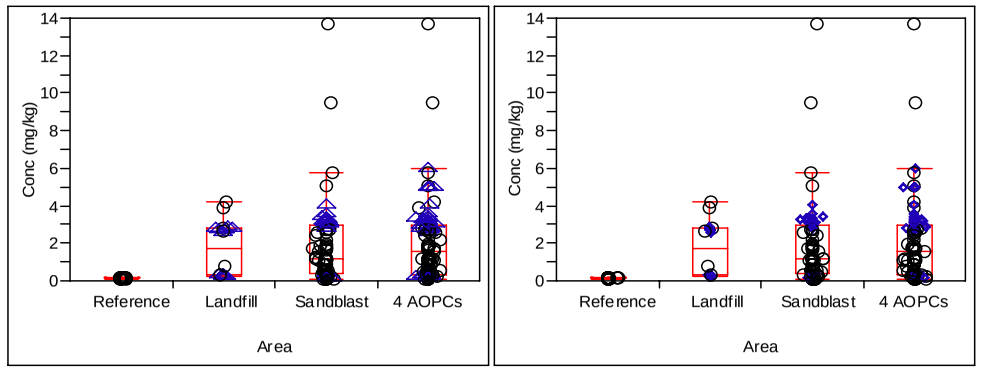


CENSORED AT MRL

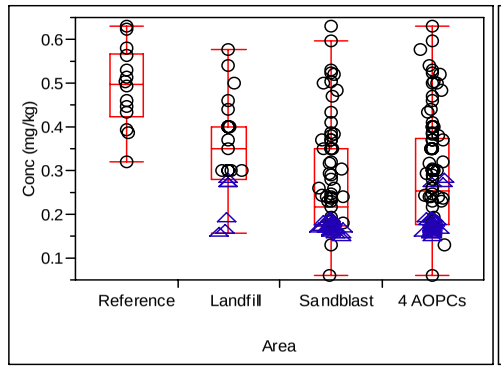
ANTIMONY



CENSORED AT MDL

CENSORED AT MRL

BERYLLIUM



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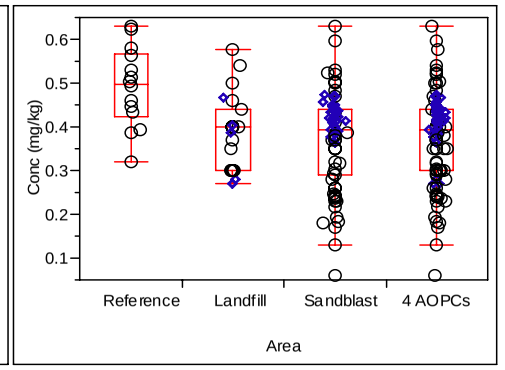
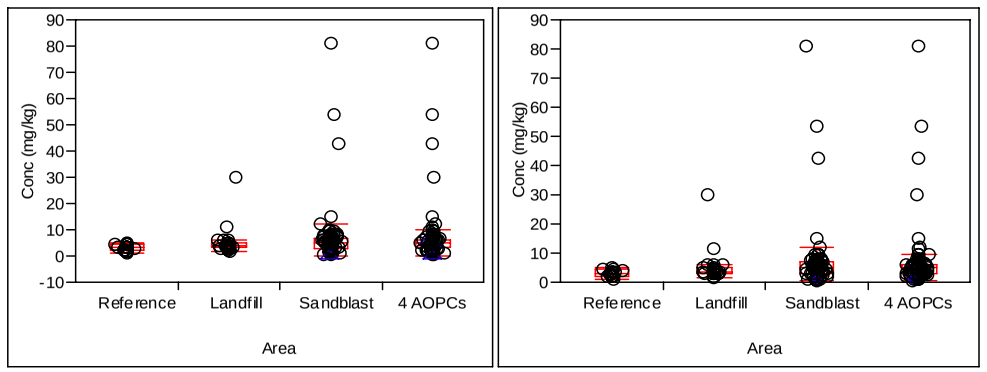


CENSORED AT MRL

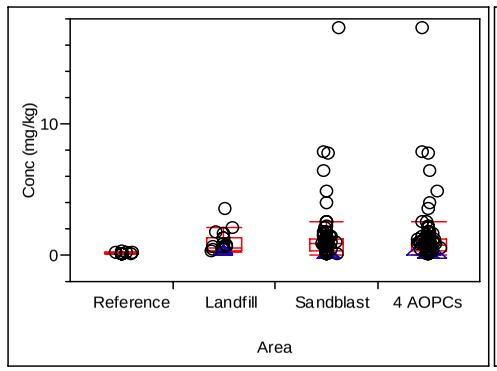
ARSENIC



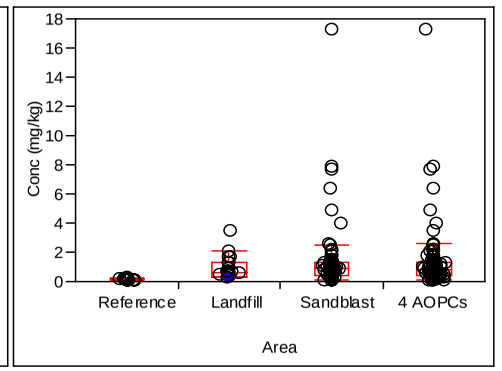
CENSORED AT MDL

CENSORED AT MRL

CADMIUM



CENSORED AT MDL



CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN SOIL (0 - 3ft)

DRAWING NUMBER:	
FIG L-1e	
CAD FILE NUMBER:	
FIG L-1e	
SHEET: OF	REV.

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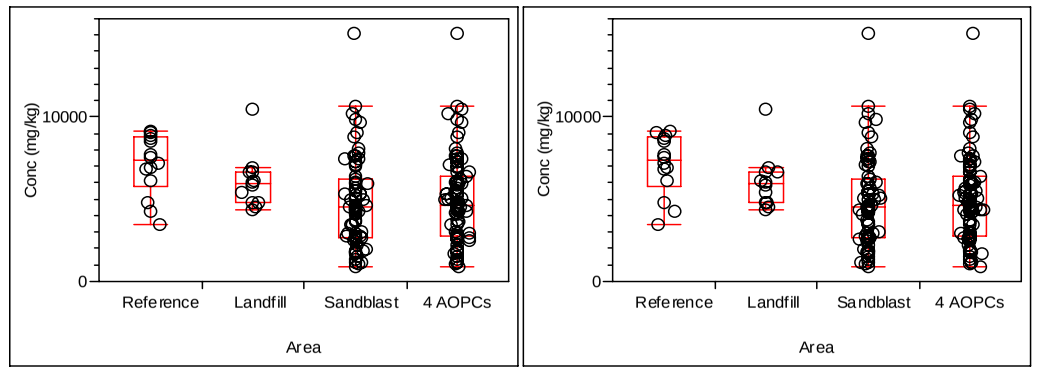
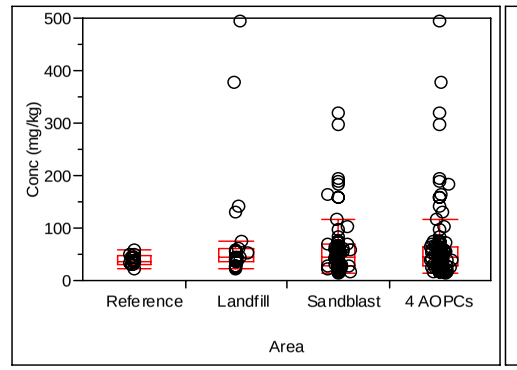
CALCIUM



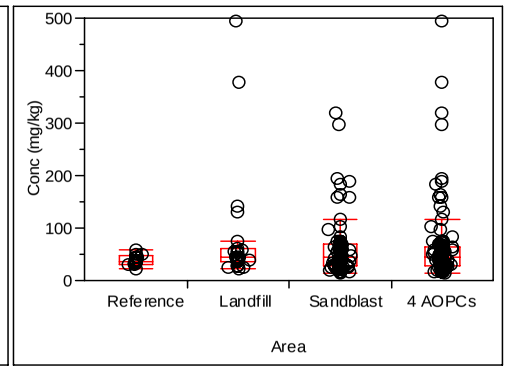
CENSORED AT MDL

CENSORED AT MRL

COPPER

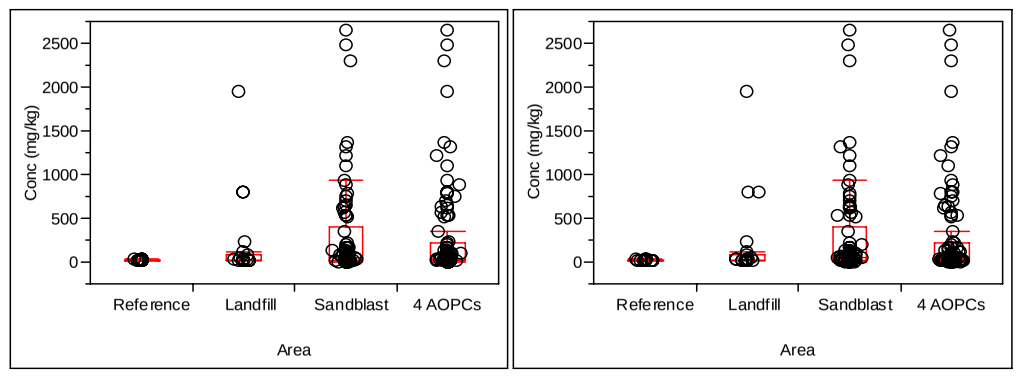


CENSORED AT MDL



CENSORED AT MRL

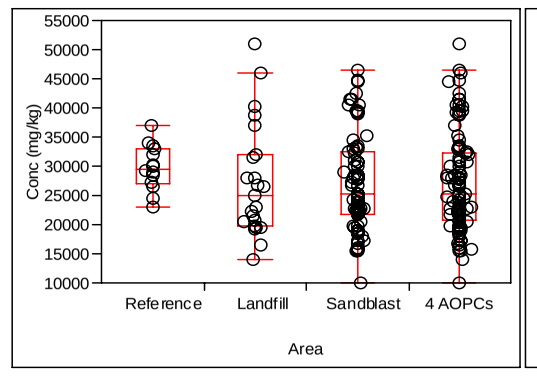
CHROMIUM



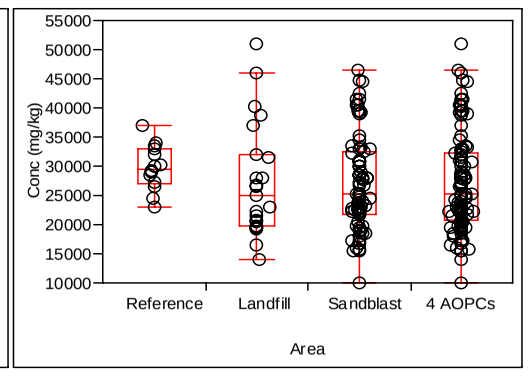
CENSORED AT MDL

CENSORED AT MRL

IRON

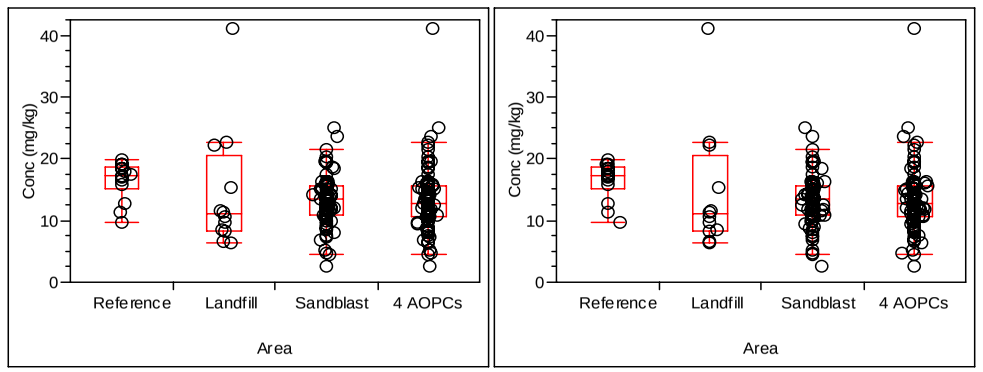


CENSORED AT MDL



CENSORED AT MRL

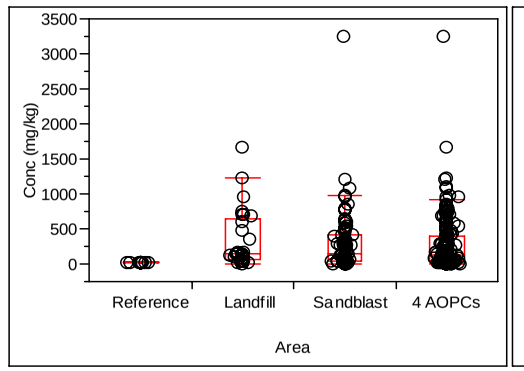
COBALT



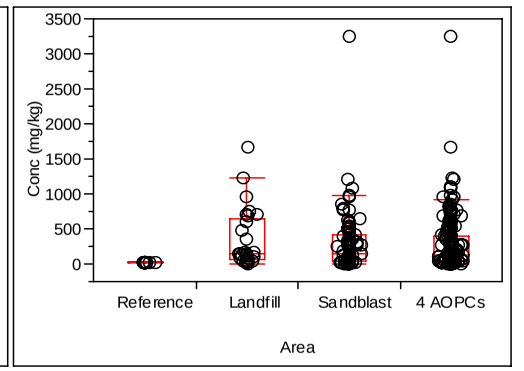
CENSORED AT MDL

CENSORED AT MRL

LEAD



CENSORED AT MDL



CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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METALS IN SOIL (0 - 3ft)

DRAWING NUMBER:	
FIG L-1f	
CAD FILE NUMBER:	
FIG L-1f	
SHEET: OF	REV.

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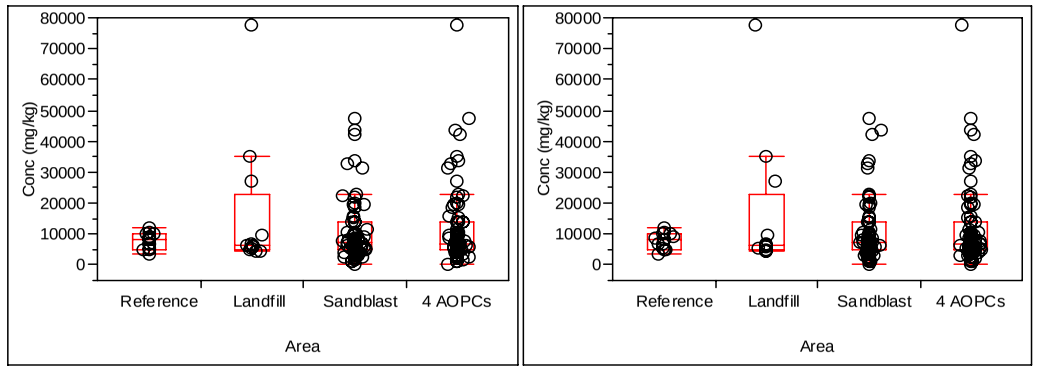
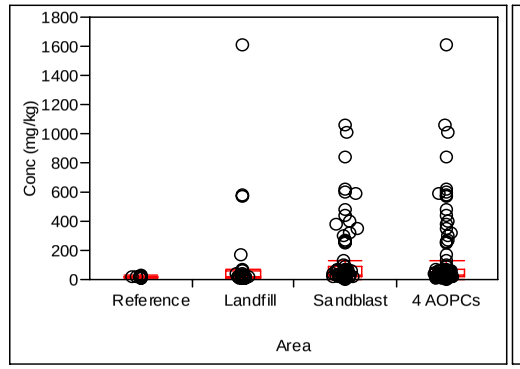
MAGNESIUM



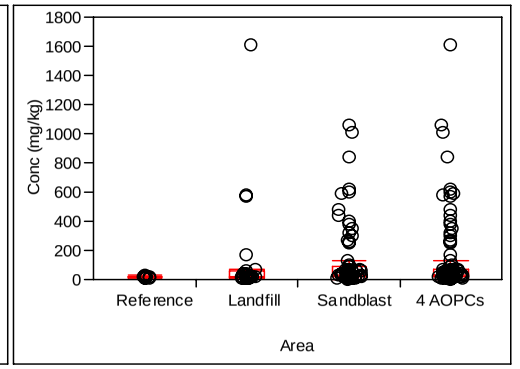
CENSORED AT MDL

CENSORED AT MRL

NICKEL

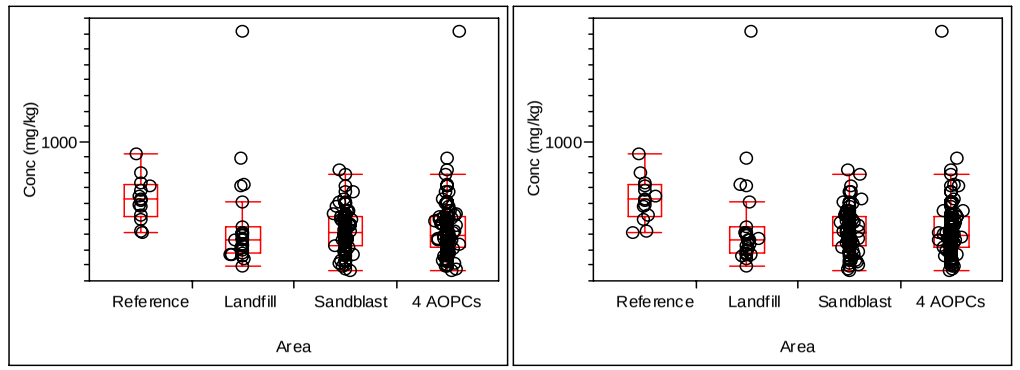


CENSORED AT MDL



CENSORED AT MRL

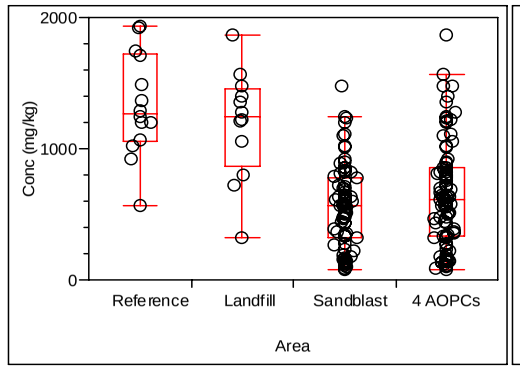
MANGANESE



CENSORED AT MDL

CENSORED AT MRL

POTASSIUM



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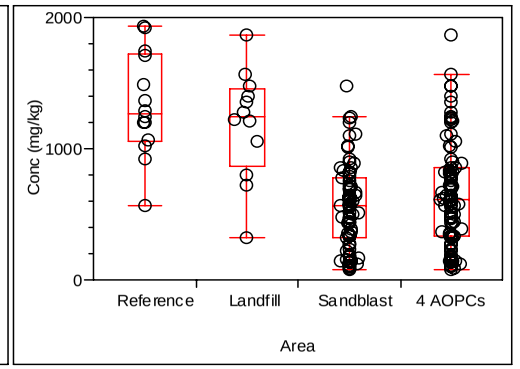
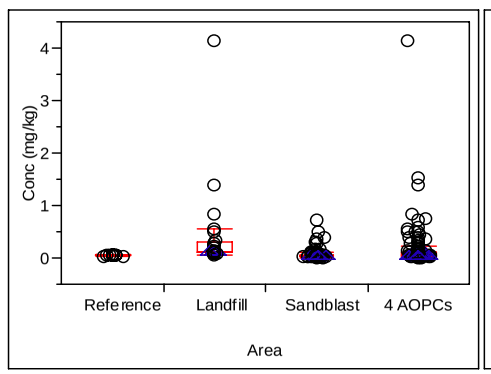


CENSORED AT MRL

MERCURY



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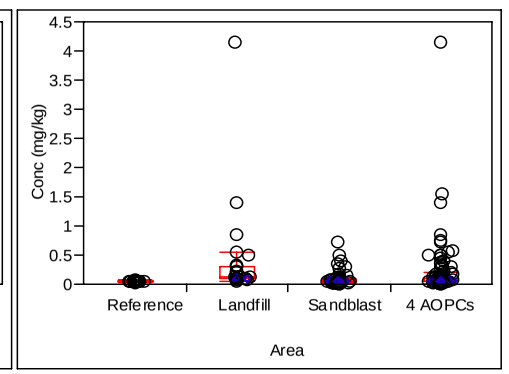

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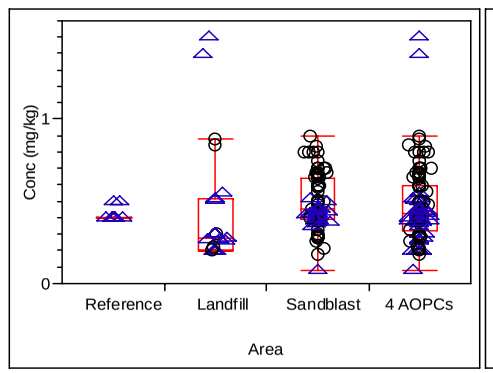
SELENIUM



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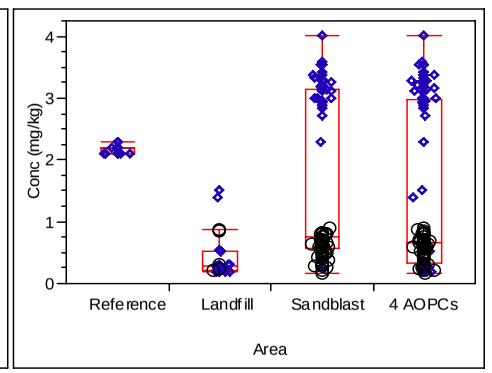

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
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METALS IN SOIL (0 - 3ft)

DRAWING NUMBER:	
FIG L-1g	
CAD FILE NUMBER: FIG L-1g	
SHEET: OF	REV.

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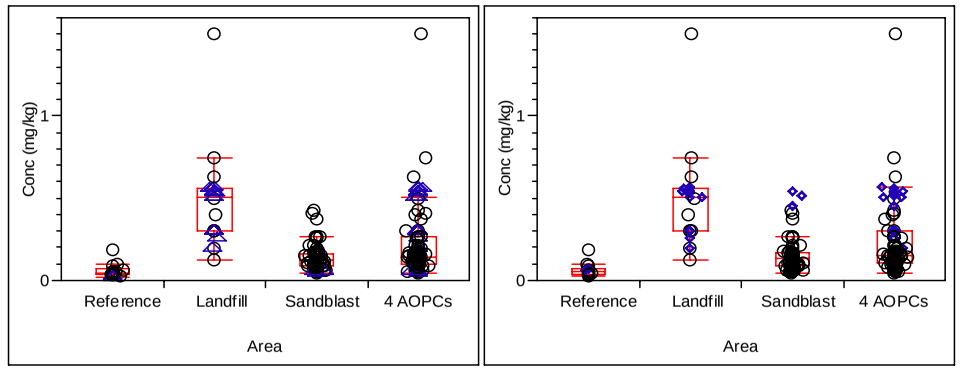
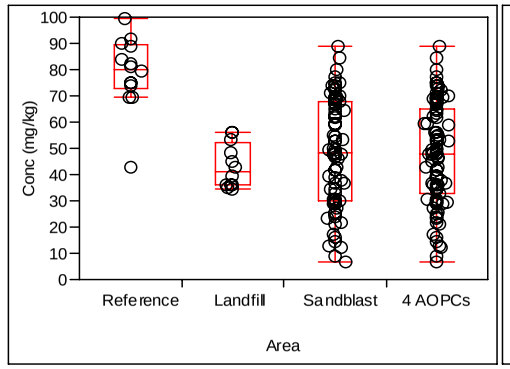
SILVER



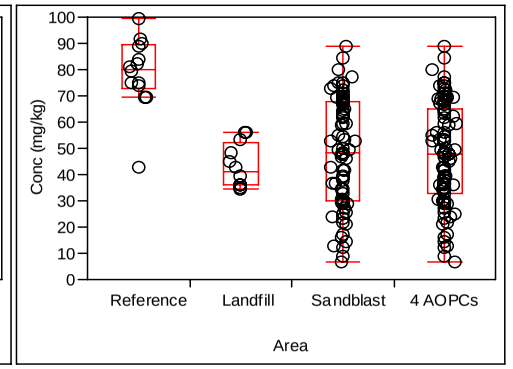
CENSORED AT MDL

CENSORED AT MRL

VANADIUM

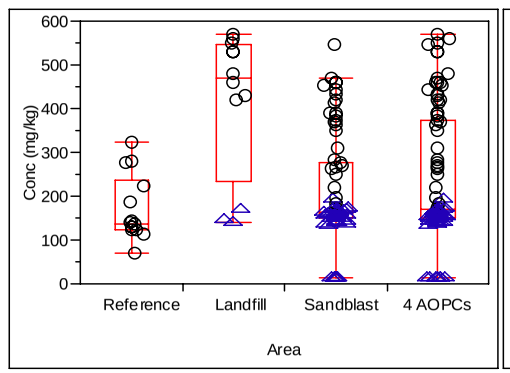


CENSORED AT MDL



CENSORED AT MRL

SODIUM



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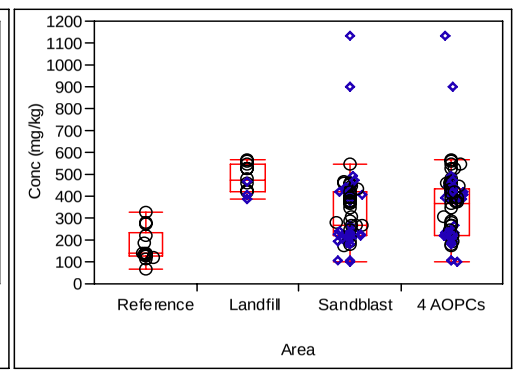
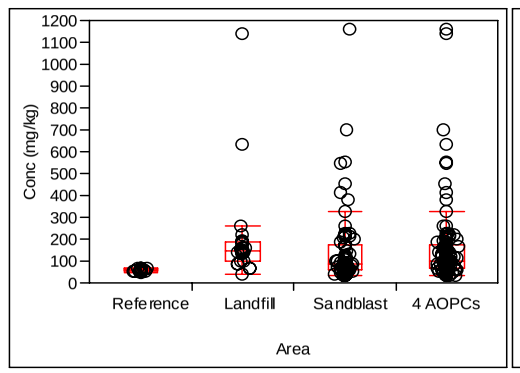


CENSORED AT MRL

ZINC



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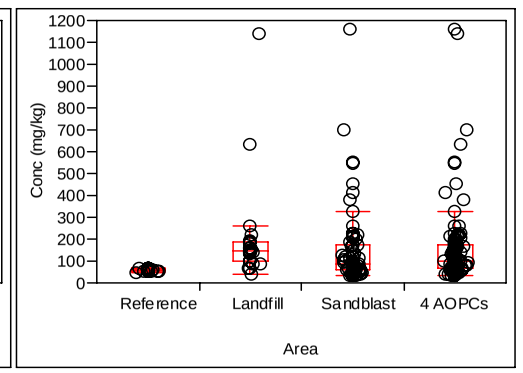
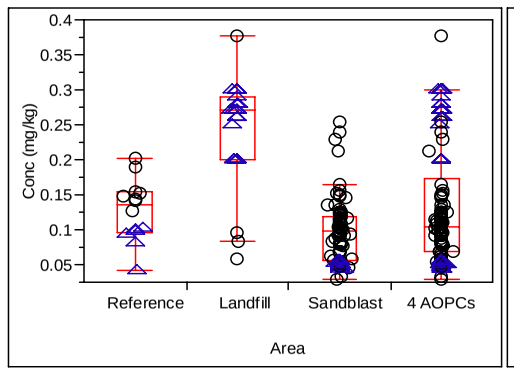


CENSORED AT MRL

THALLIUM



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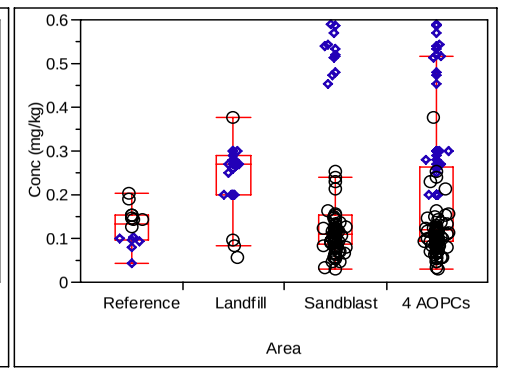

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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UPLAND OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN SOIL (0 - 3ft)

DRAWING NUMBER:	
FIG L-1h	
CAD FILE NUMBER:	
FIG L-1h	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Bradford1\FtWorth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1h Metals in Upland Soil.dwg Nov 17, 2010 - 8:26am

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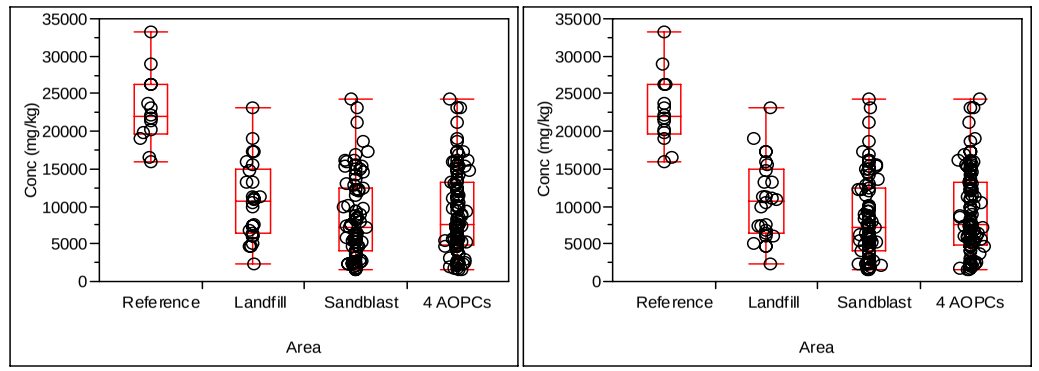
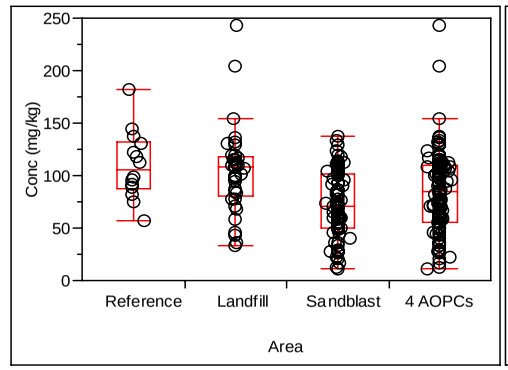


CENSORED AT MDL

CENSORED AT MRL

BARIUM



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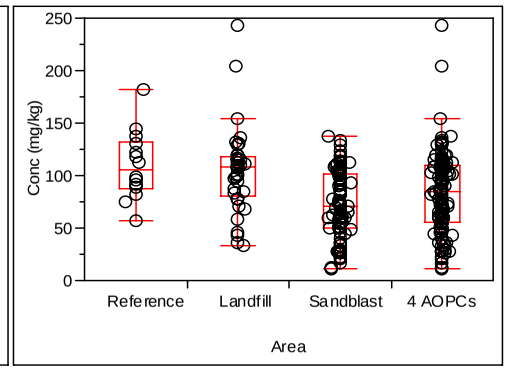
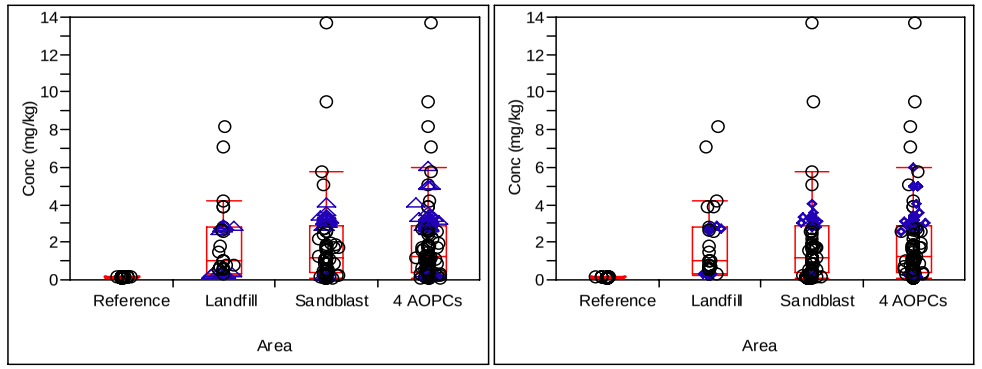


CENSORED AT MRL

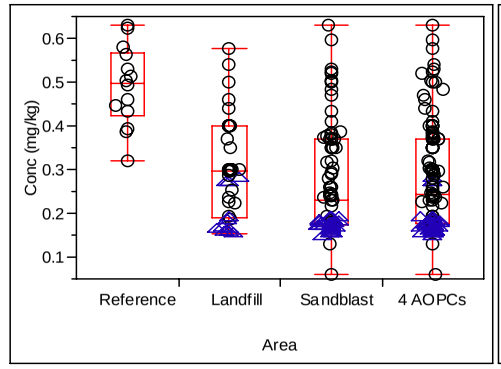
ANTIMONY



CENSORED AT MDL

CENSORED AT MRL

BERYLLIUM



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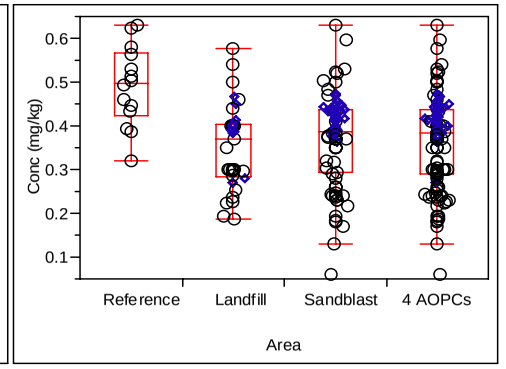
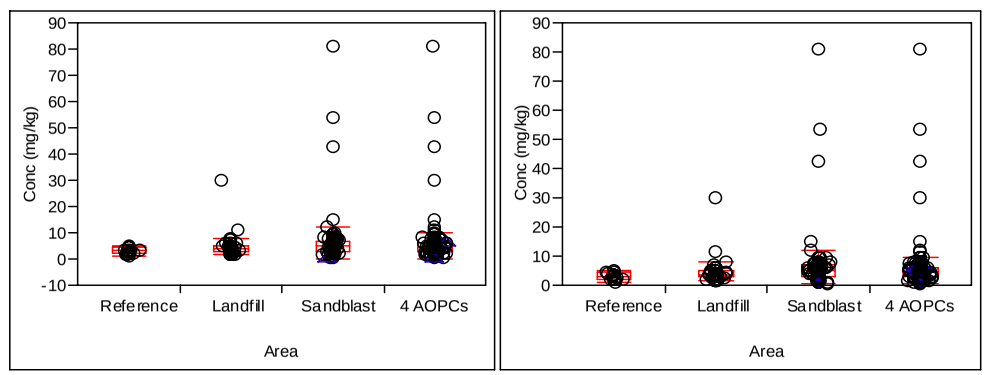


CENSORED AT MRL

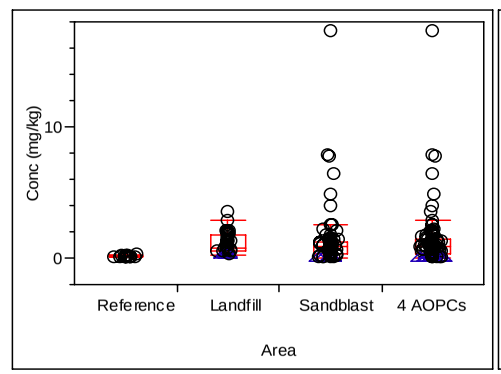
ARSENIC



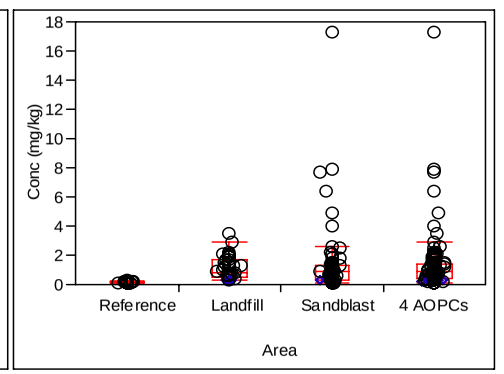
CENSORED AT MDL

CENSORED AT MRL

CADMIUM



CENSORED AT MDL



CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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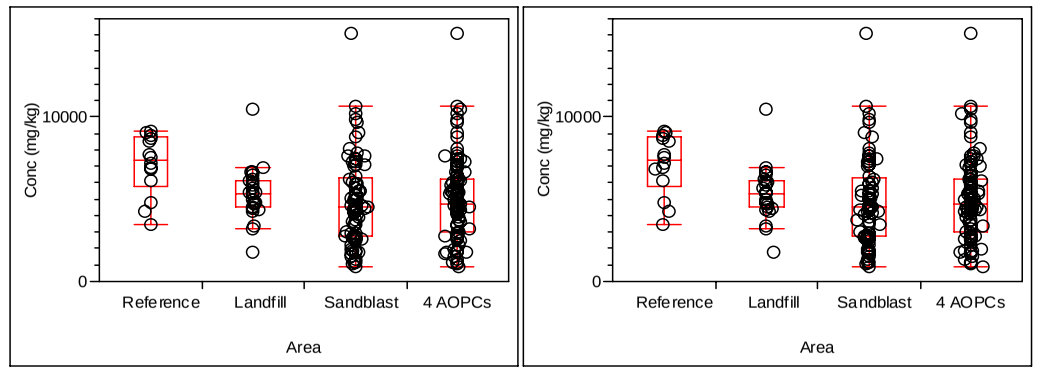
METALS IN SOIL (0 - 10ft)

DRAWING NUMBER:	
FIG L-1i	
CAD FILE NUMBER:	
FIG L-1i	
SHEET: OF	REV.

O:\25692709 USACE\53--F0072173.00 Bradford\FtWorth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1i Metals in Upland Soil.dwg Nov 17, 2010 - 8:26am

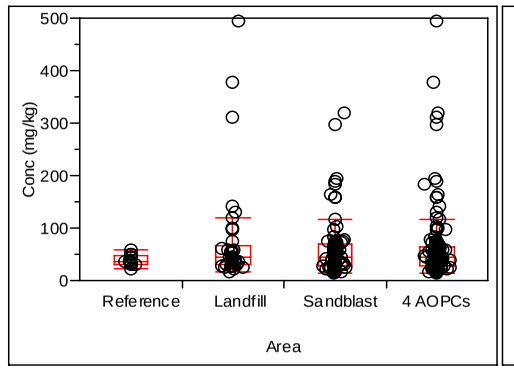
CALCIUM



CENSORED AT MDL

CENSORED AT MRL

COPPER



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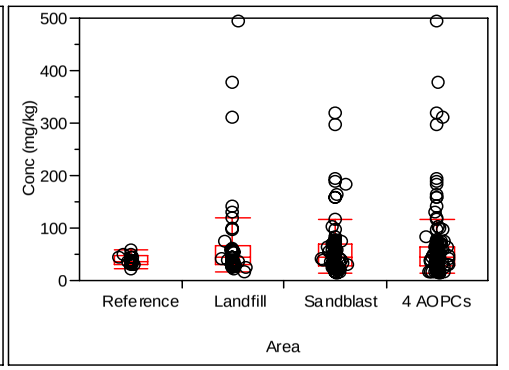
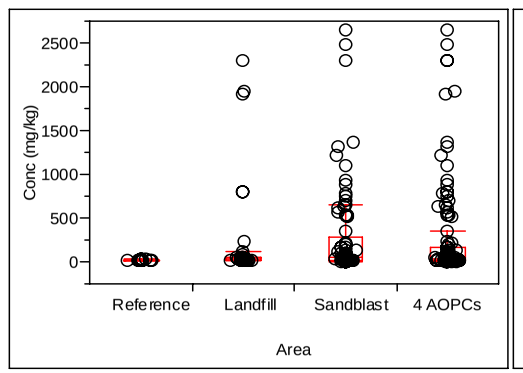


CENSORED AT MRL

CHROMIUM



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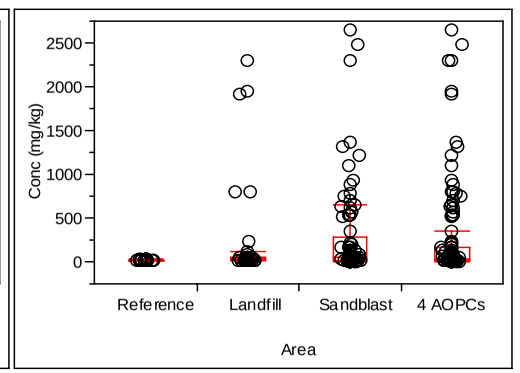
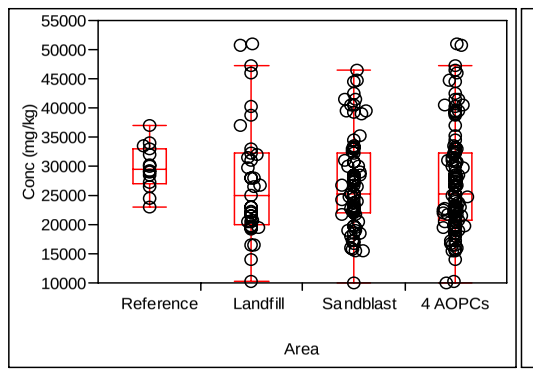


CENSORED AT MRL

IRON



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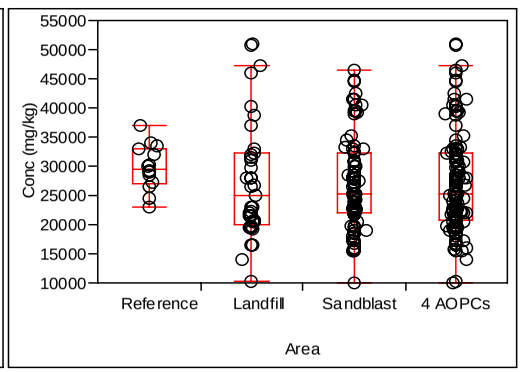
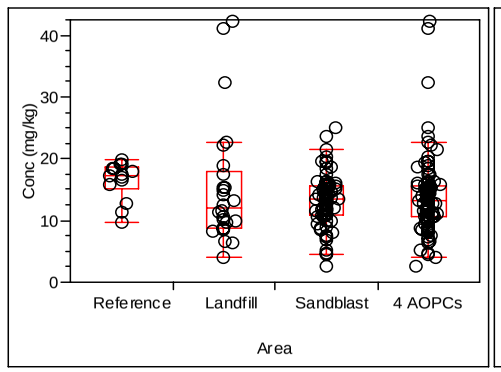


CENSORED AT MRL

COBALT



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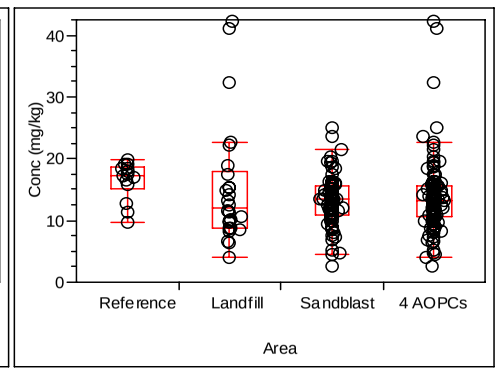
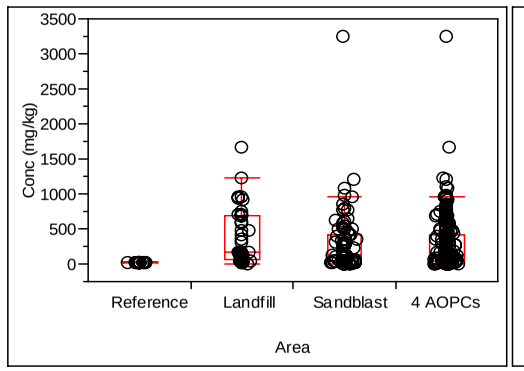


CENSORED AT MRL

LEAD



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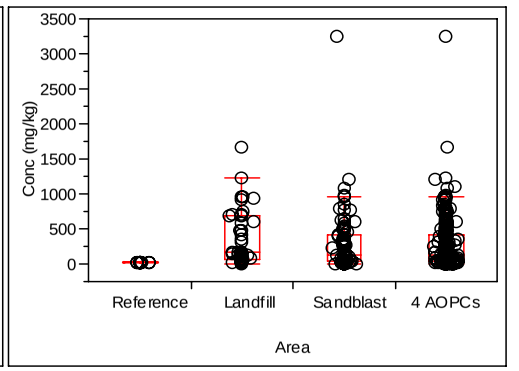

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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METALS IN SOIL (0 - 10ft)

DRAWING NUMBER:	
FIG L-1j	
CAD FILE NUMBER:	
FIG L-1j	
SHEET: OF	REV.

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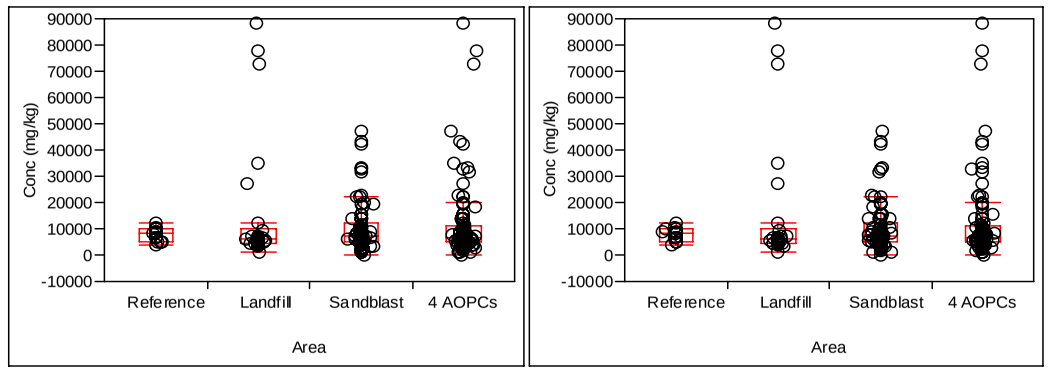
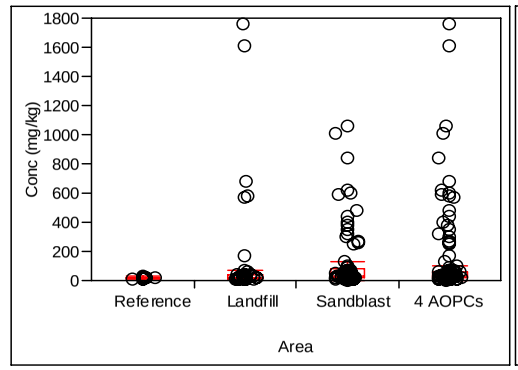
MAGNESIUM



CENSORED AT MDL

CENSORED AT MRL

NICKEL



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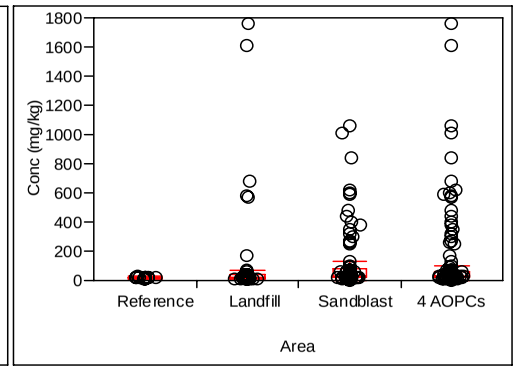
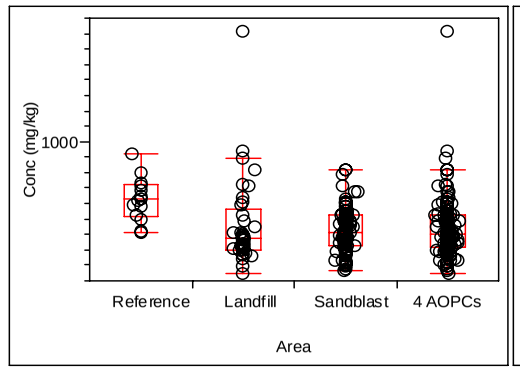


CENSORED AT MRL

MANGANESE



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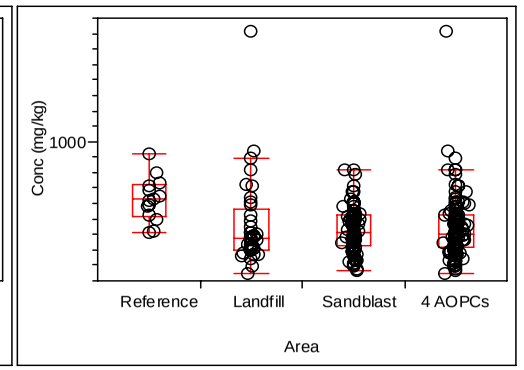
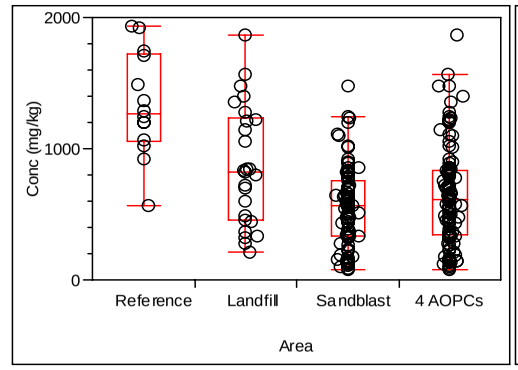


CENSORED AT MRL

POTASSIUM



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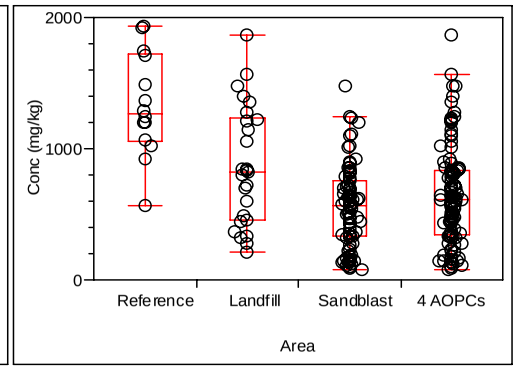
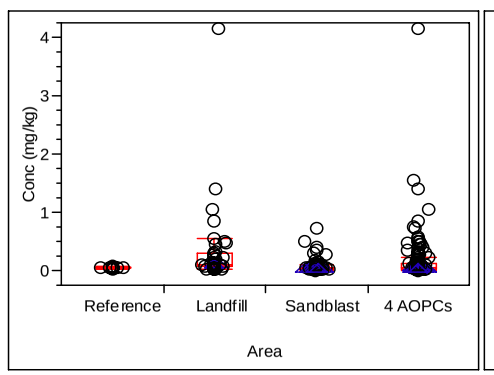


CENSORED AT MRL

MERCURY



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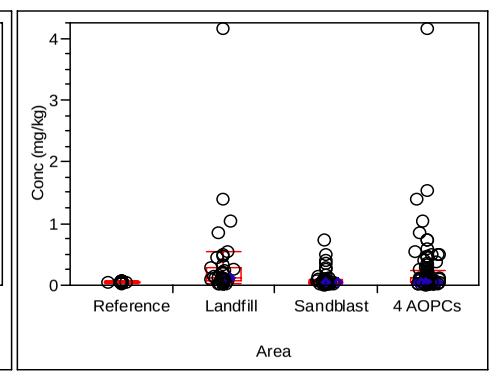
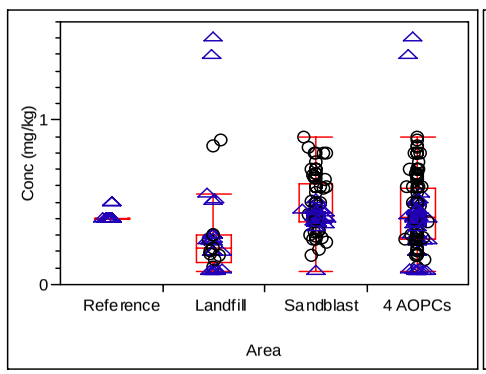


CENSORED AT MRL

SELENIUM



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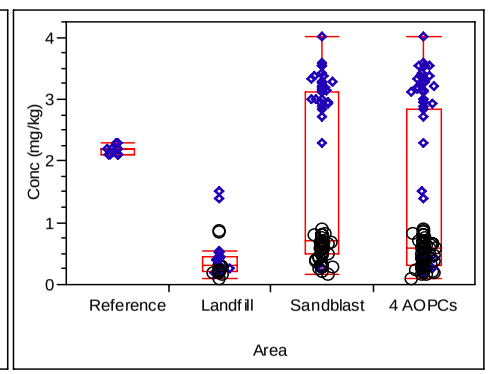

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
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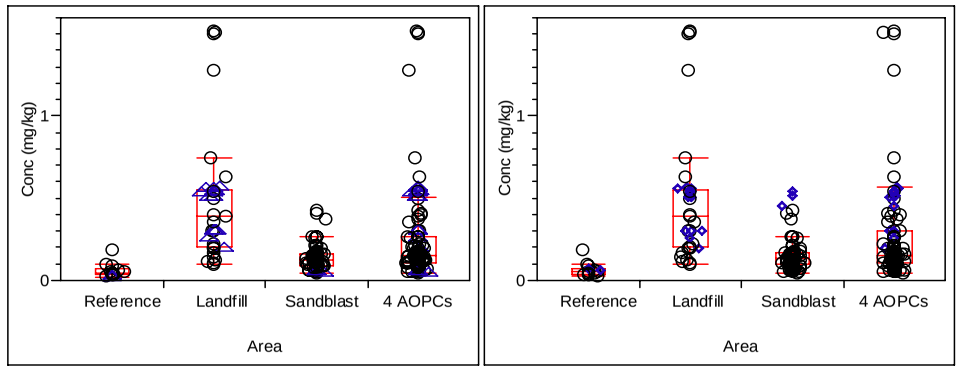
METALS IN SOIL (0 - 10ft)

DRAWING NUMBER:	
FIG L-1k	
CAD FILE NUMBER:	
FIG L-1k	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Bradford1\FtWorth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1k Metals in Upland Soil.dwg Nov 17, 2010 - 8:27am

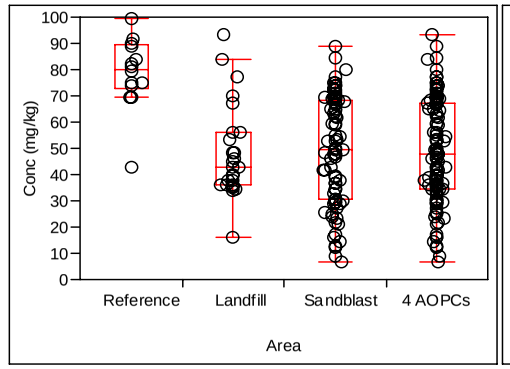
SILVER



CENSORED AT MDL

CENSORED AT MRL

VANADIUM



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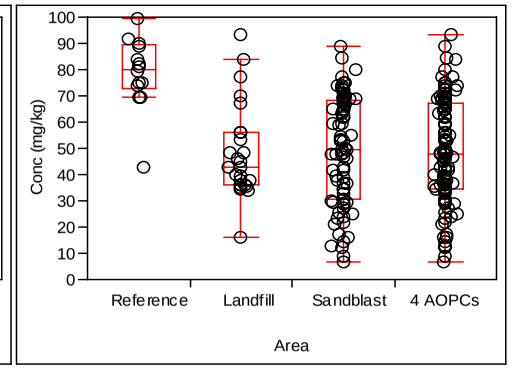
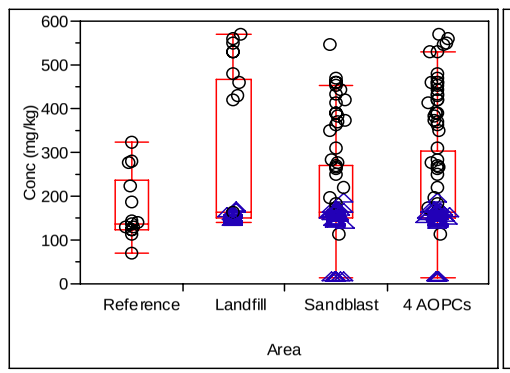


CENSORED AT MRL

SODIUM



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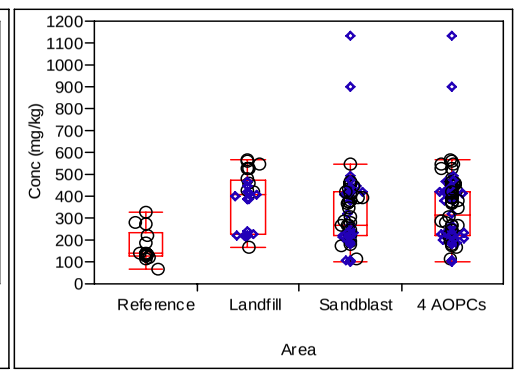
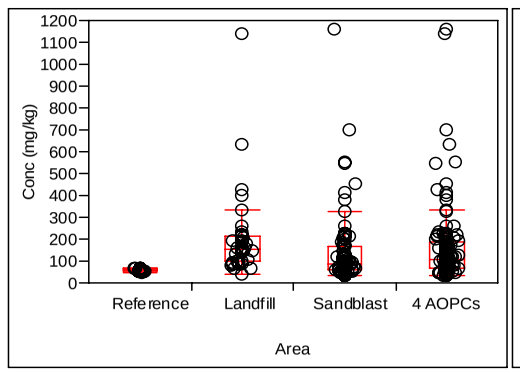
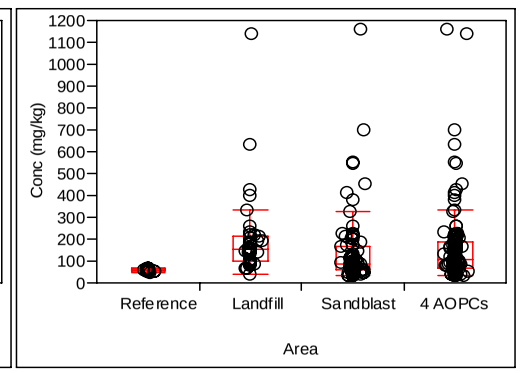


CENSORED AT MRL

ZINC

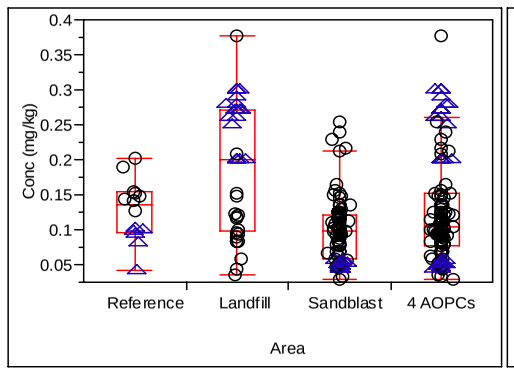


CENSORED AT MDL



CENSORED AT MRL

THALLIUM



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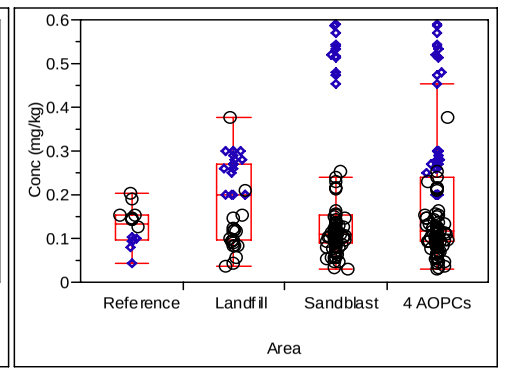

CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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CASCADE LOCKS, OREGON

UPLAND OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN SOIL (0 - 10ft)

DRAWING NUMBER:	
FIG L-1I	
CAD FILE NUMBER:	
FIG L-1I	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Bradford1\FtWorth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1I Metals in Upland Soil.dwg Nov 17, 2010 - 8:28am

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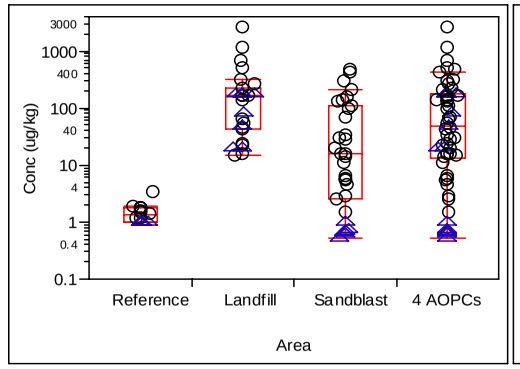

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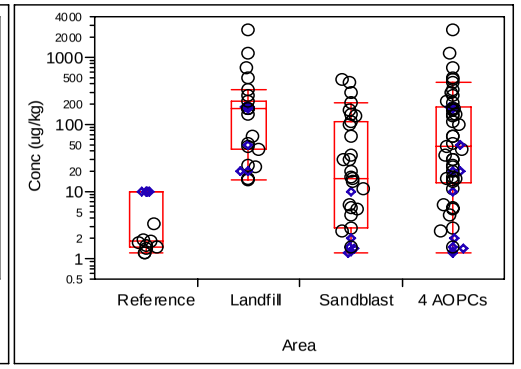
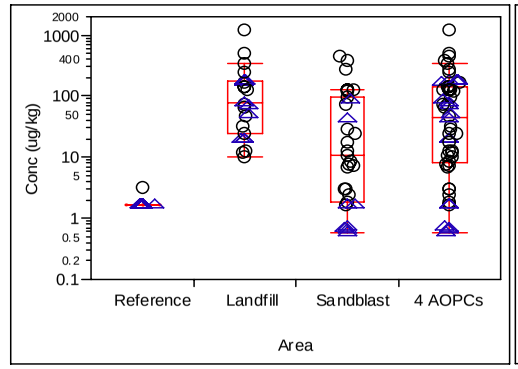


CENSORED AT MRL

FLUORENE



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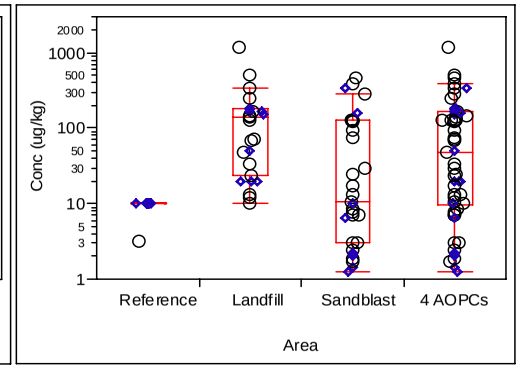
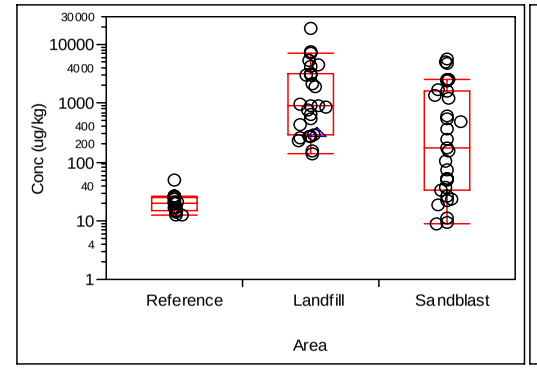


CENSORED AT MRL

TOTAL LPAHs



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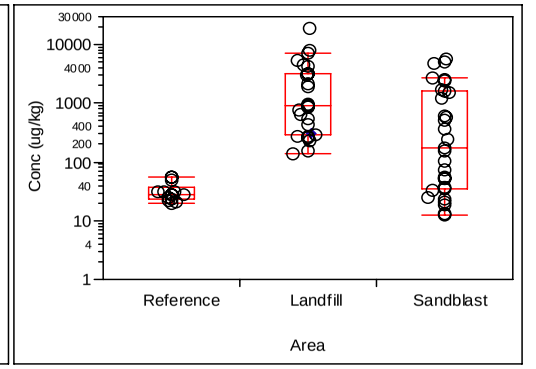
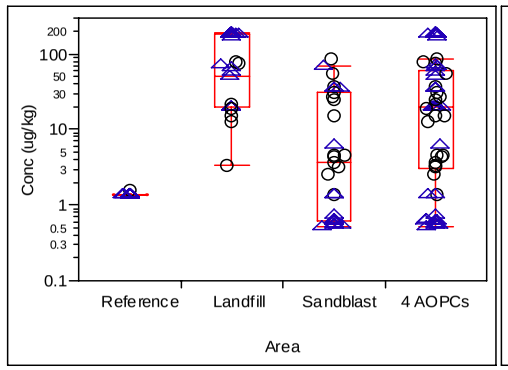


CENSORED AT MRL

ACENAPHTHYLENE



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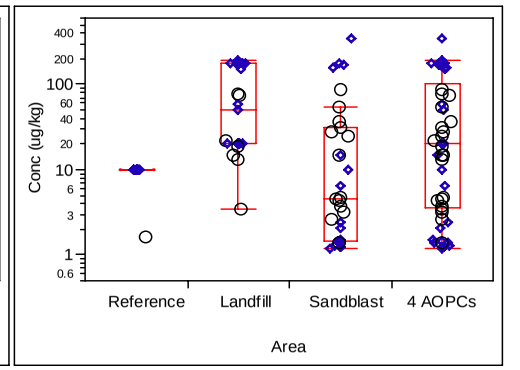
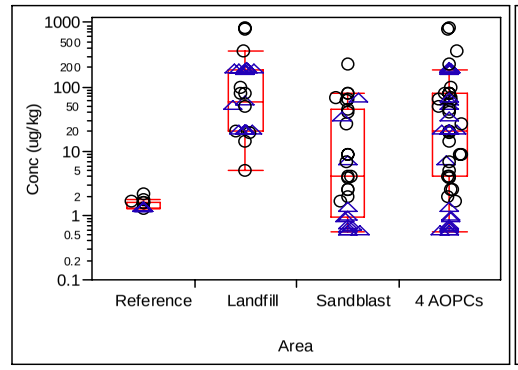


CENSORED AT MRL

NAPHTHALENE



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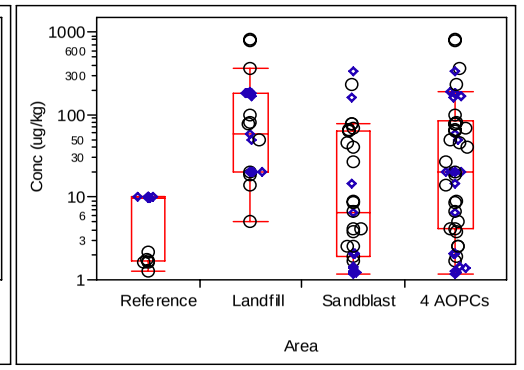
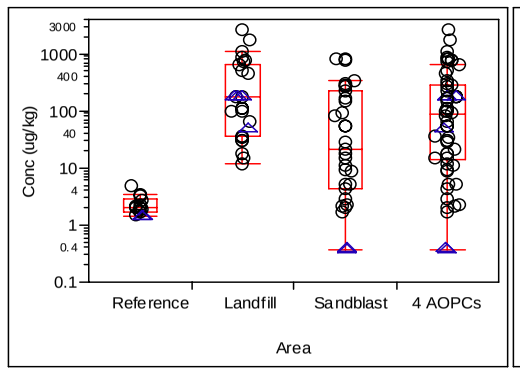


CENSORED AT MRL

ANTHRACENE



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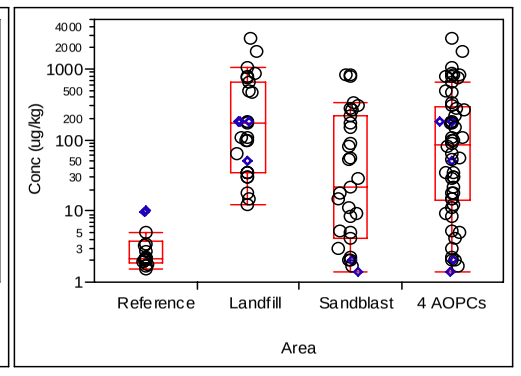
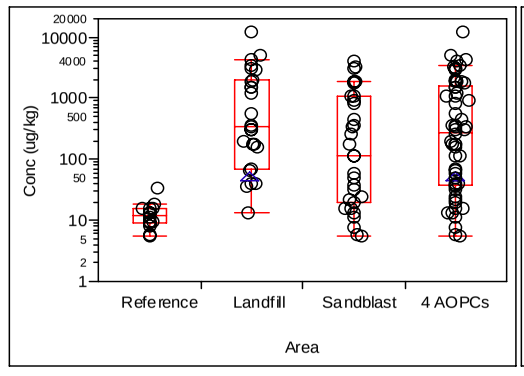


CENSORED AT MRL

PHENANTHRENE



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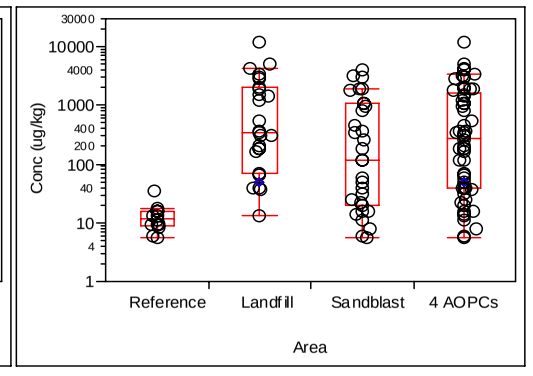

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No. 25696946	DESIGNED: LSM	PROJ. MANAGER: MP	
SCALE:	DRAWN BY: HP	APPROVED BY: LSM	
	CHECKED BY: LSM	DATE: NOV 2010	

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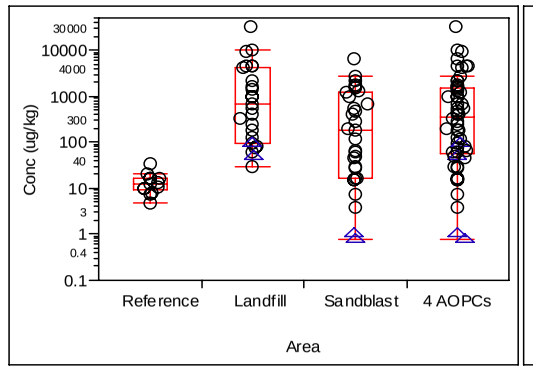
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN UPLAND SOIL (0 - 1ft)

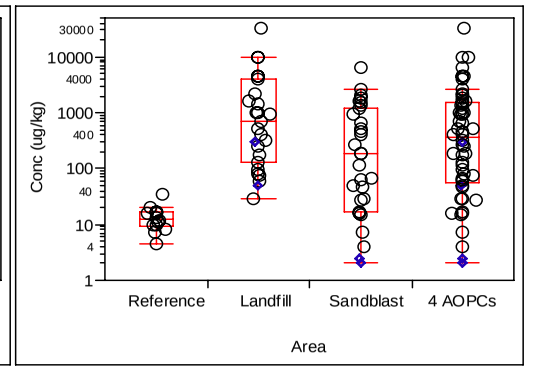
DRAWING NUMBER:	
FIG L-1m	
CAD FILE NUMBER:	
FIG L-1m	
SHEET: OF	REV.

O:\25692709 USACE\53-F00721730.00 Bradford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1m PAHs in Upland Soil.dwg Nov 17, 2010 - 8:28am

BENZO(A)ANTHRACENE

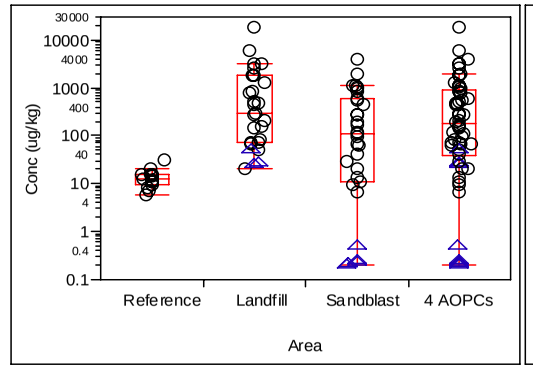


CENSORED AT MDL



CENSORED AT MRL

BENZO(G,H,I)PERYLENE



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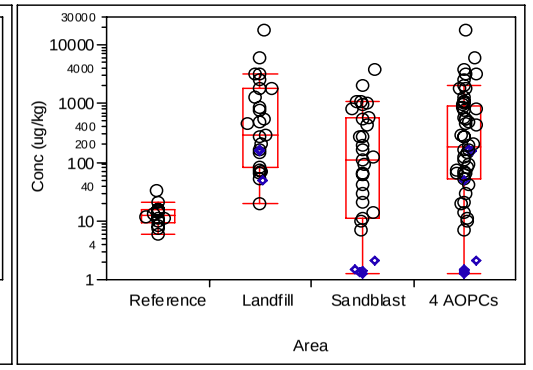
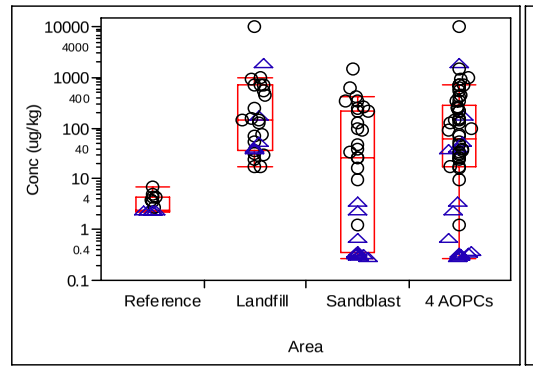


CENSORED AT MRL

DIBENZ(A,H)ANTHRACENE



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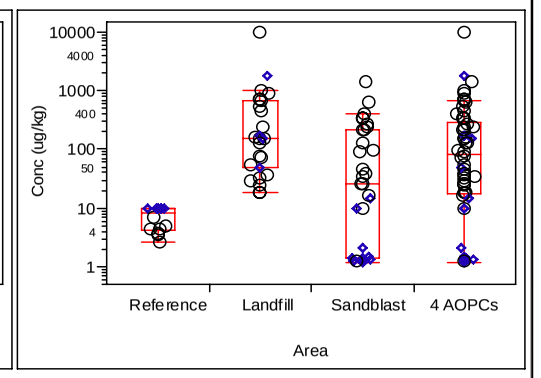
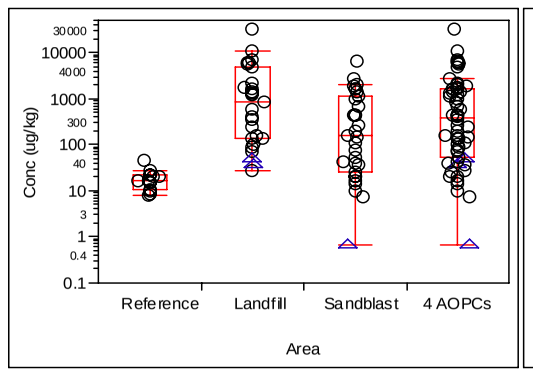


CENSORED AT MRL

BENZO(A)PYRENE



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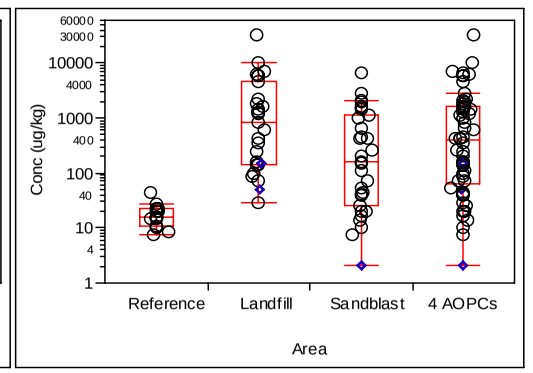
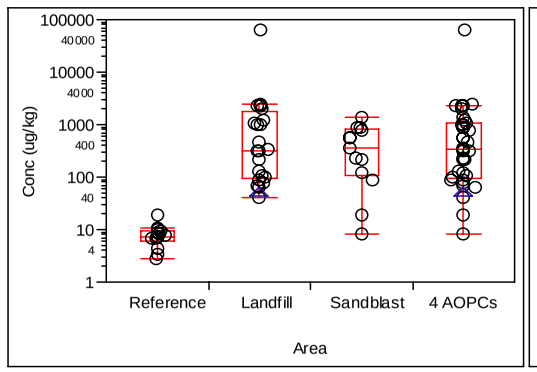


CENSORED AT MRL

BENZO(K)FLUORANTHENE



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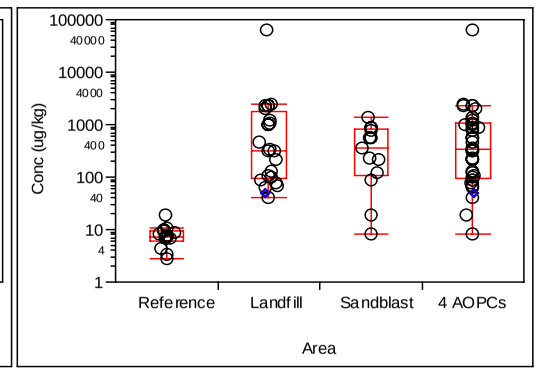
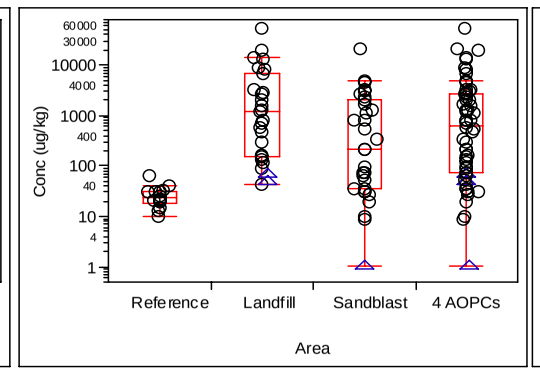


CENSORED AT MRL

FLUORANTHENE



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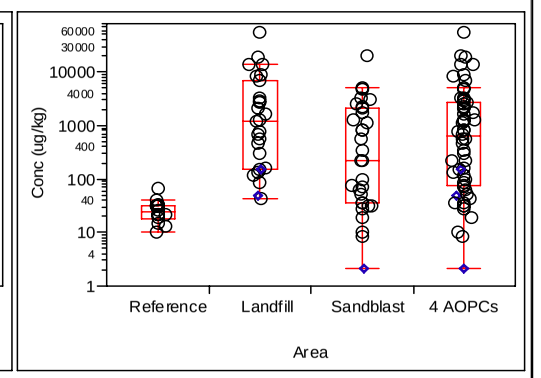
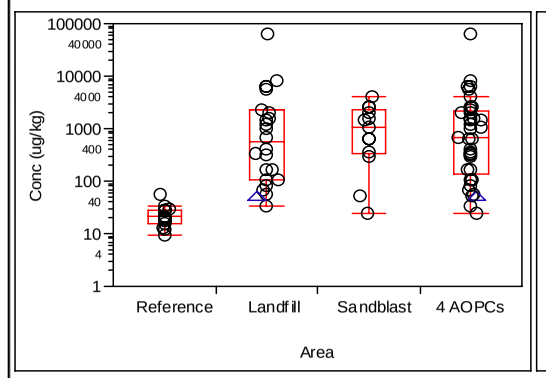


CENSORED AT MRL

BENZO(B)FLUORANTHENE



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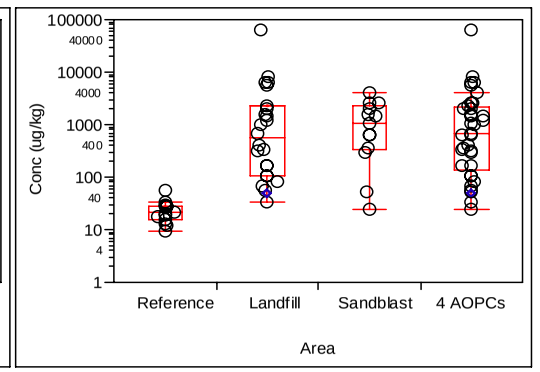
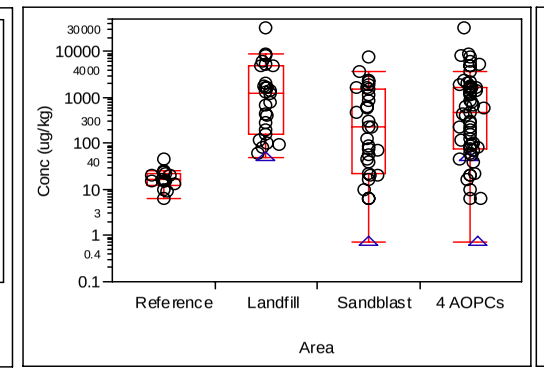


CENSORED AT MRL

CHRYSENE



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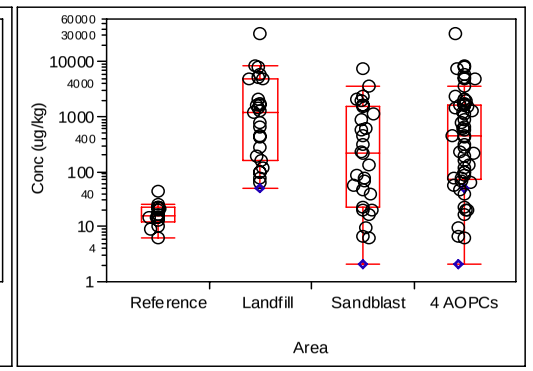
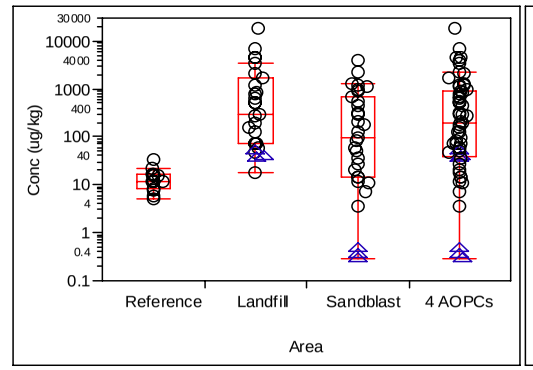


CENSORED AT MRL

INDENO(1,2,3-CD)PYRENE



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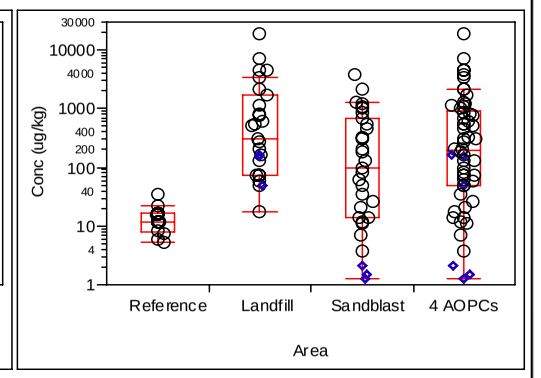

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No. 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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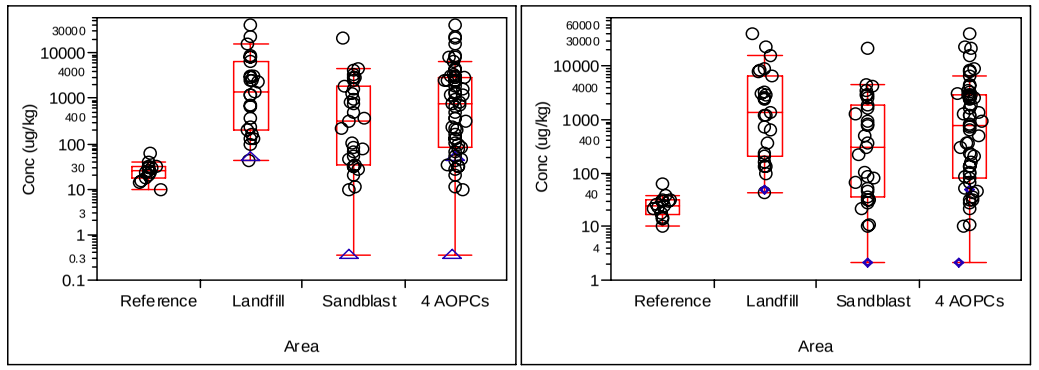
UPLAND OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN UPLAND SOIL (0 - 1ft)

DRAWING NUMBER: FIG L-1n	
CAD FILE NUMBER: FIG L-1n	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Bradford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1n PAHs in Uplond Soil.dwg Nov 17, 2010 - 8:29am

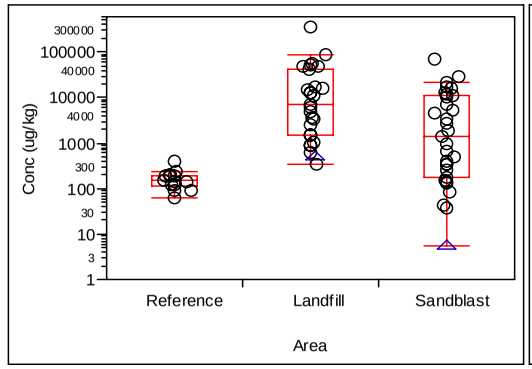
PYRENE



CENSORED AT MDL

CENSORED AT MRL

TOTAL HPAHs



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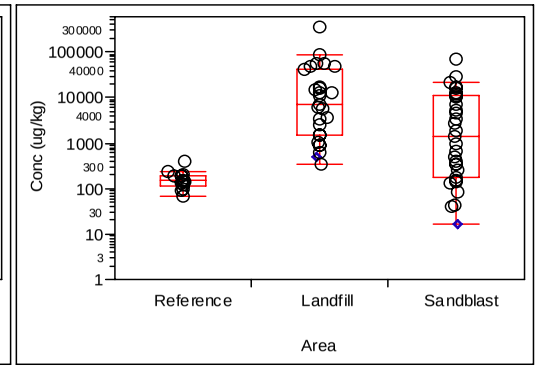
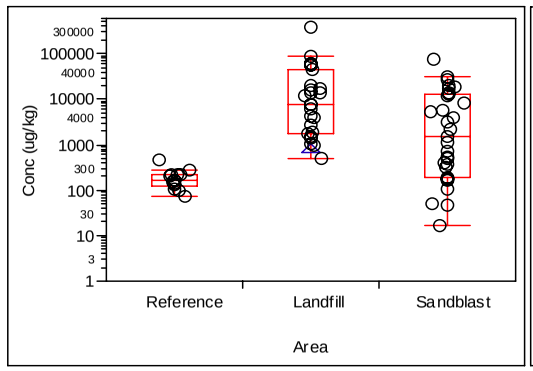


CENSORED AT MRL

tPAHs



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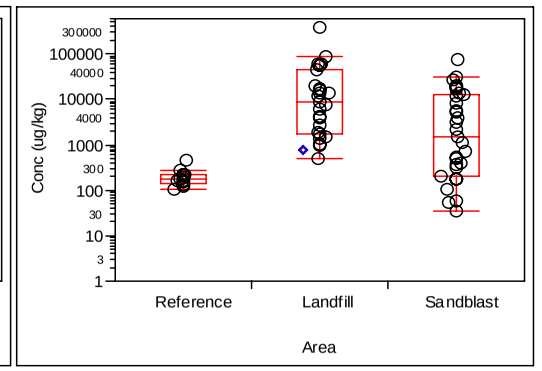

CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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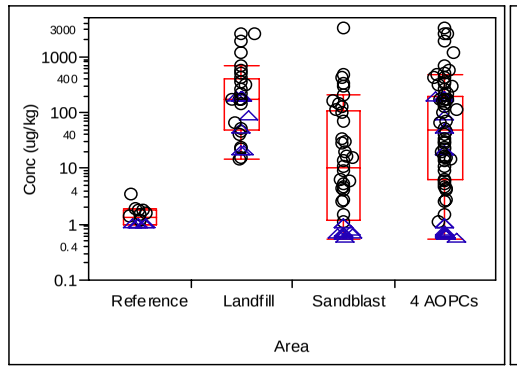
UPLAND OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN UPLAND SOIL (0 - 1ft)

DRAWING NUMBER: FIG L-1o
CAD FILE NUMBER: FIG L-1o
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1o PAHs in Upland Soil.dwg Nov 17, 2010 - 8:30am

ACENAPHTHENE



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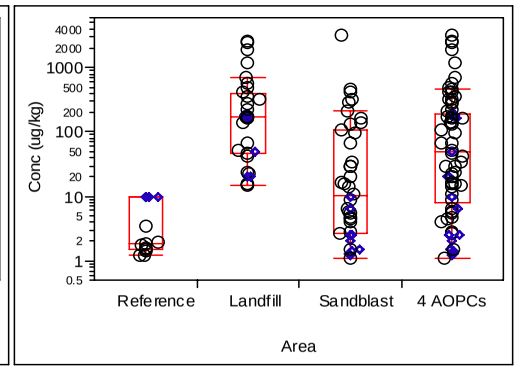
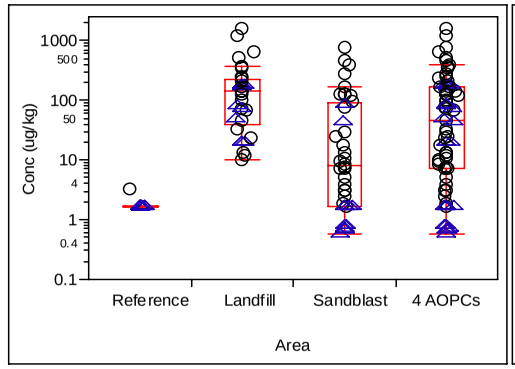
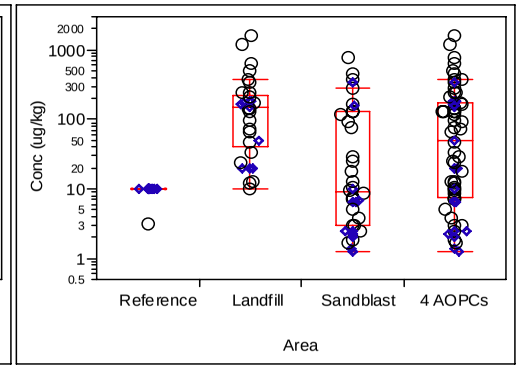


CENSORED AT MRL

FLUORENE

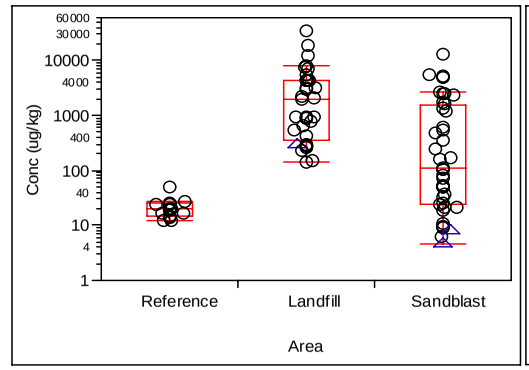


CENSORED AT MDL



CENSORED AT MRL

TOTAL LPAHs



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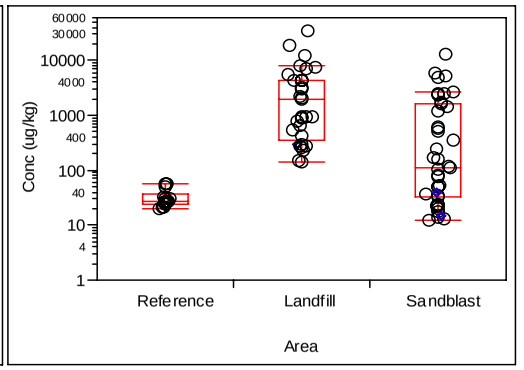
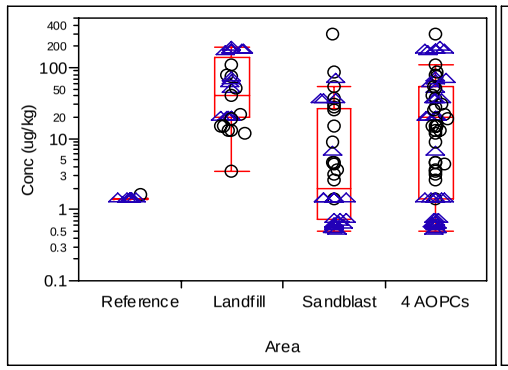


CENSORED AT MRL

ACENAPHTHYLENE



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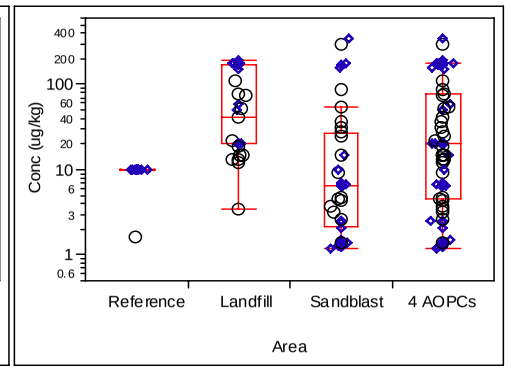
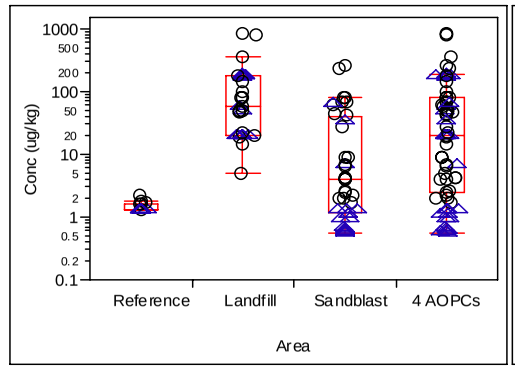


CENSORED AT MRL

NAPHTHALENE



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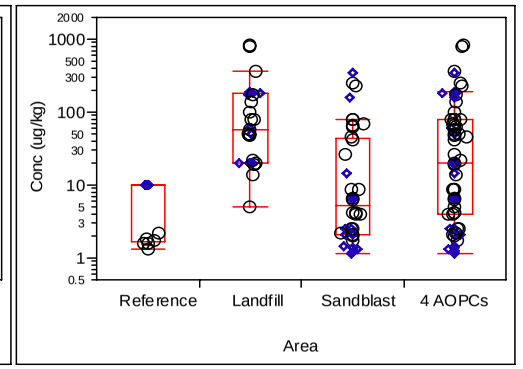
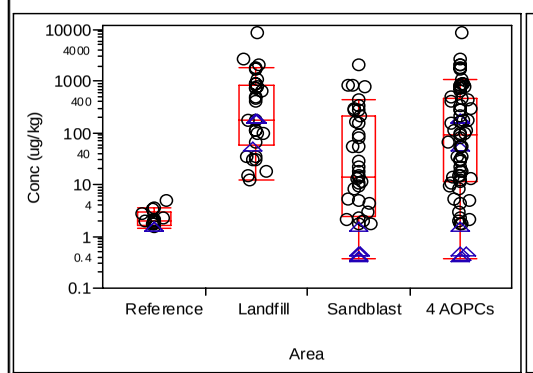


CENSORED AT MRL

ANTHRACENE



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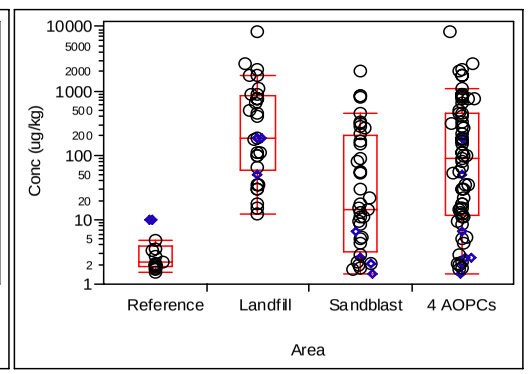
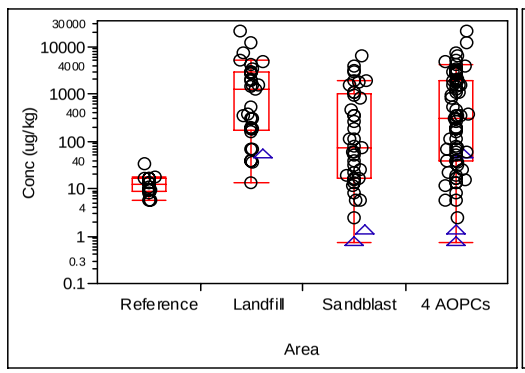


CENSORED AT MRL

PHENANTHRENE



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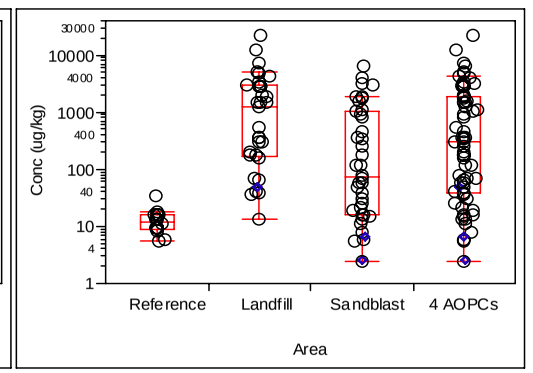

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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BRADFORD ISLAND

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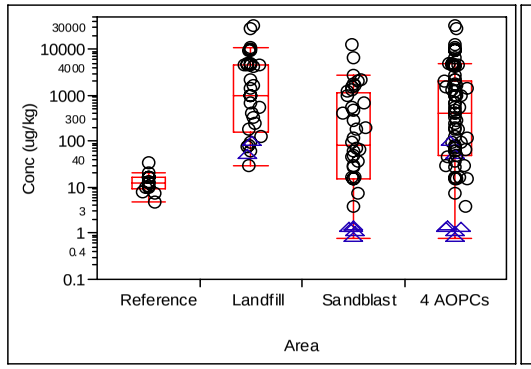
UPLAND OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN UPLAND SOIL (0 - 3ft)

DRAWING NUMBER:	
FIG L-1p	
CAD FILE NUMBER:	
FIG L-1p	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1p PAHs in Uplond Soil.dwg Nov 17, 2010 - 8:30am

BENZO(A)ANTHRACENE



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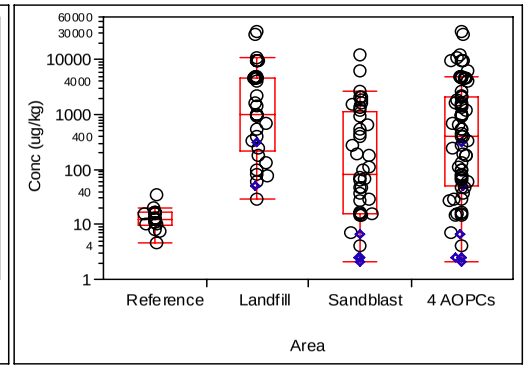
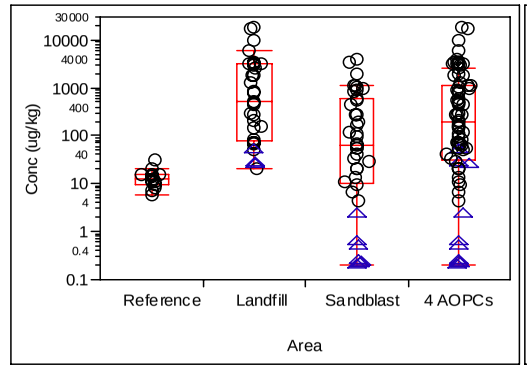


CENSORED AT MRL

BENZO(G,H,I)PERYLENE



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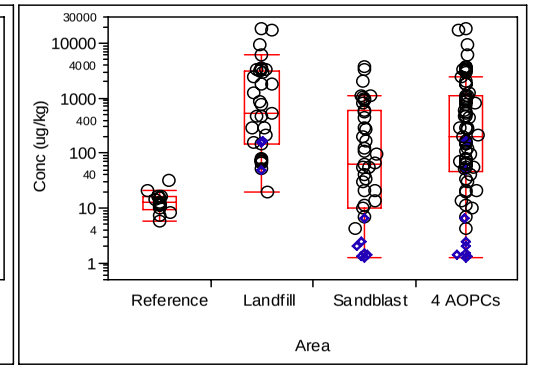
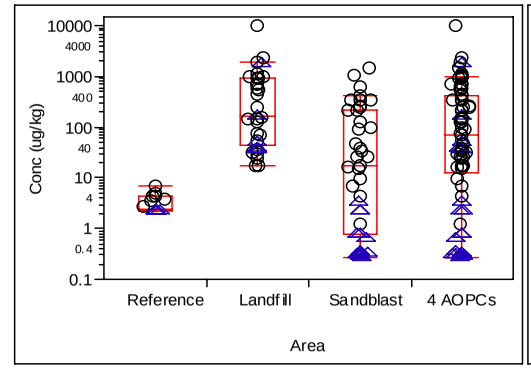


CENSORED AT MRL

DIBENZ(A,H)ANTHRACENE



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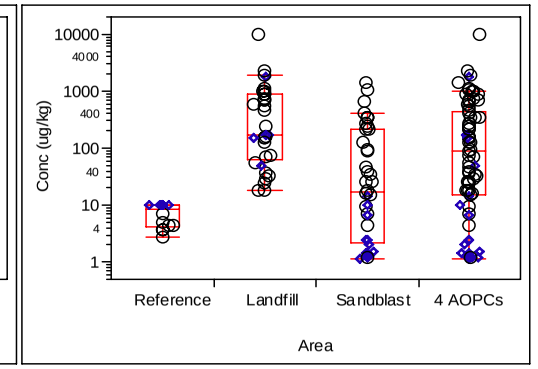
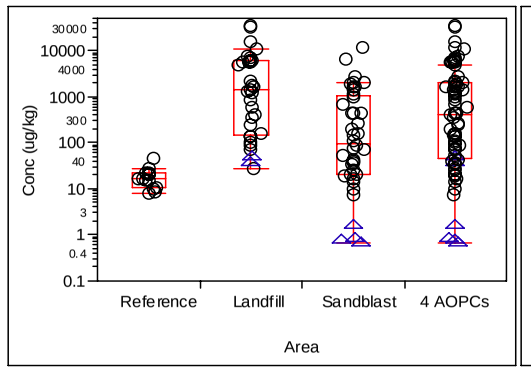


CENSORED AT MRL

BENZO(A)PYRENE



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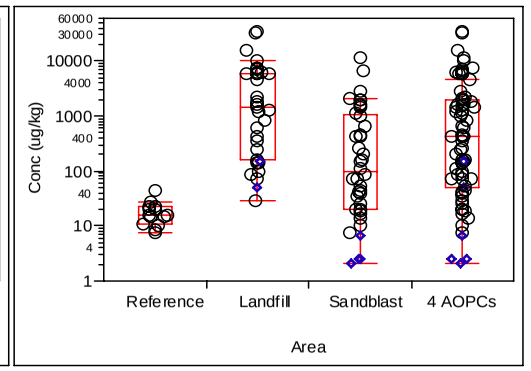
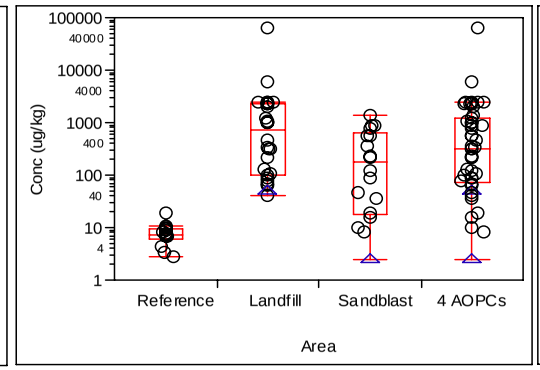


CENSORED AT MRL

BENZO(K)FLUORANTHENE



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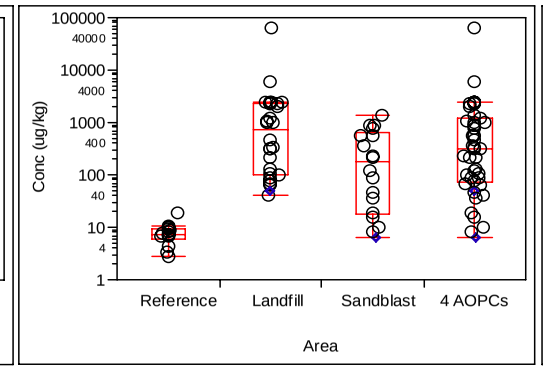
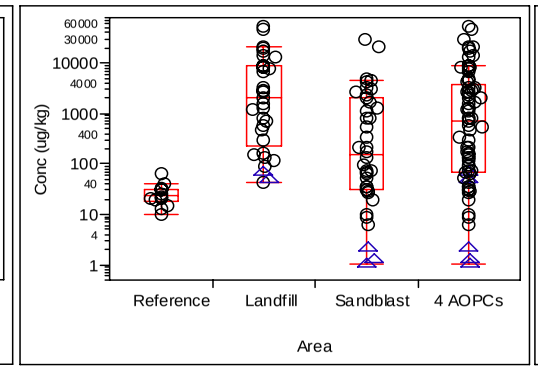


CENSORED AT MRL

FLUORANTHENE



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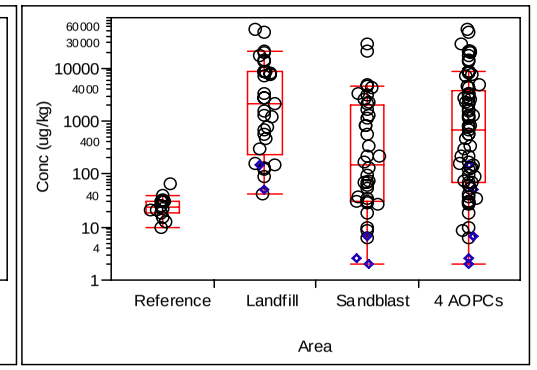
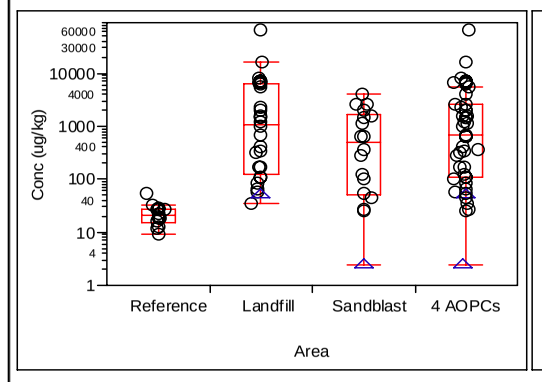


CENSORED AT MRL

BENZO(B)FLUORANTHENE



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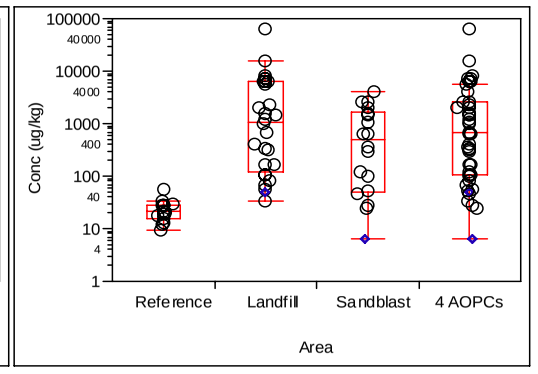
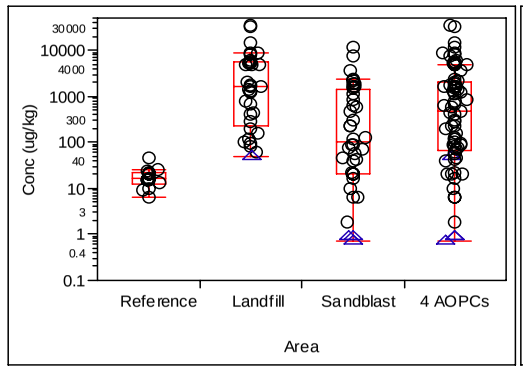


CENSORED AT MRL

CHRYSENE



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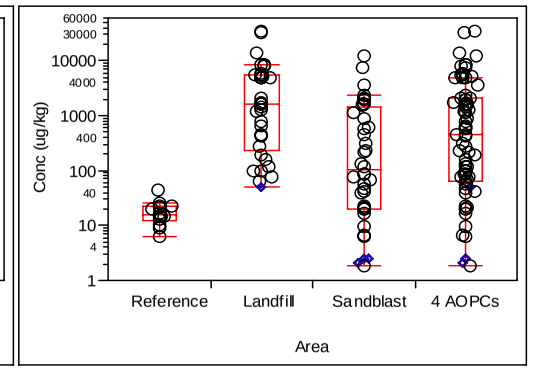
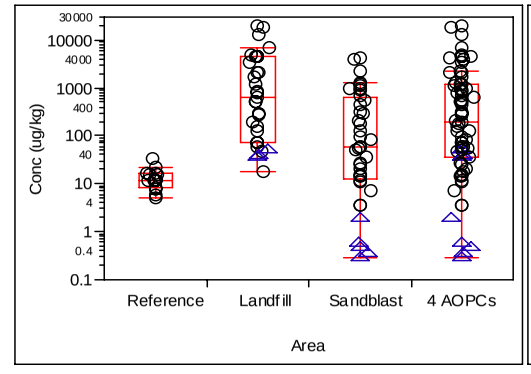


CENSORED AT MRL

INDENO(1,2,3-CD)PYRENE



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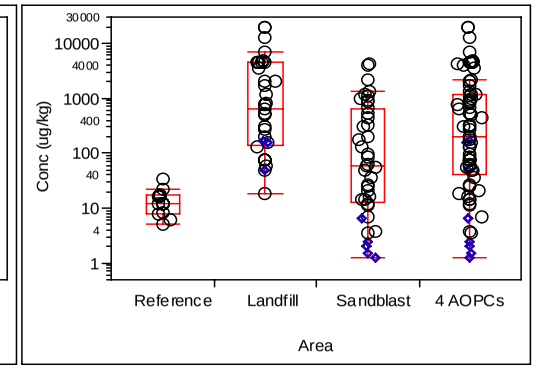

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No. 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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BRADFORD ISLAND

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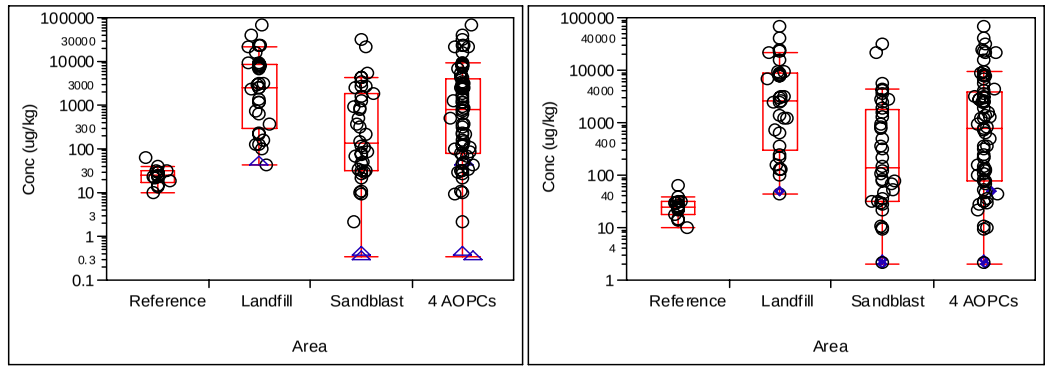
UPLAND OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN UPLAND SOIL (0 - 3ft)

DRAWING NUMBER:	
FIG L-1q	
CAD FILE NUMBER:	
FIG L-1q	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Bradford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1q PAHs in Upland Soil.dwg Nov 17, 2010 - 8:31am

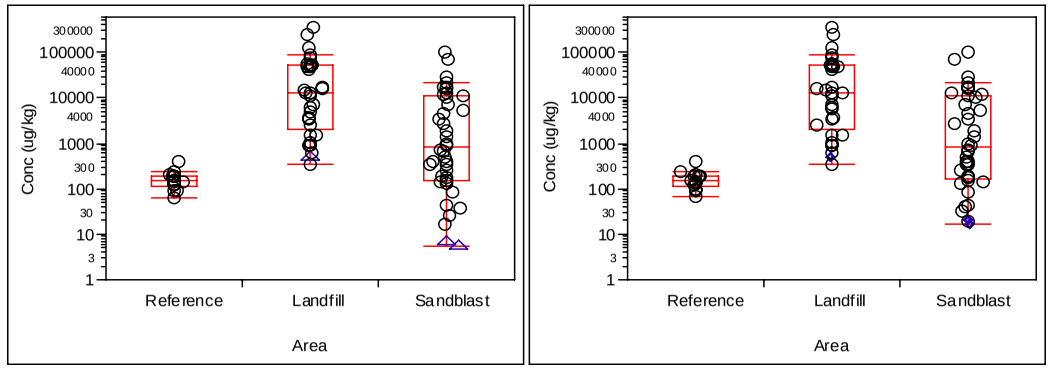
PYRENE



CENSORED AT MDL

CENSORED AT MRL

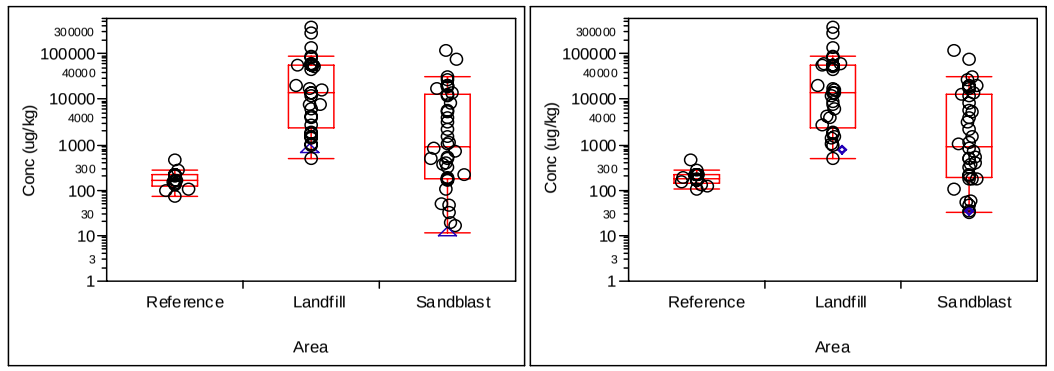
TOTAL HPAHs



CENSORED AT MDL

CENSORED AT MRL

tPAHs



CENSORED AT MDL

CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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BRADFORD ISLAND

CASCADE LOCKS, OREGON

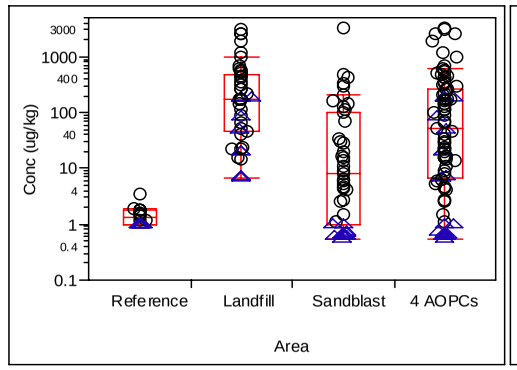
UPLAND OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN UPLAND SOIL (0 - 3ft)

DRAWING NUMBER: FIG L-1r
CAD FILE NUMBER: FIG L-1r
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1r PAHs in Upland Soil.dwg Nov 17, 2010 - 8:31am

ACENAPHTHENE



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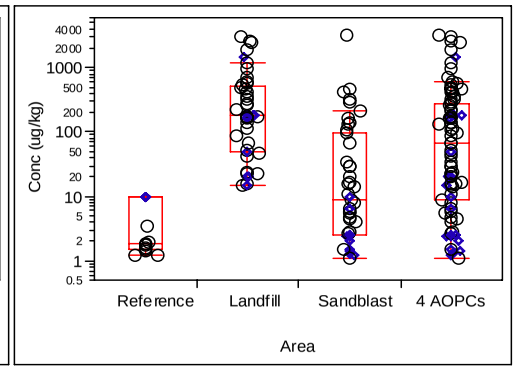
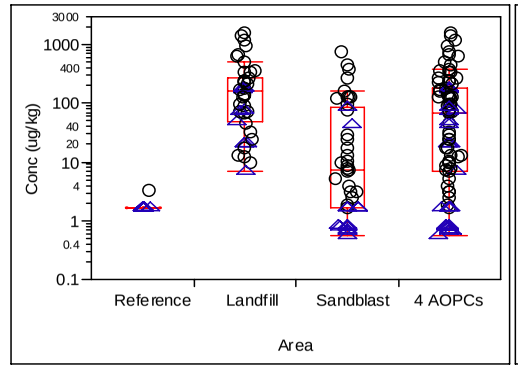
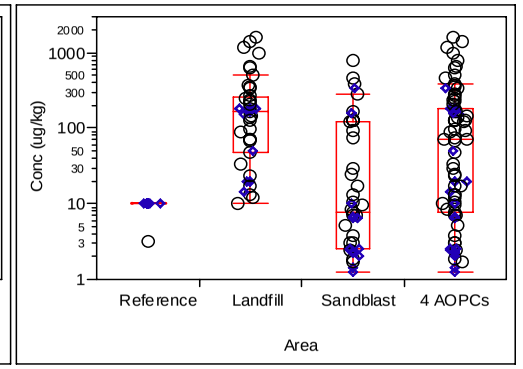


CENSORED AT MRL

FLUORENE

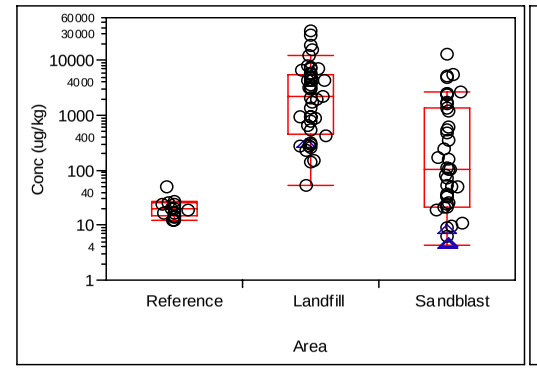


CENSORED AT MDL



CENSORED AT MRL

TOTAL LPAHs



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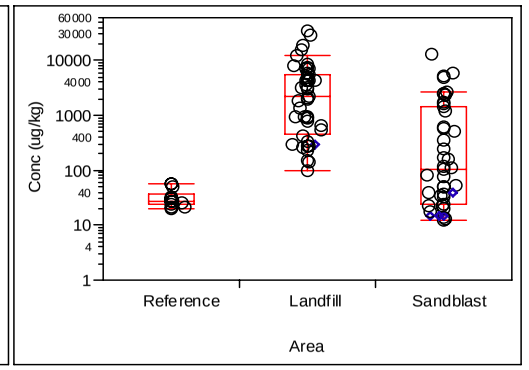
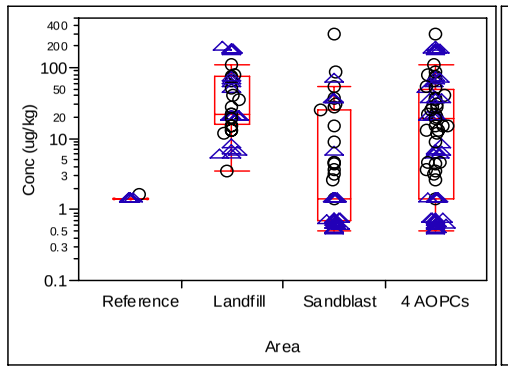


CENSORED AT MRL

ACENAPHTHYLENE



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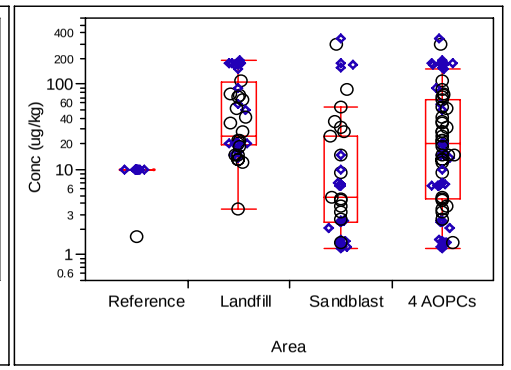
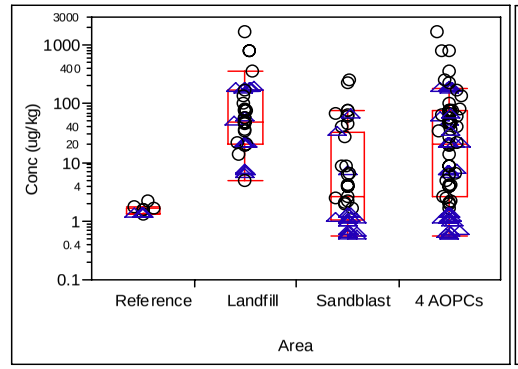


CENSORED AT MRL

NAPHTHALENE



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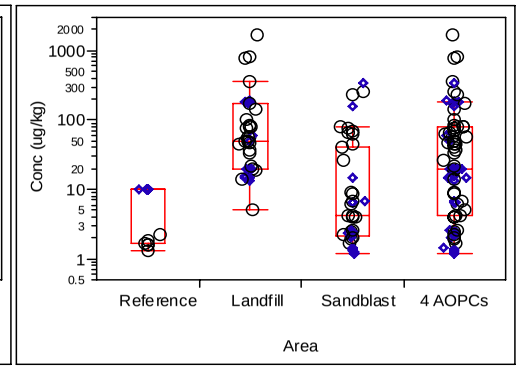
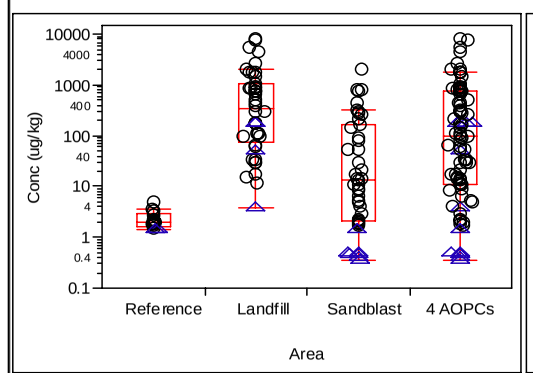


CENSORED AT MRL

ANTHRACENE



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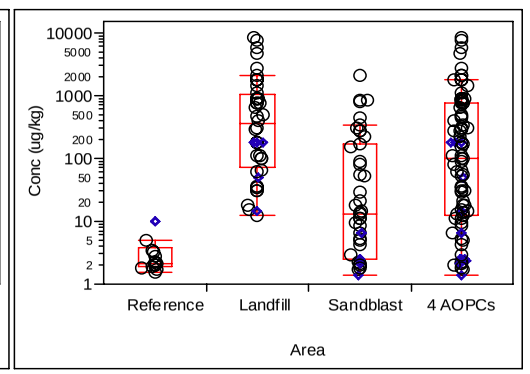
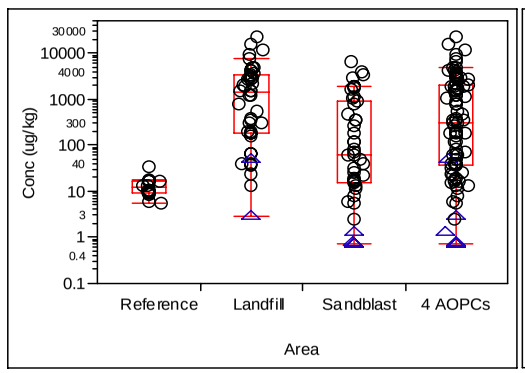
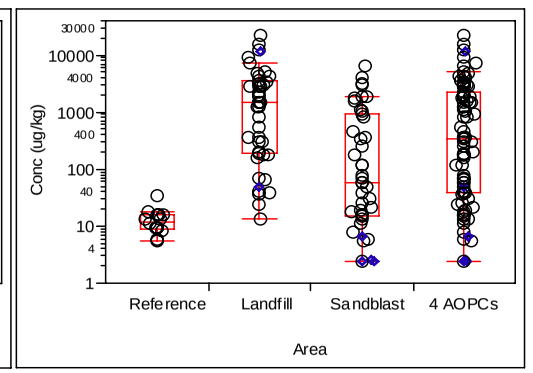


CENSORED AT MRL

PHENANTHRENE



CENSORED AT MDL



CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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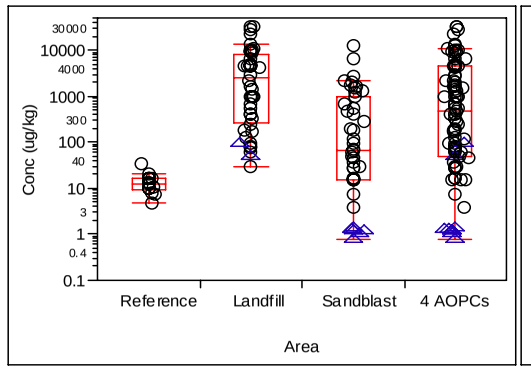
PAHs IN UPLAND SOIL (0 - 10ft)

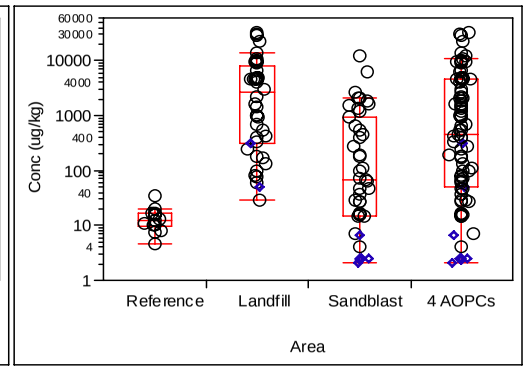
DRAWING NUMBER:	
FIG L-1s	
CAD FILE NUMBER:	
FIG L-1s	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1s PAHs in Upland Soil.dwg Nov 17, 2010 - 8:31am

BENZO(A)ANTHRACENE

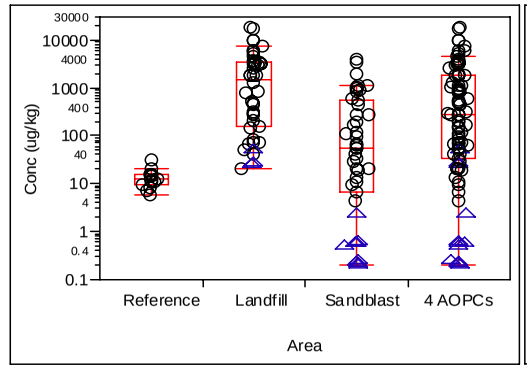


CENSORED AT MDL

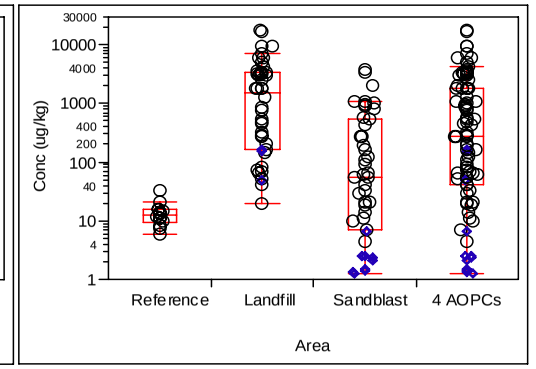


CENSORED AT MRL

BENZO(G,H,I)PERYLENE

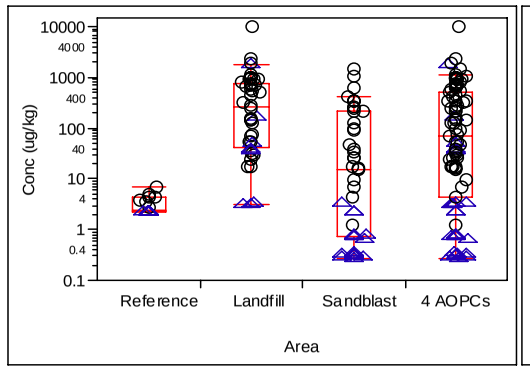


CENSORED AT MDL



CENSORED AT MRL

DIBENZ(A,H)ANTHRACENE



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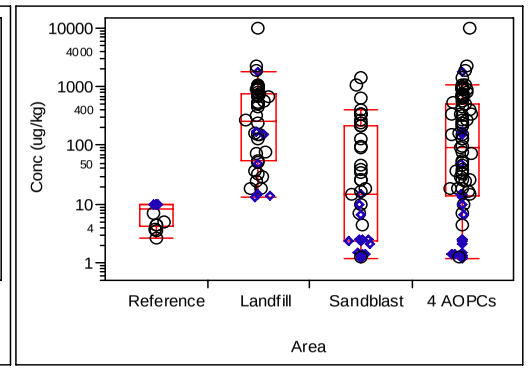

CENSORED AT MRL

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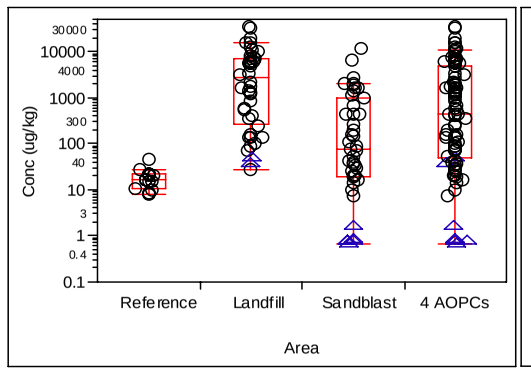
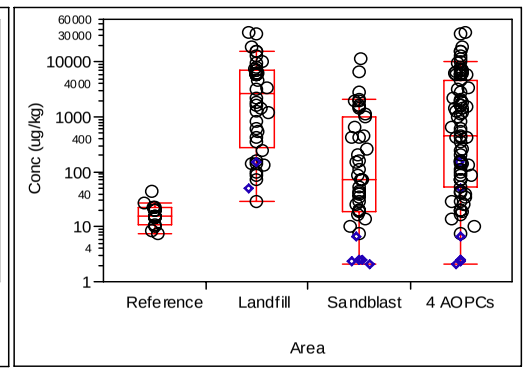
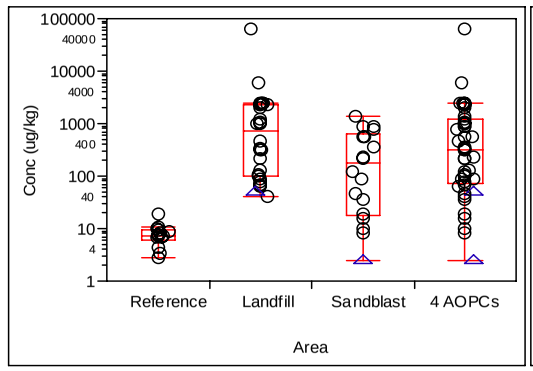


CENSORED AT MDL



CENSORED AT MRL

BENZO(K)FLUORANTHENE



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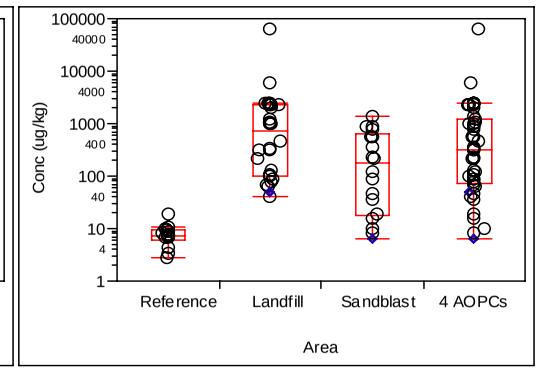
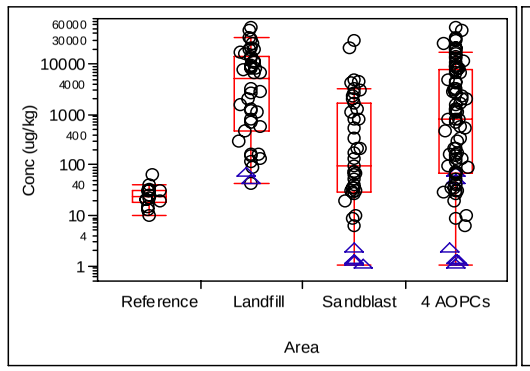


CENSORED AT MRL

FLUORANTHENE



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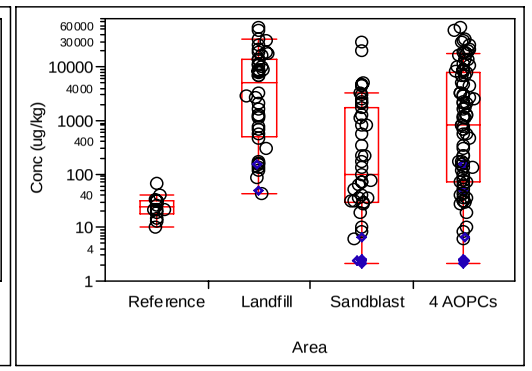
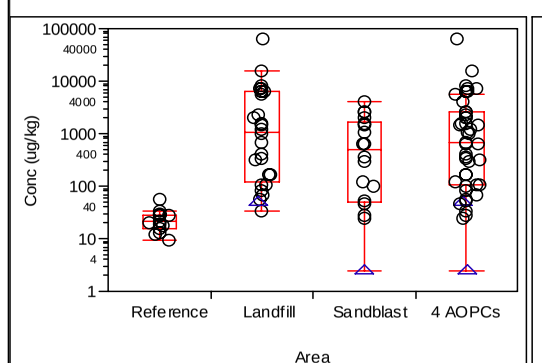


CENSORED AT MRL

BENZO(B)FLUORANTHENE



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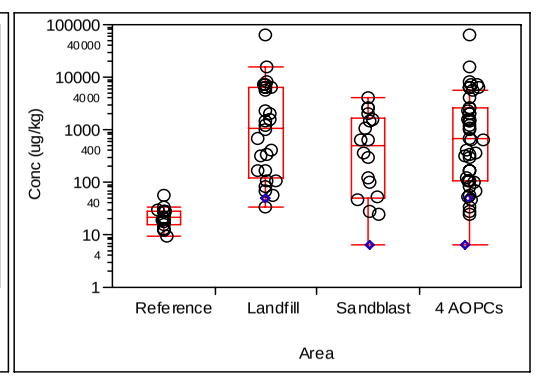
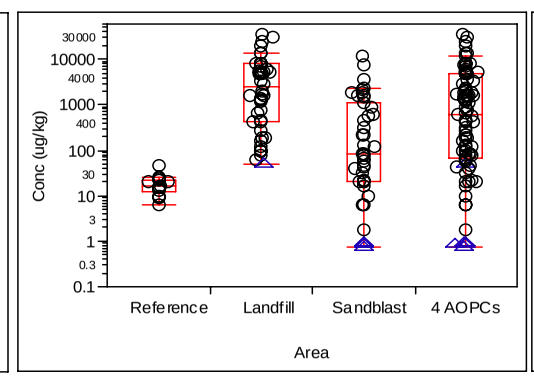


CENSORED AT MRL

CHRYSENE



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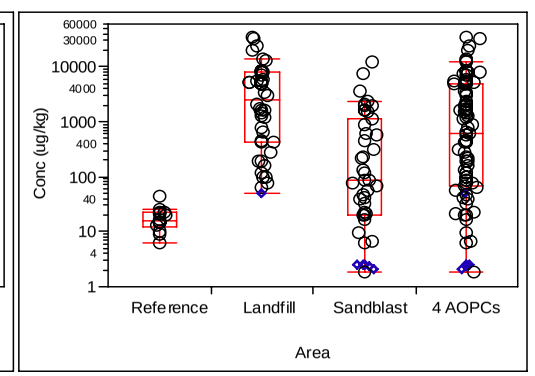
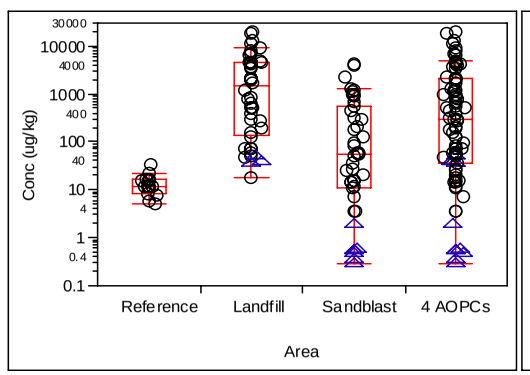
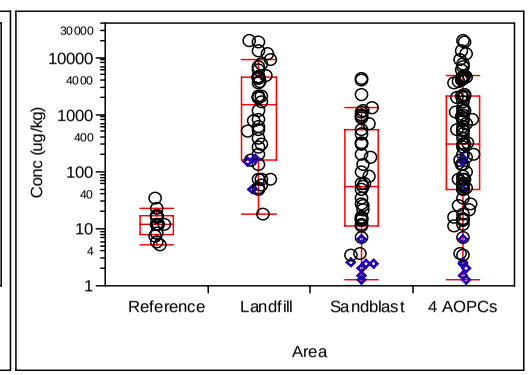


CENSORED AT MRL

INDENO(1,2,3-CD)PYRENE



CENSORED AT MDL



CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
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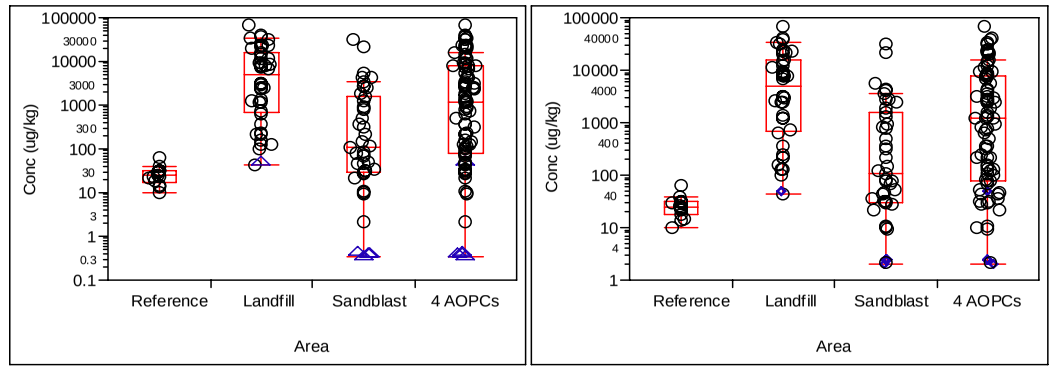
PAHs IN UPLAND SOIL (0 - 10ft)

DRAWING NUMBER:	
FIG L-1t	
CAD FILE NUMBER:	
FIG L-1t	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1t PAHs in Upland Soil.dwg Nov 17, 2010 - 8:32am

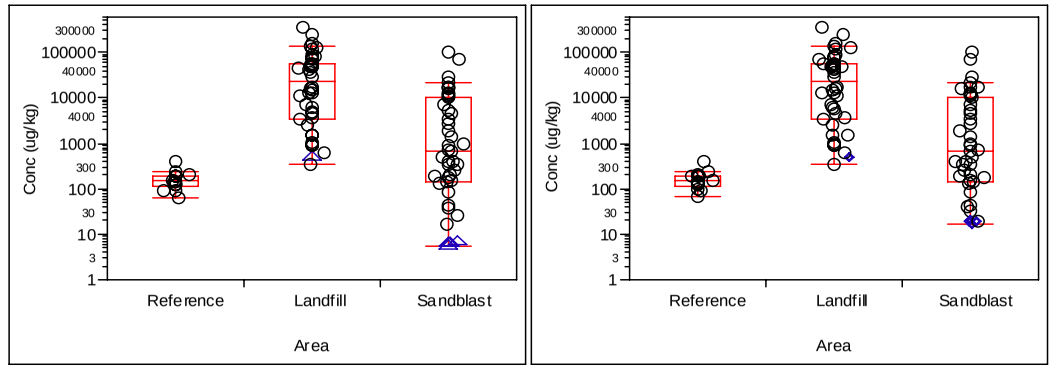
PYRENE



CENSORED AT MDL

CENSORED AT MRL

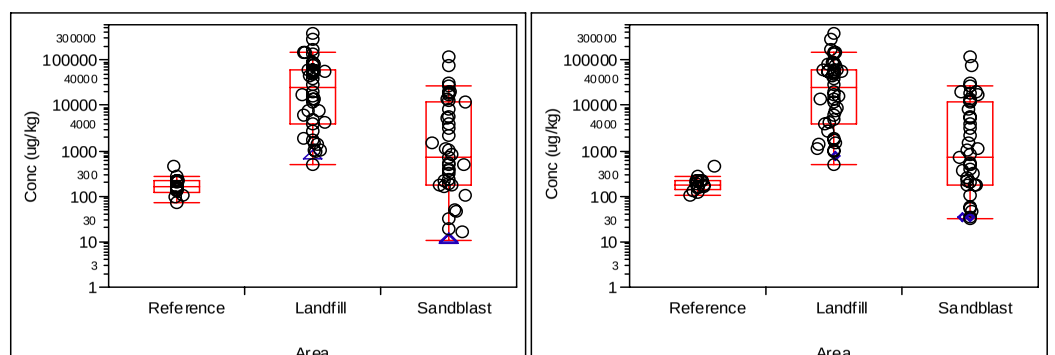
TOTAL HPAHs



CENSORED AT MDL

CENSORED AT MRL

tPAHs



CENSORED AT MDL

CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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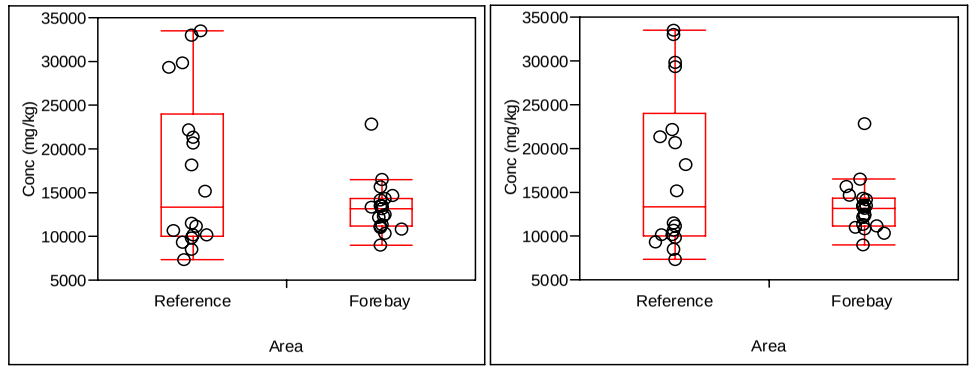
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN UPLAND SOIL (0 - 10ft)

DRAWING NUMBER: FIG L-1u
CAD FILE NUMBER: FIG L-1u
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-1u PAHs in Uplond Soil.dwg Nov 17, 2010 - 8:32am

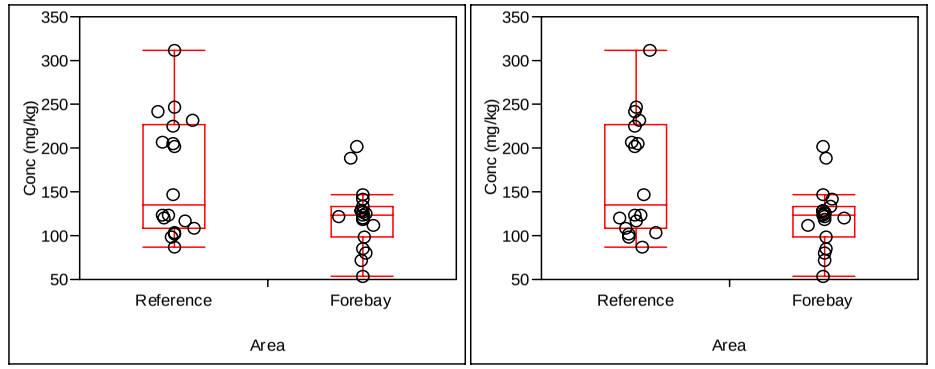
ALUMINUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

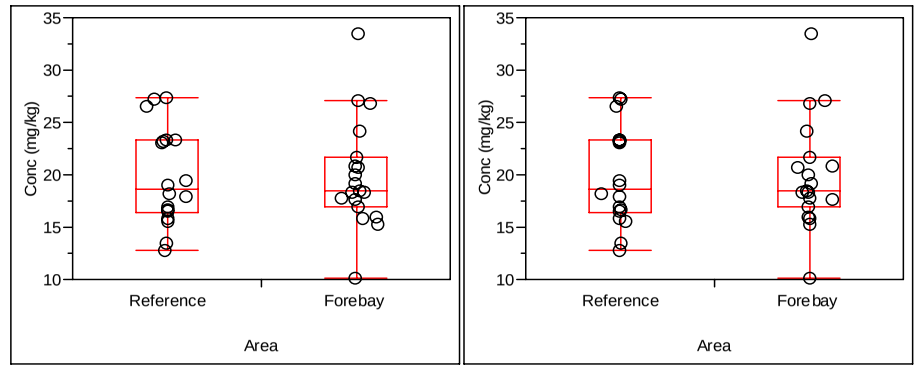
BARIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

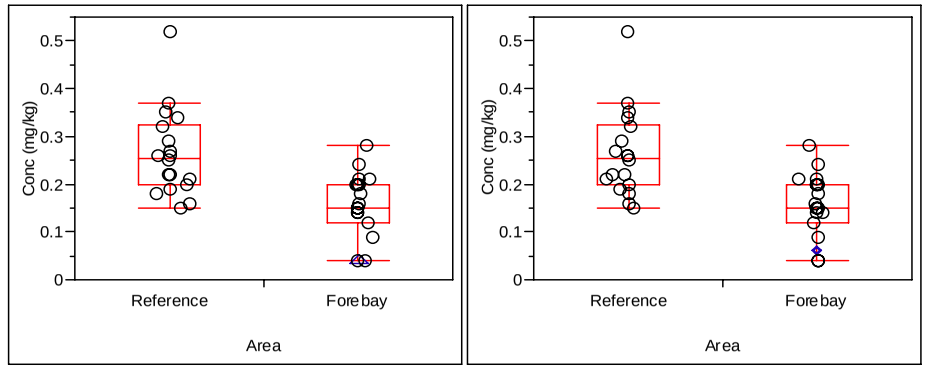
CHROMIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

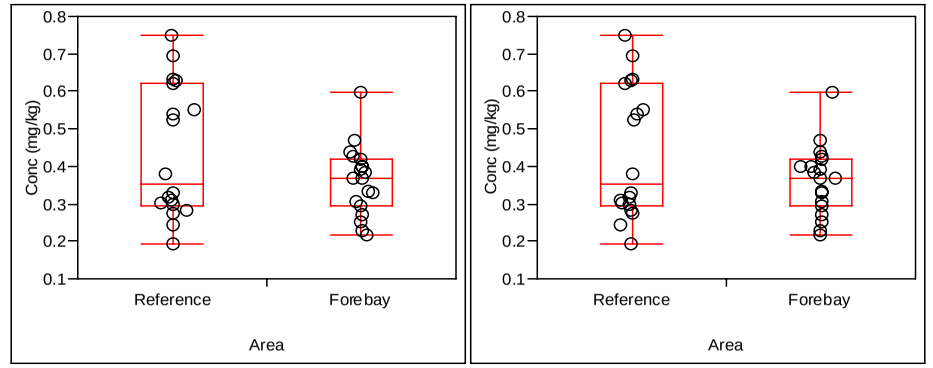
ANTIMONY



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

BERYLLIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

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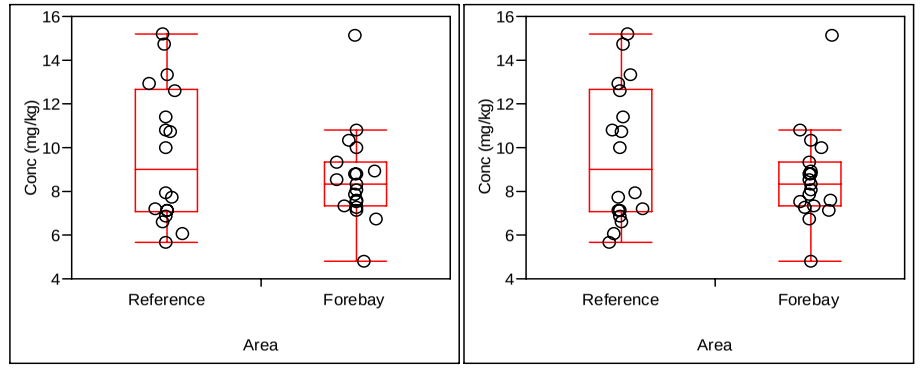
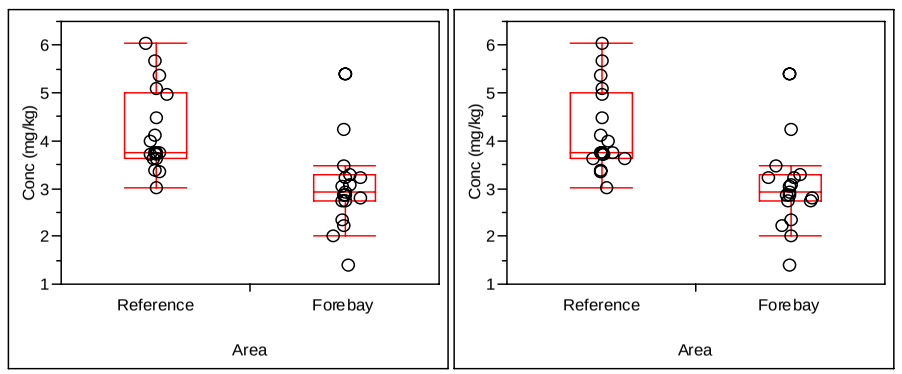


CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

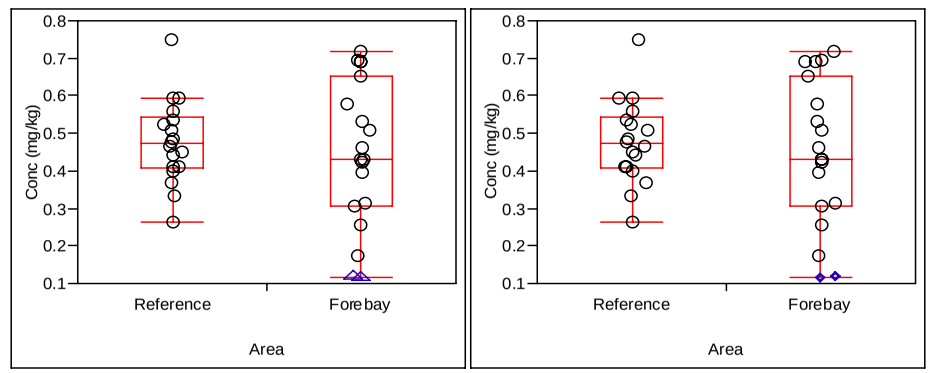
ARSENIC



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

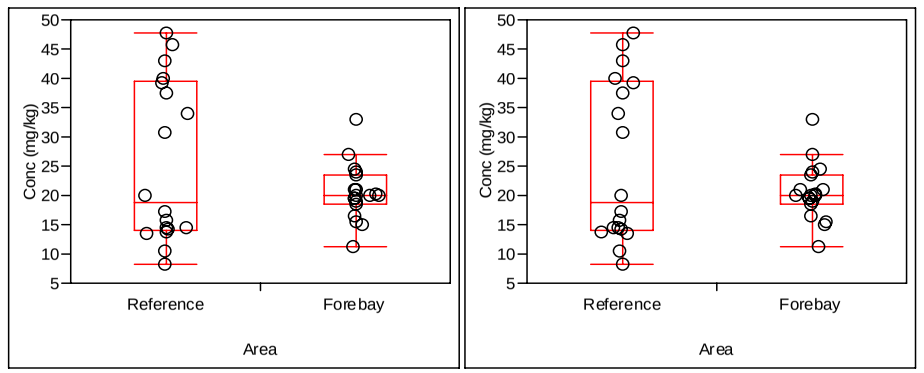
CADMIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

COPPER



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
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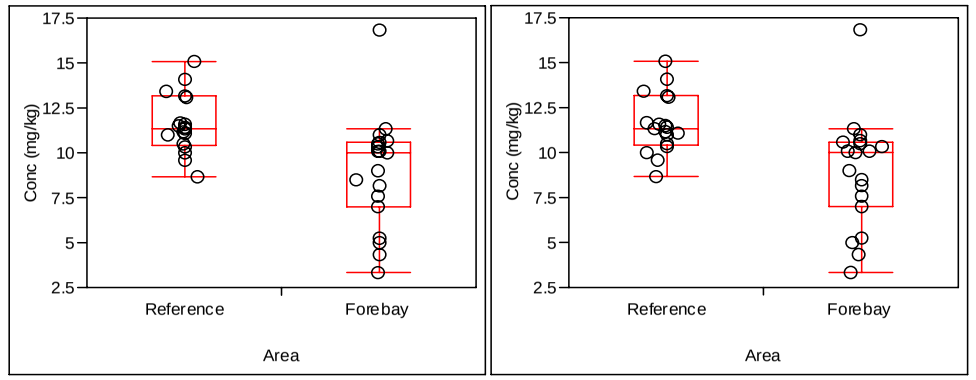
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN SEDIMENT

DRAWING NUMBER: FIG L-2a
CAD FILE NUMBER: FIG L-2a
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-2a Metals in Sediment.dwg Nov 17, 2010 - 8:33am

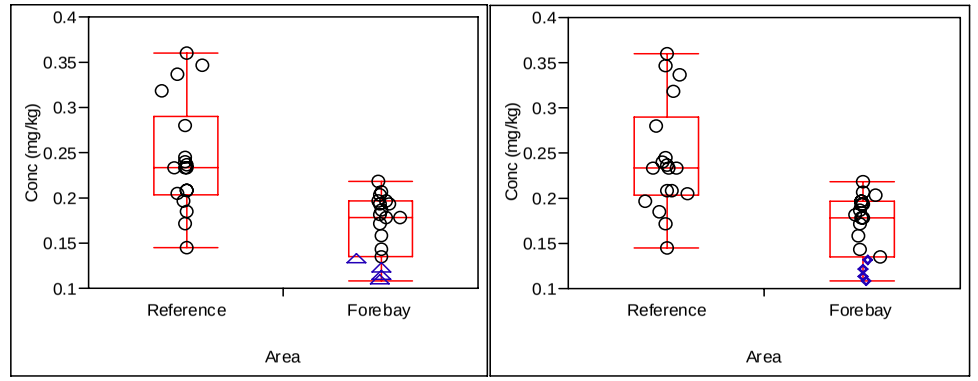
LEAD



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

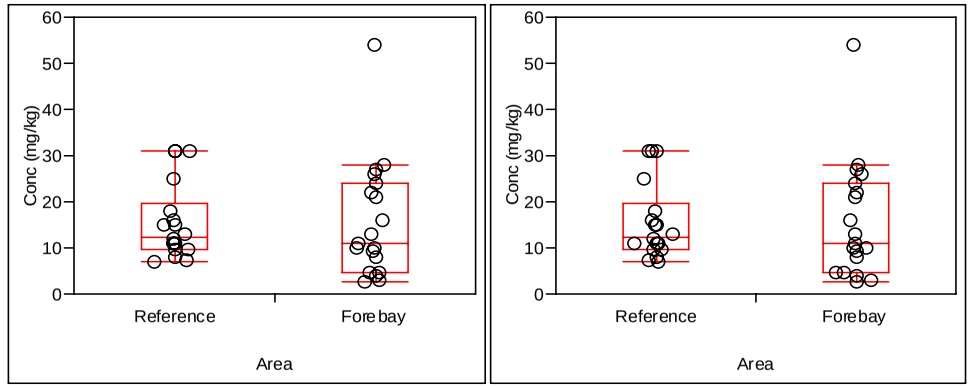
THALLIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

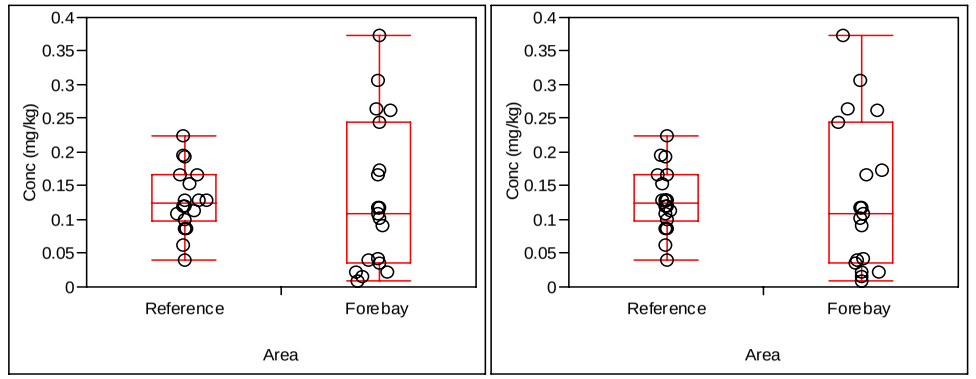
DIESEL RANGE ORGANICS



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

MERCURY



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

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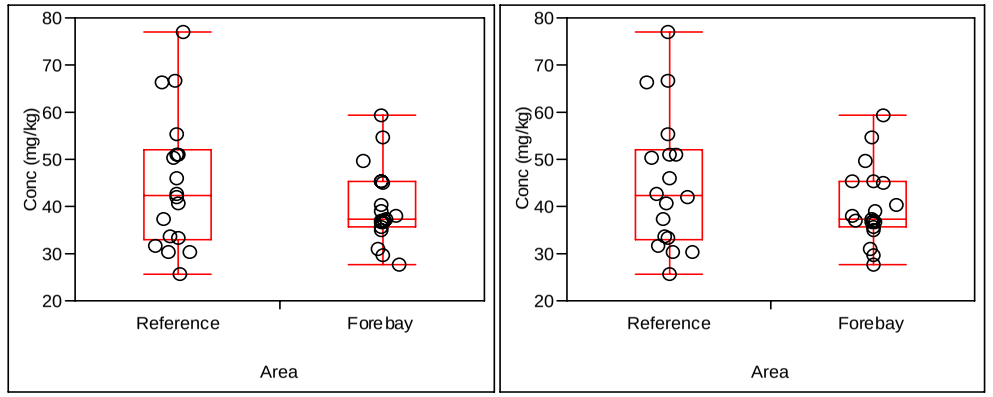
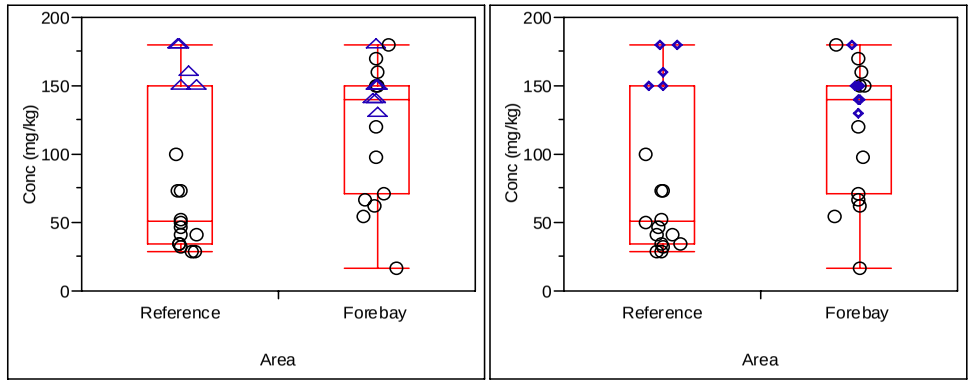


CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

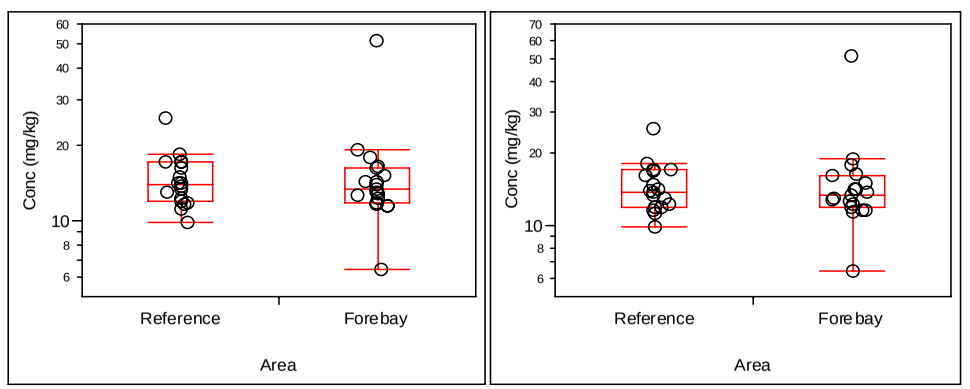
RESIDUAL RANGE ORGANICS



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

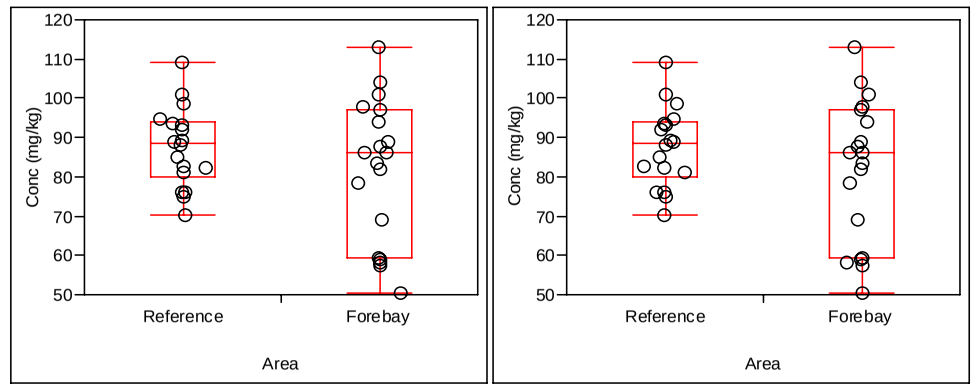
NICKEL



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

ZINC



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

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SCALE:	DRAWN BY: HP	APPROVED BY: LSM
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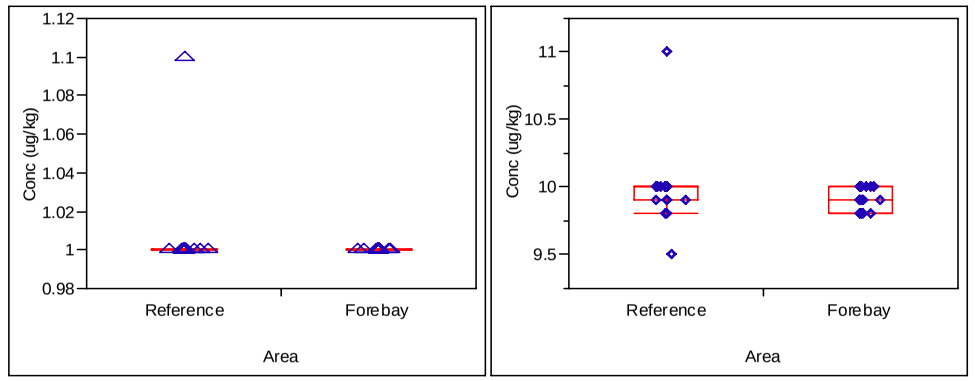
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN SEDIMENT

DRAWING NUMBER: FIG L-2b
CAD FILE NUMBER: FIG L-2b
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-2b Metals in Sediment.dwg Nov 17, 2010 - 8:33am

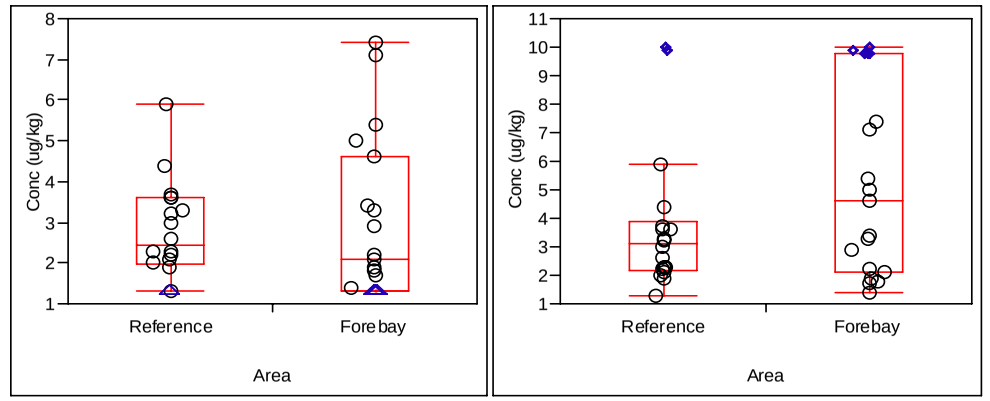
ACENAPHTHENE



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

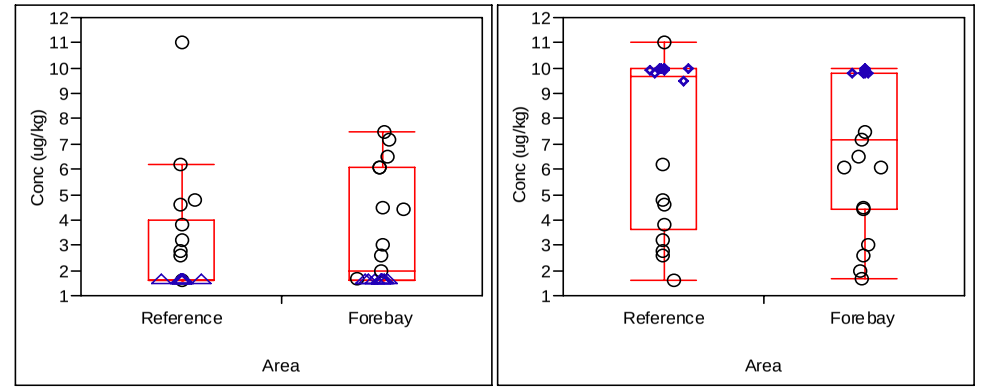
PHENANTHRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

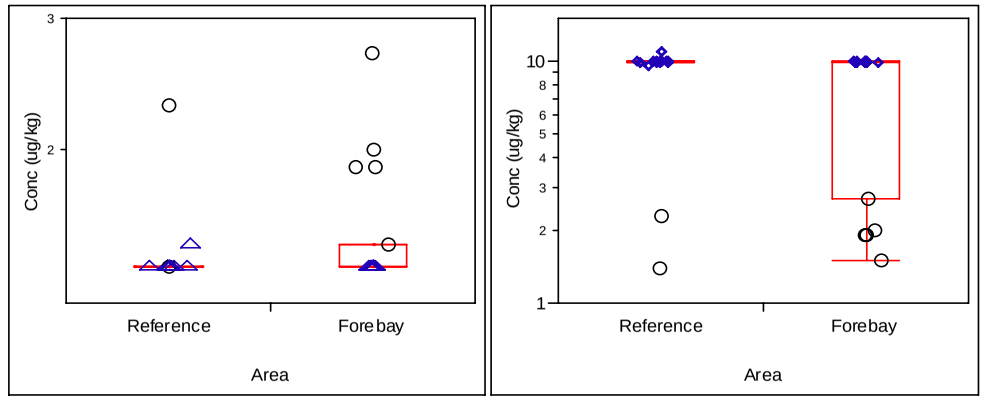
BENZO(A)PYRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

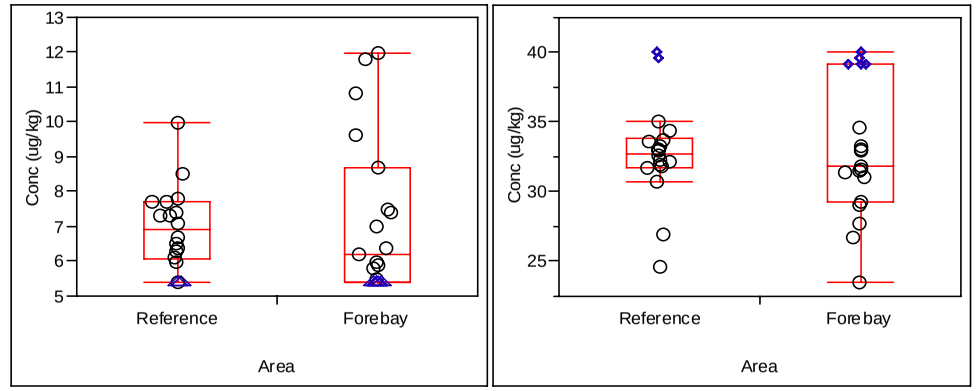
ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

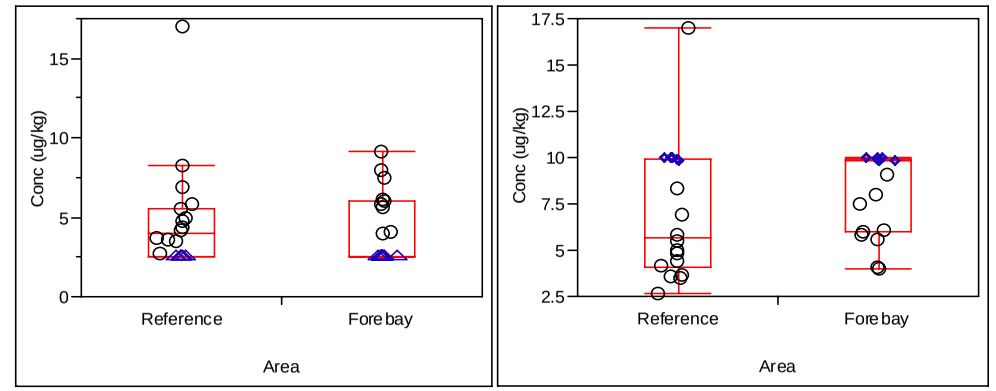
TOTAL LPAHs



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

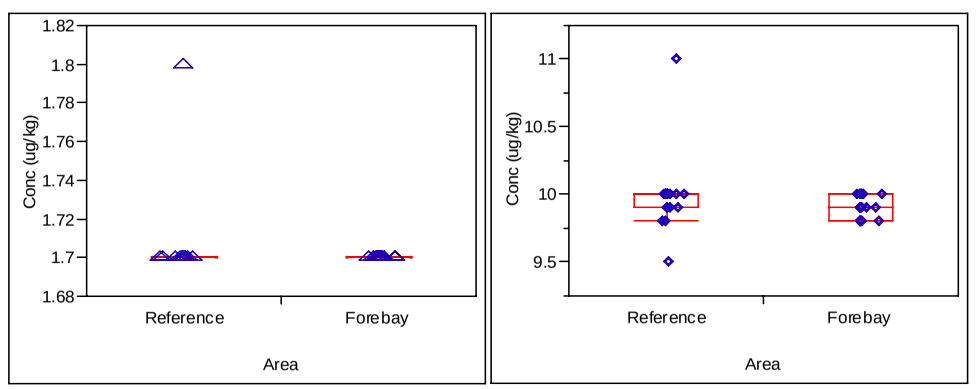
BENZO(B)FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

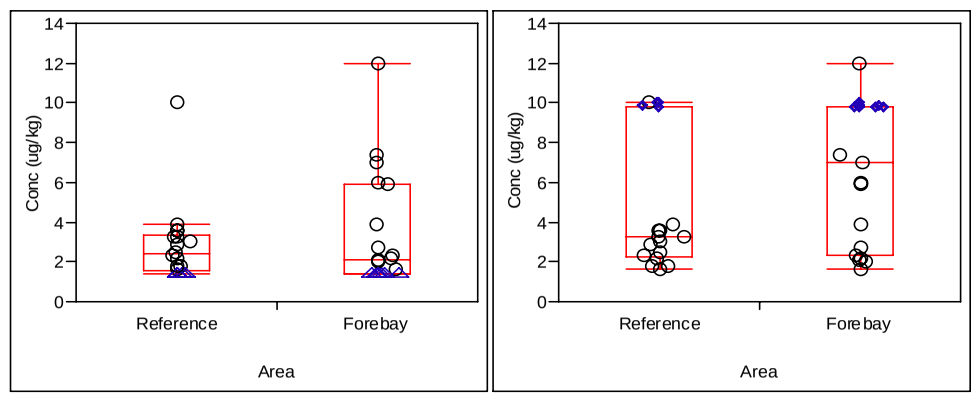
FLUORENE



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

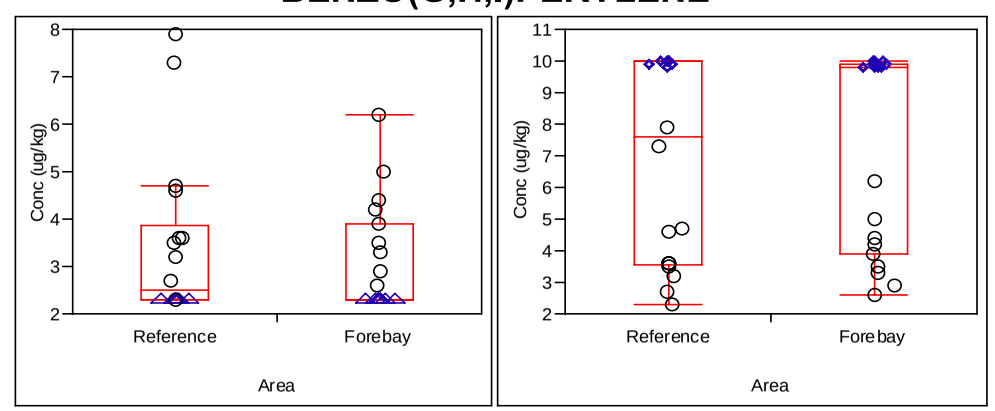
BENZO(A)ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

BENZO(G,H,I)PERYLENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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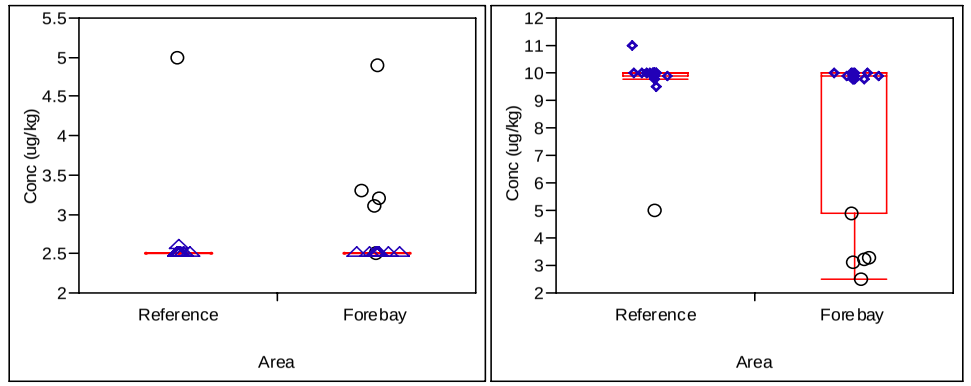
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN SEDIMENT

DRAWING NUMBER:	
FIG L-2c	
CAD FILE NUMBER:	
FIG L-2c	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-2c PAHs in Sediment.dwg Nov 17, 2010 - 8:34am

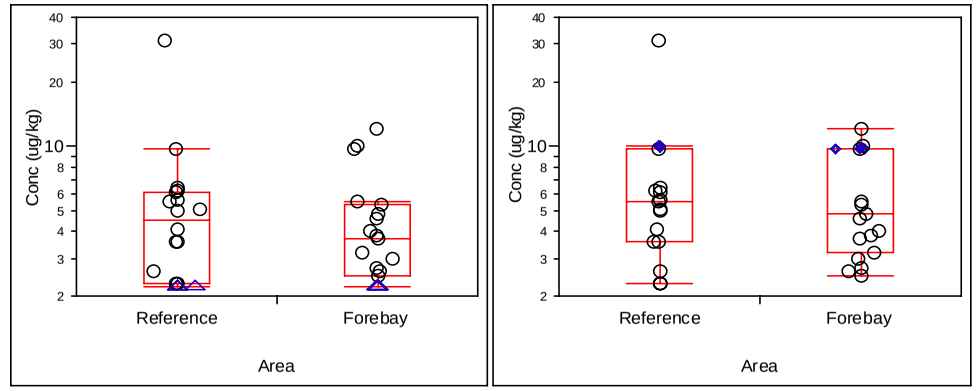
BENZO(K)FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

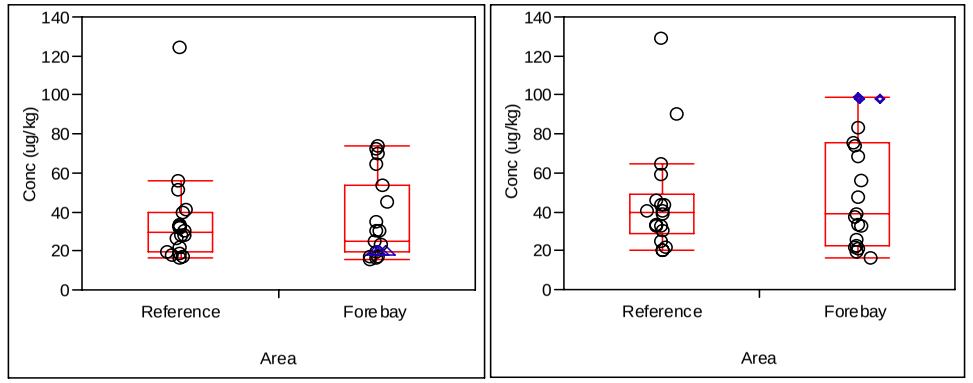
FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

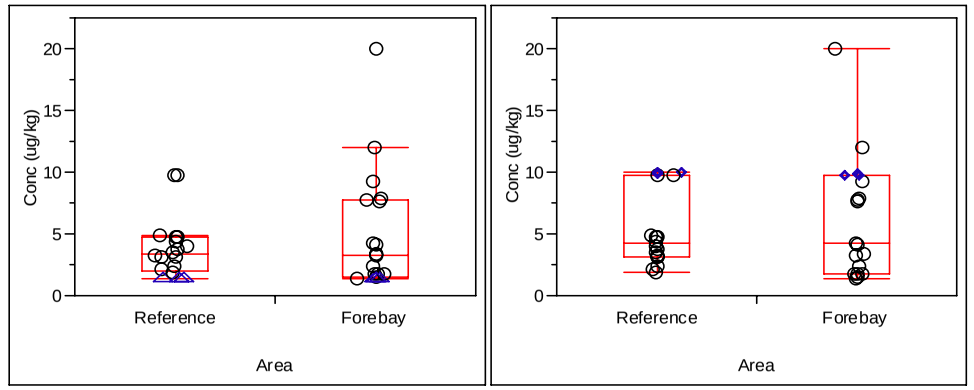
TOTAL HPAHs



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

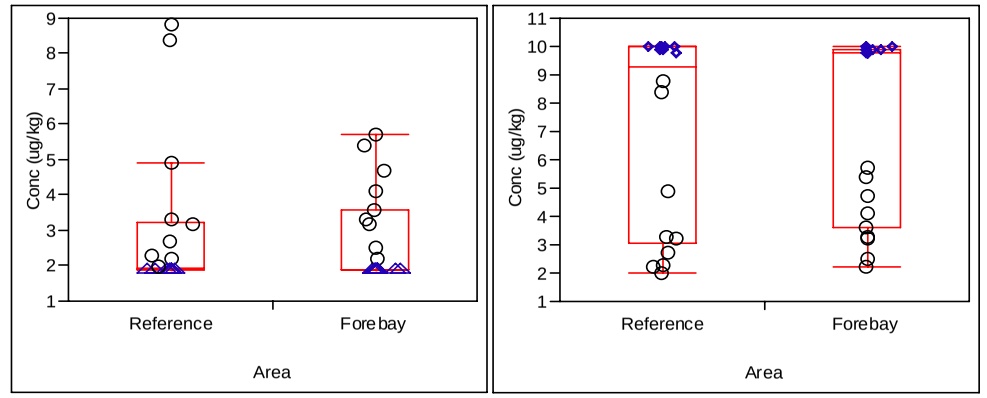
CHRYSENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

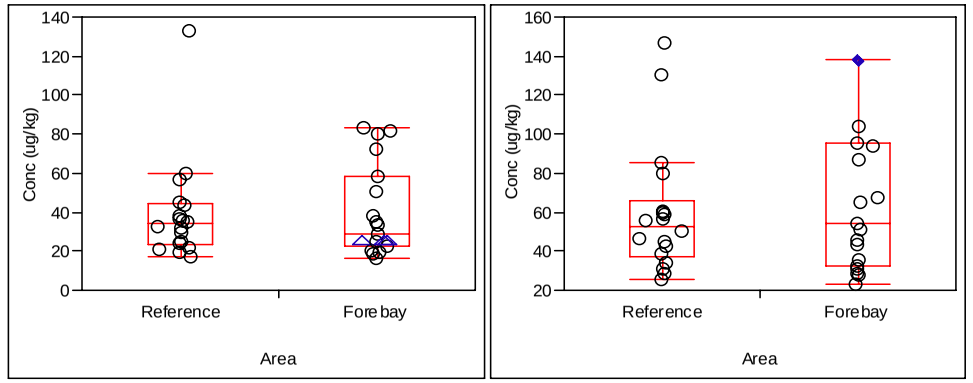
INDENO(1,2,3-CD)PYRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

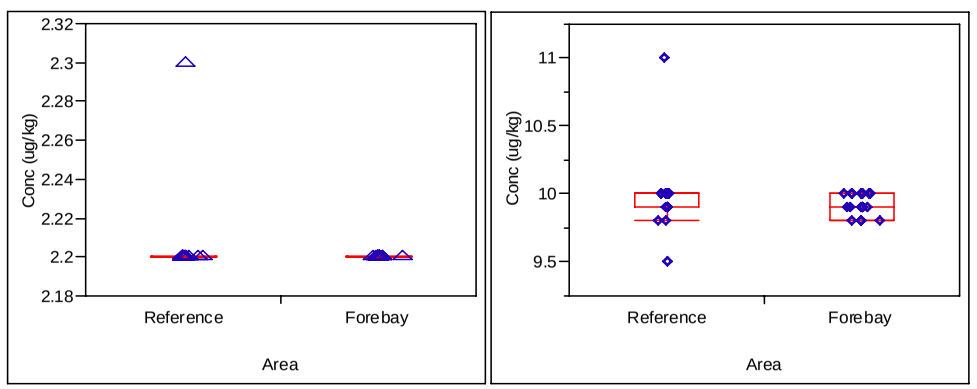
tPAHs



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

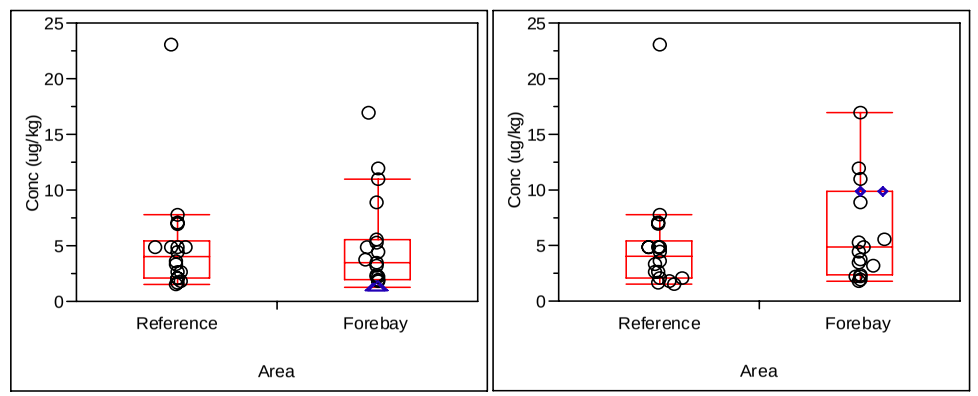
DIBENZ(A,H)ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

PYRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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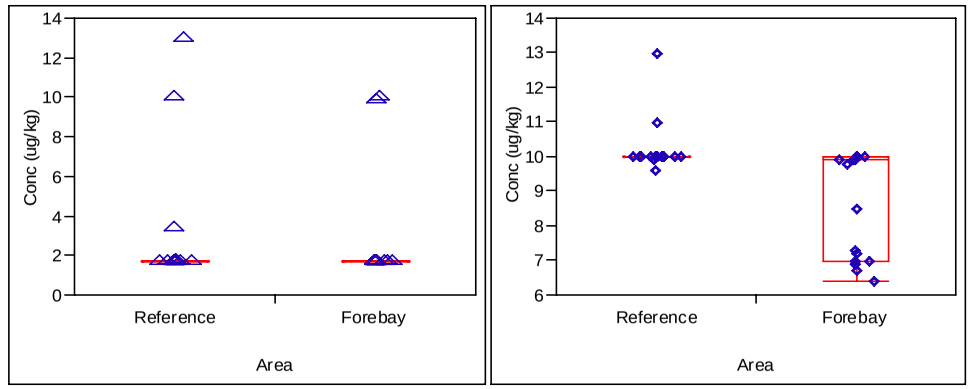
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN SEDIMENT

DRAWING NUMBER: FIG L-2d
CAD FILE NUMBER: FIG L-2d
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-2d PAHs in Sediment.dwg Nov 17, 2010 - 8:35am

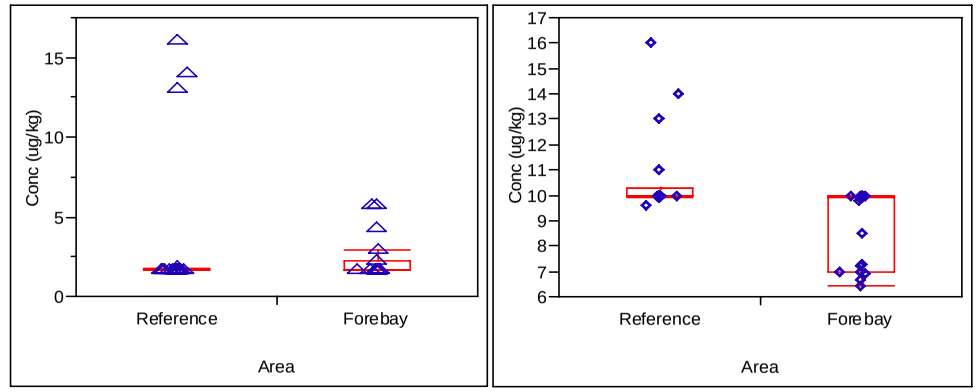
AROCLOR 1016



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

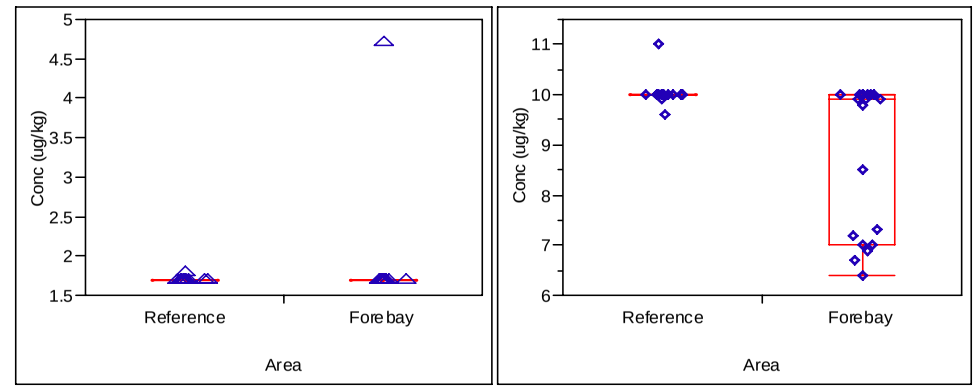
AROCLOR 1242



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

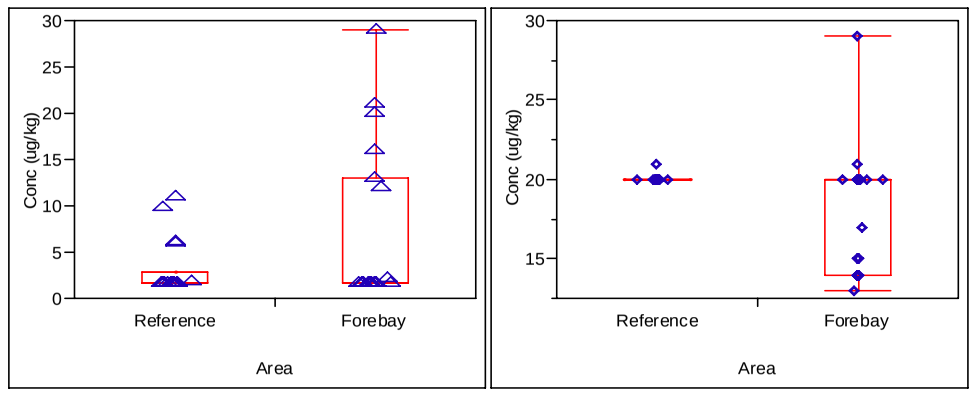
AROCLOR 1260



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

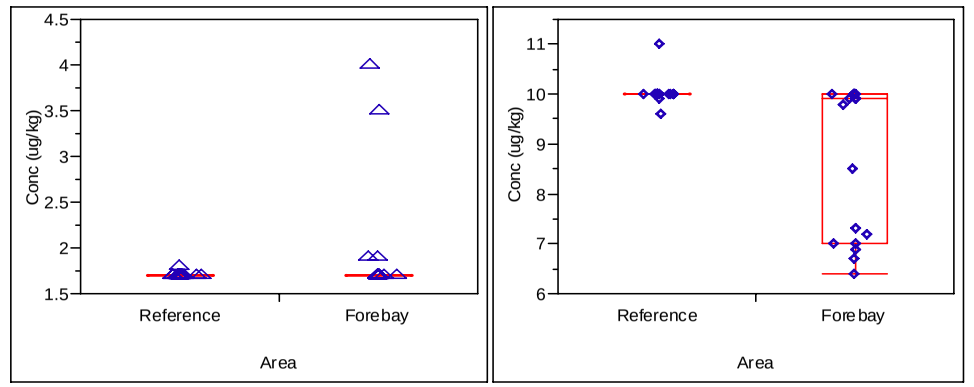
AROCLOR 1221



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

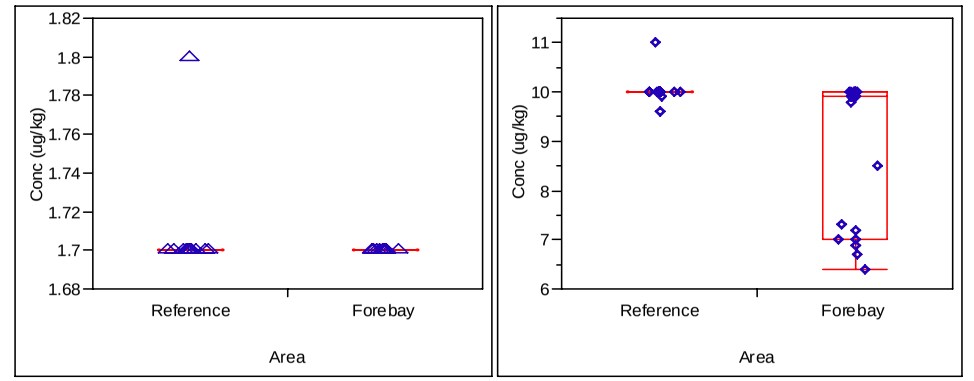
AROCLOR 1248



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

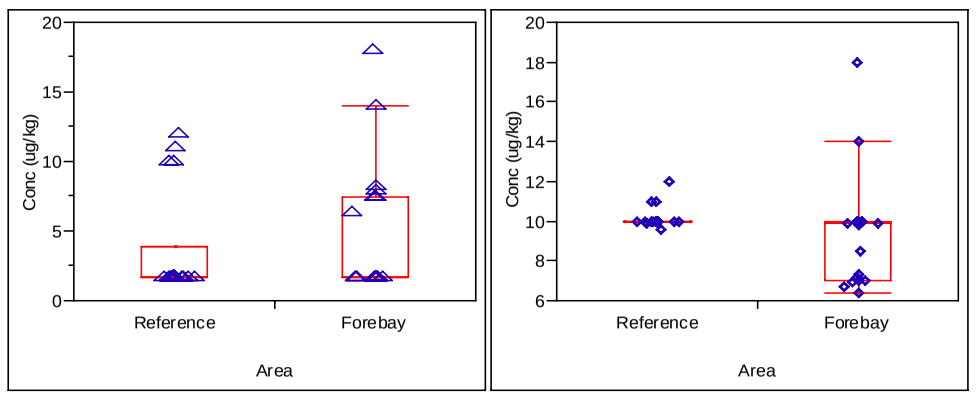
AROCLOR 1262



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

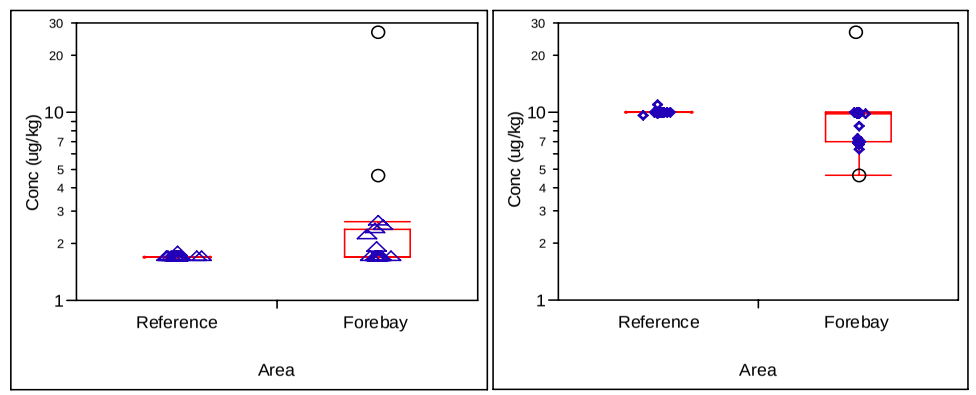
AROCLOR 1232



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

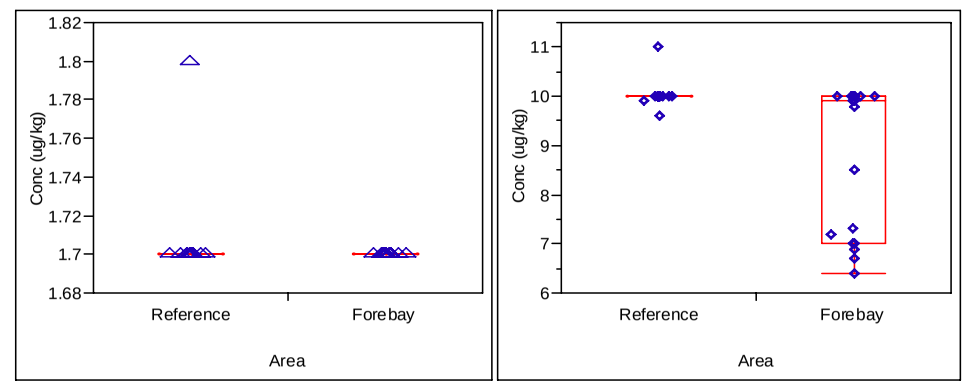
AROCLOR 1254



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

AROCLOR 1268



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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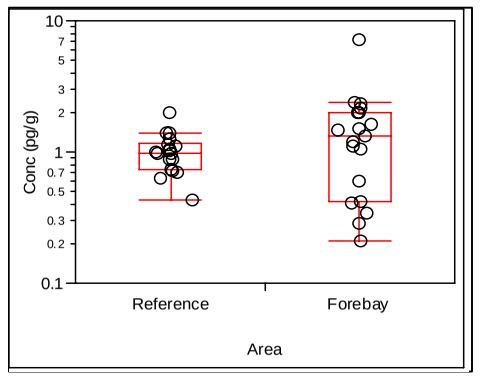
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PCB AROCLORS IN SEDIMENT

DRAWING NUMBER: FIG L-2e
CAD FILE NUMBER: FIG L-2e
SHEET: OF
REV.

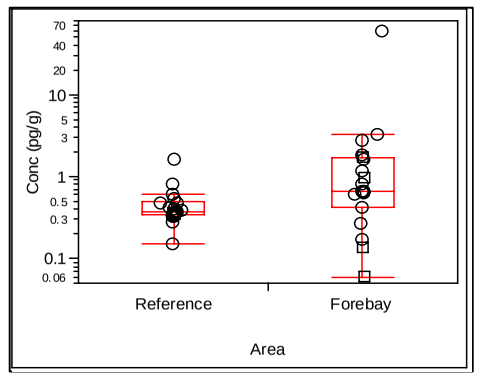
O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-2e PCB Aroclors in Sediment.dwg Nov 17, 2010 - 8:35am

PCB 77



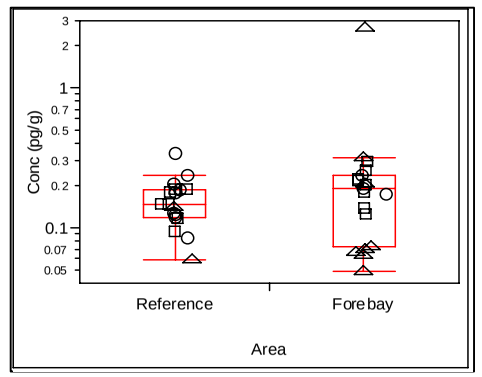
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 114



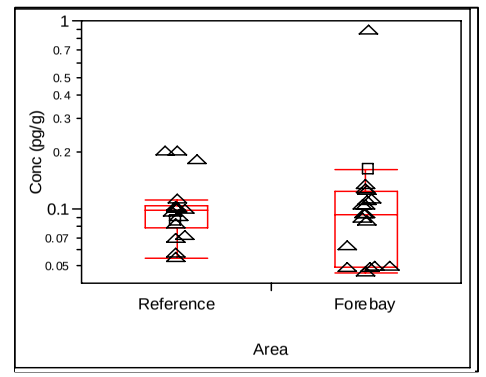
FOREBAY IS STATISTICALLY HIGHER

PCB 126



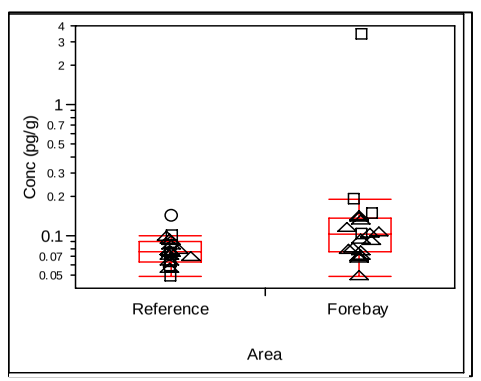
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 169



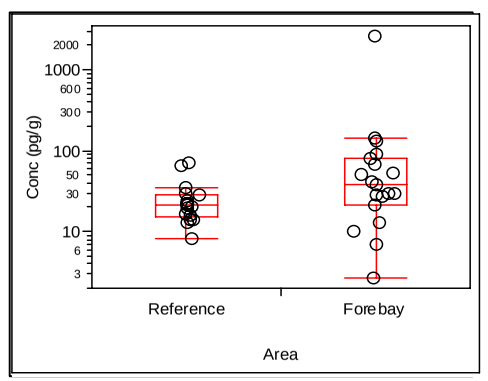
ALL SAMPLES ARE NON DETECTS

PCB 81



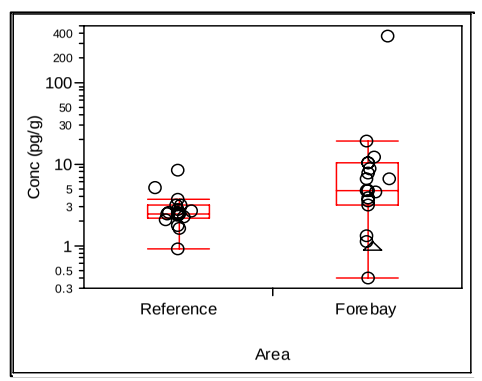
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 118



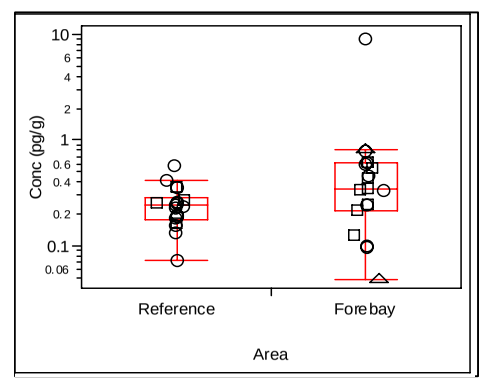
FOREBAY IS STATISTICALLY HIGHER

PCB 156+157



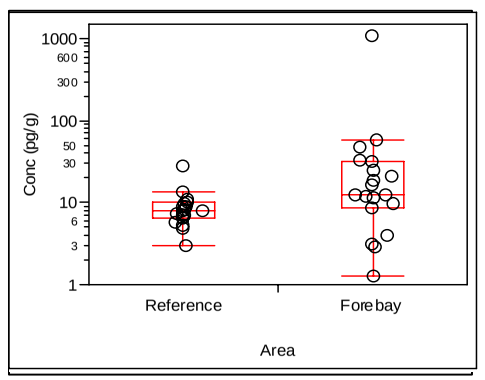
FOREBAY IS STATISTICALLY HIGHER

PCB 189



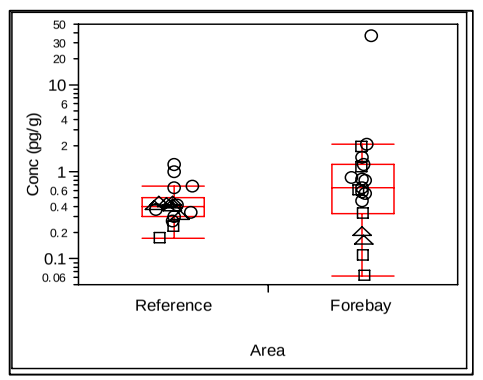
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 105



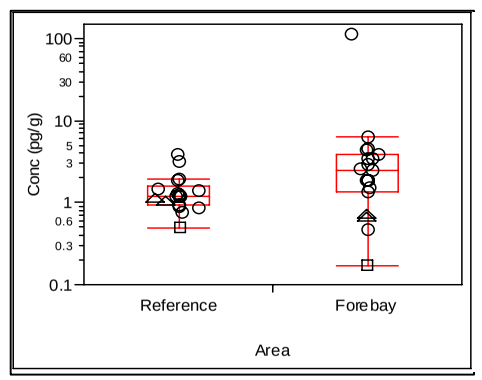
FOREBAY IS STATISTICALLY HIGHER

PCB 123



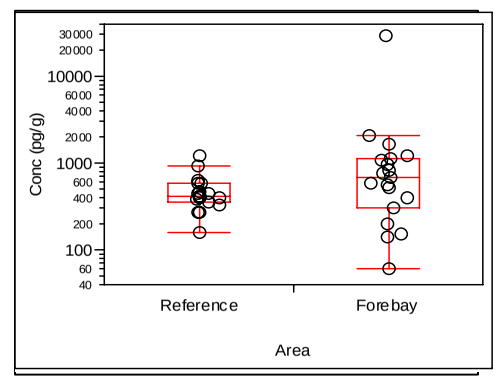
FOREBAY IS STATISTICALLY HIGHER

PCB 167



FOREBAY IS STATISTICALLY HIGHER

SUM 209 CONGENERS (KM-BASED)



FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Reported Detection Limit (RDL)
- □ EMPC Result, Censored at Reported Value

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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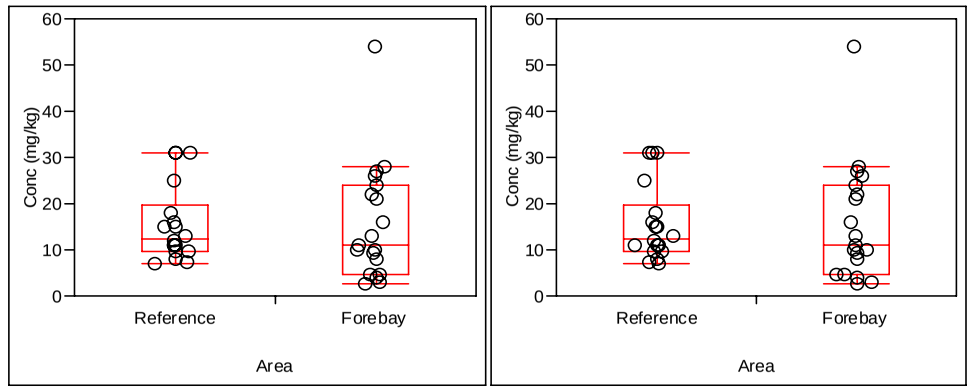
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PCB CONGENERS IN SEDIMENT

DRAWING NUMBER:	
FIG L-2f	
CAD FILE NUMBER:	
FIG L-2f	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-2f PCB Congeners in Sediment.dwg Nov 12, 2010 - 3:38pm

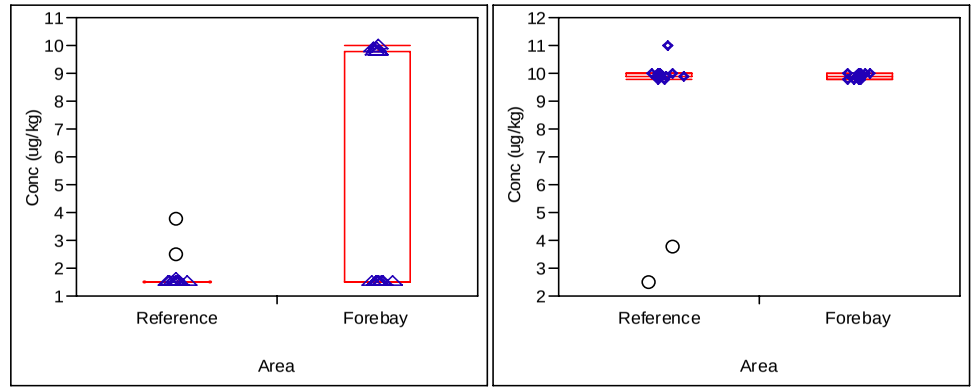
DIESEL RANGE ORGANICS



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

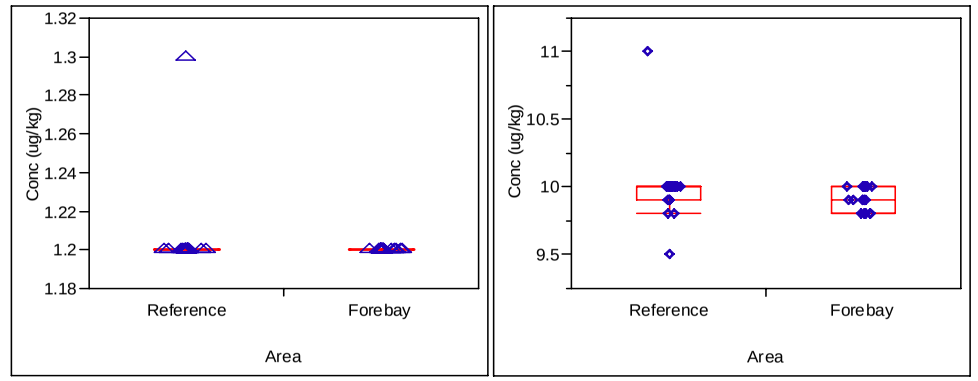
BUTYL BENZYL PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

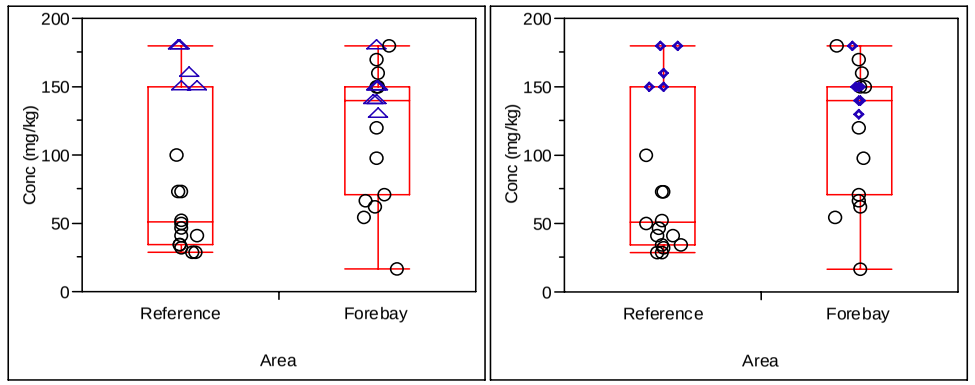
DI-N-OCTYL PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

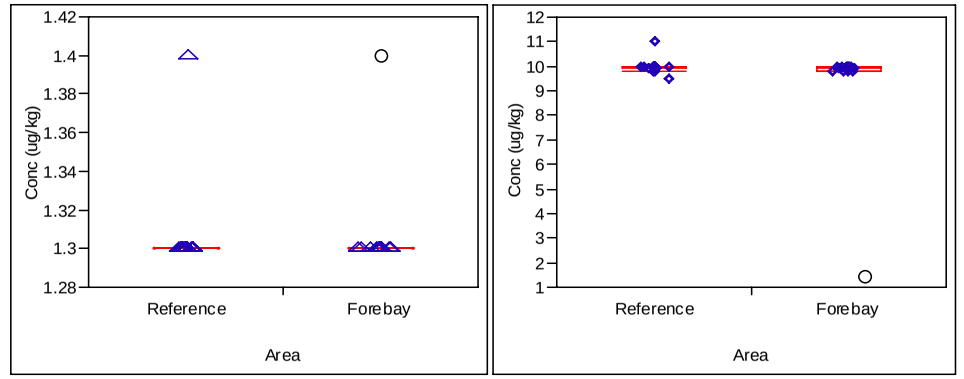
RESIDUAL RANGE ORGANICS



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

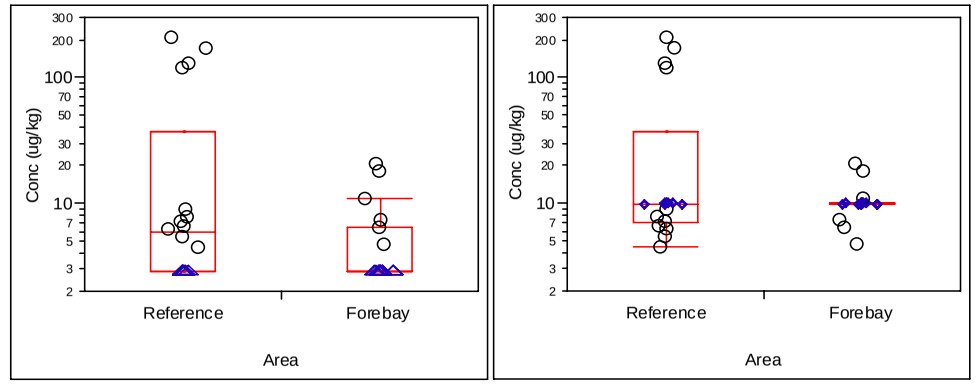
CARBAZOLE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

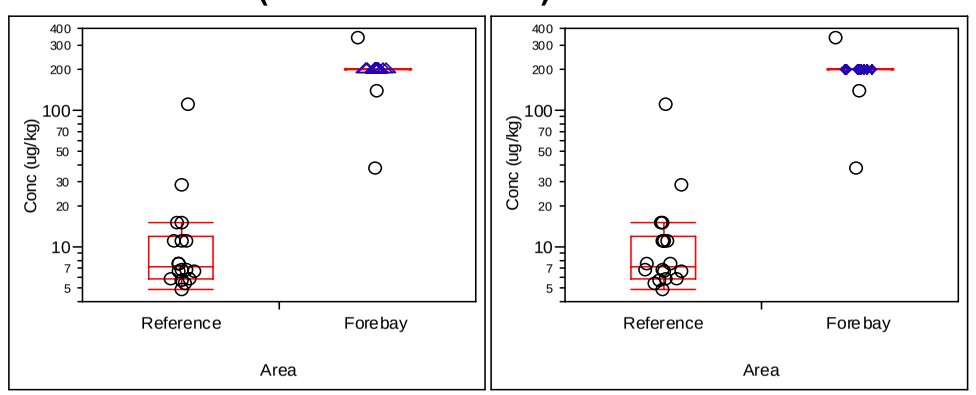
P-CRESOL (4-METHYLPHENOL)



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

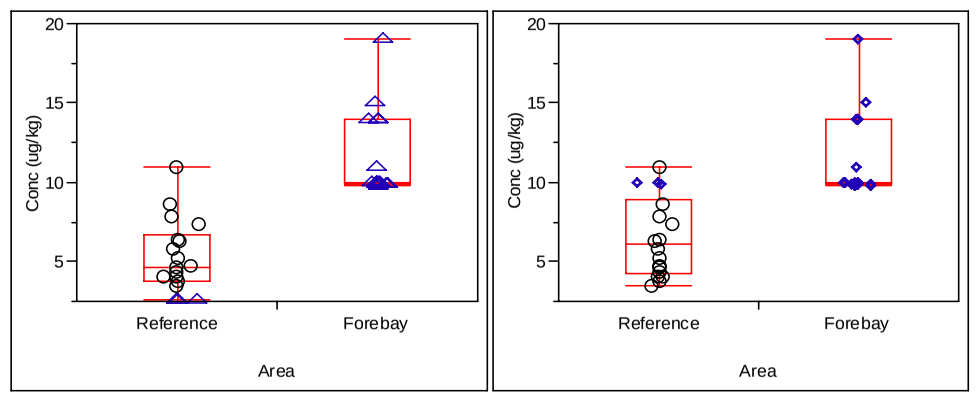
BIS(2-ETHYLHEXYL) PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

DI-N-BUTYL PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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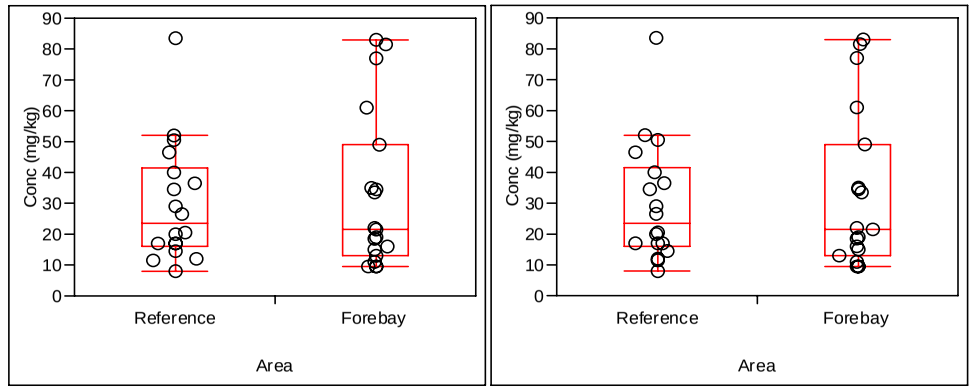
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
SVOCs IN SEDIMENT

DRAWING NUMBER:	
FIG L-2g	
CAD FILE NUMBER:	
FIG L-2g	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-2g SVOCs in Sediment.dwg Nov 17, 2010 - 8:36am

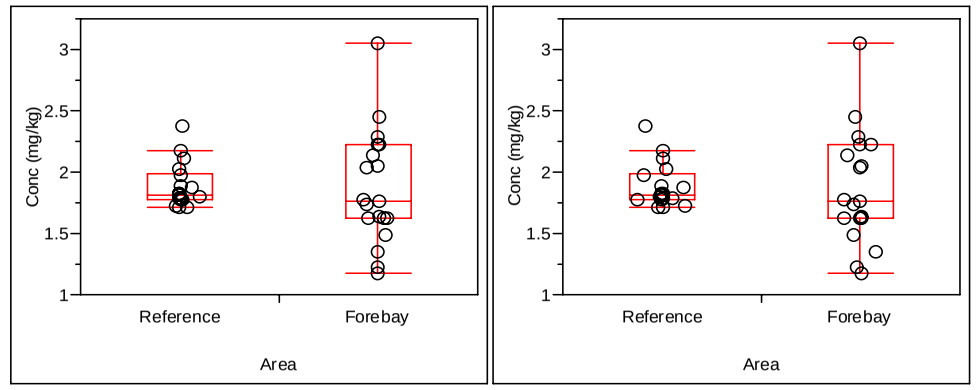
ALUMINUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

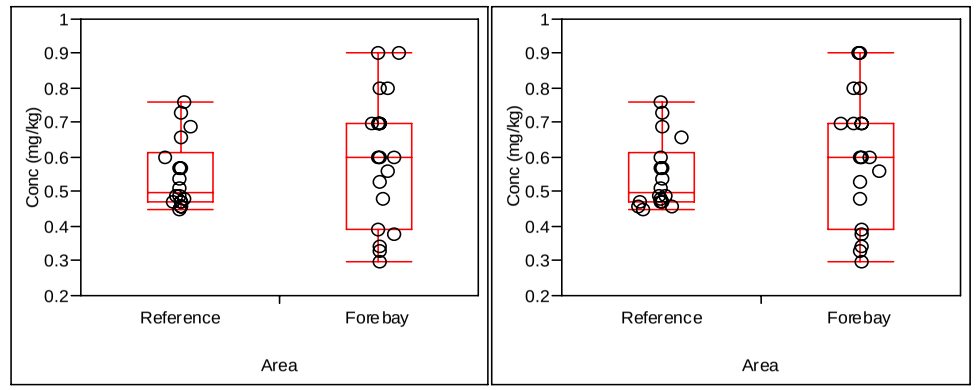
BARIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

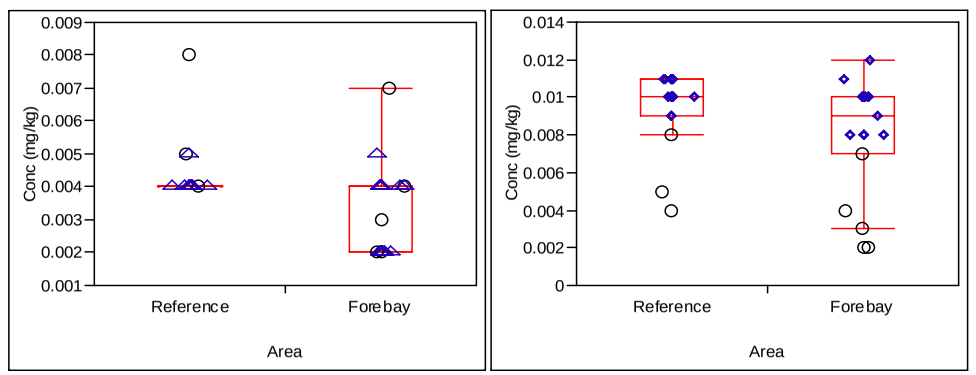
CHROMIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

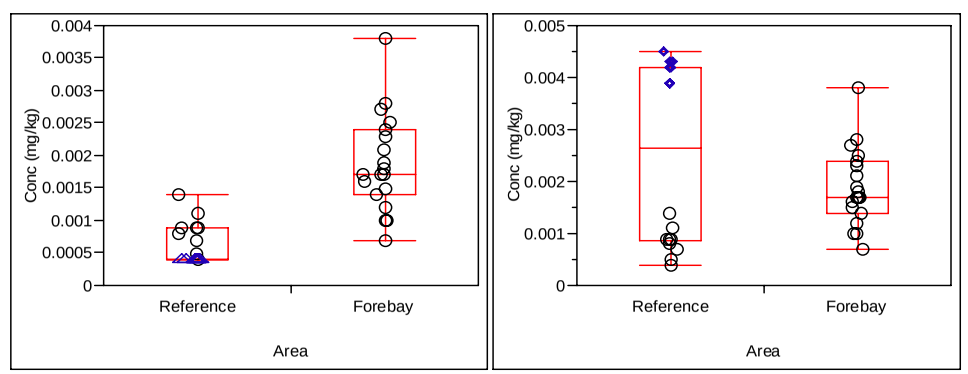
ANTIMONY



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

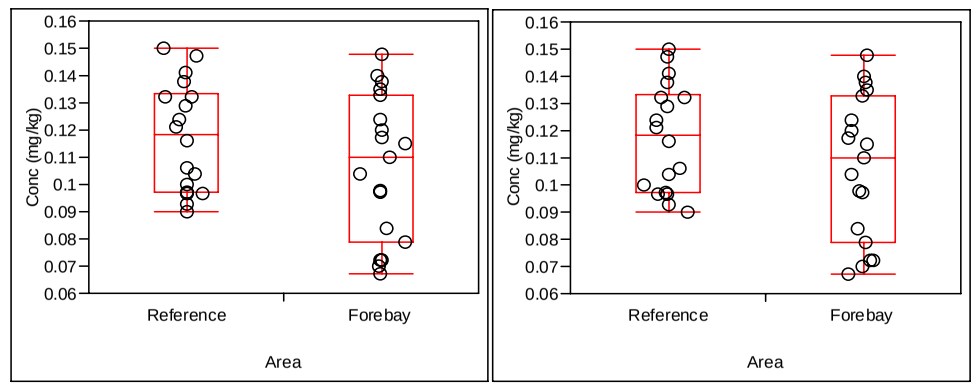
BERYLLIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

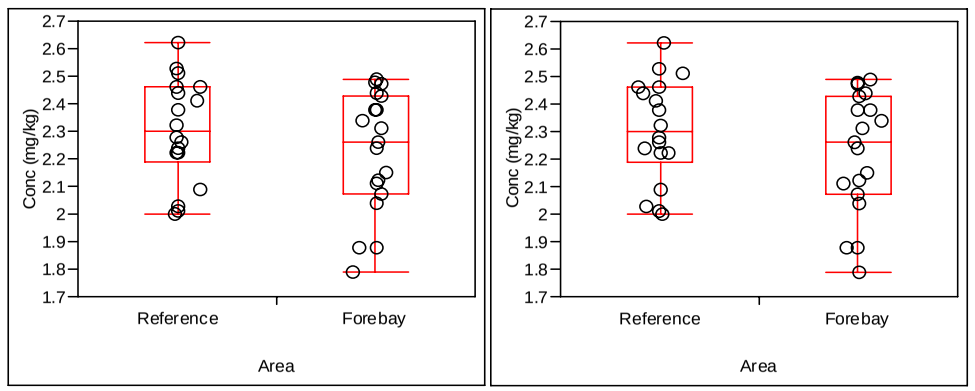
COBALT



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

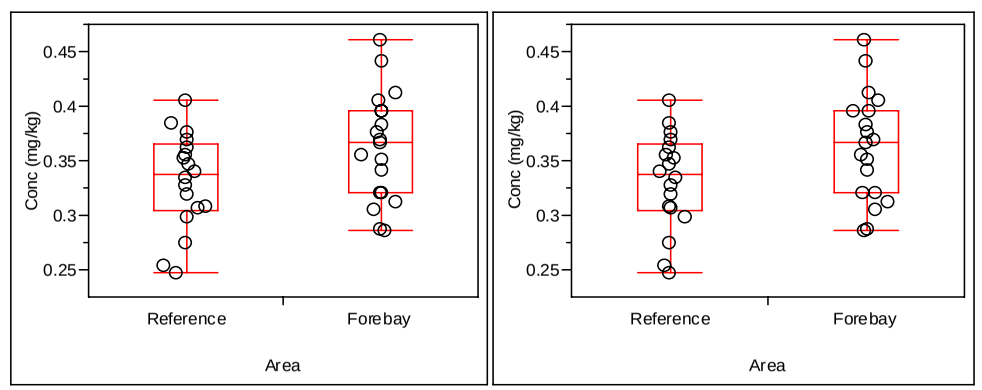
ARSENIC



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

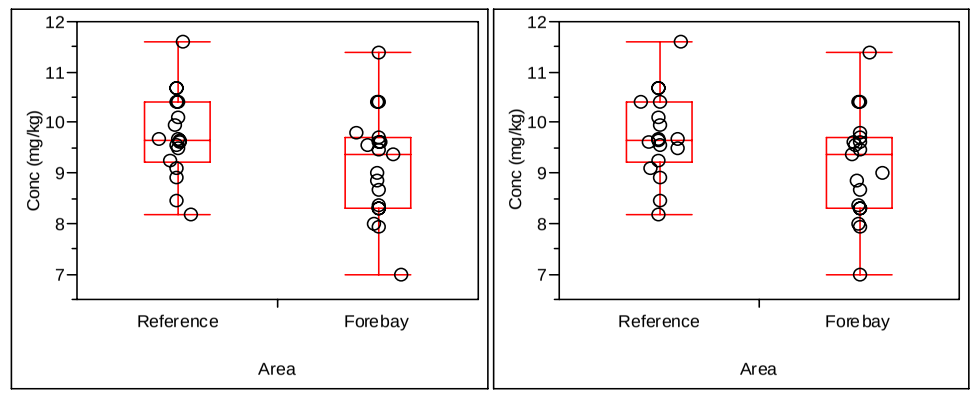
CADMIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

COPPER



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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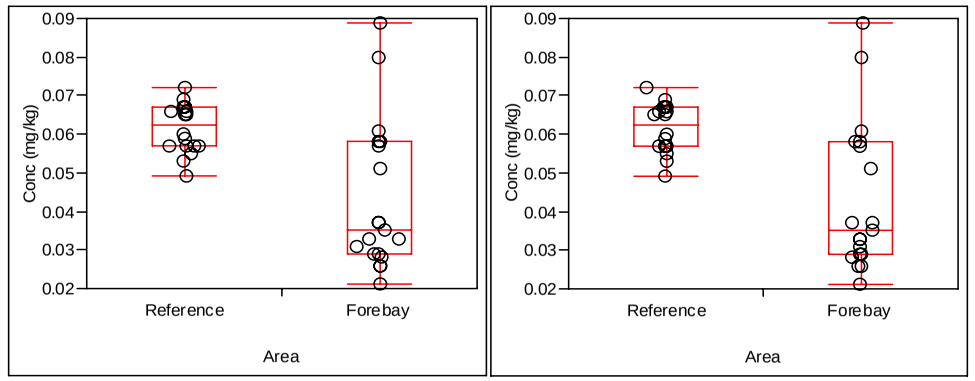
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN CLAM TISSUE

DRAWING NUMBER: FIG L-3a
CAD FILE NUMBER: FIG L-3a
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-3a Metals in Clam Tissue.dwg Nov 17, 2010 - 8:36am

LEAD

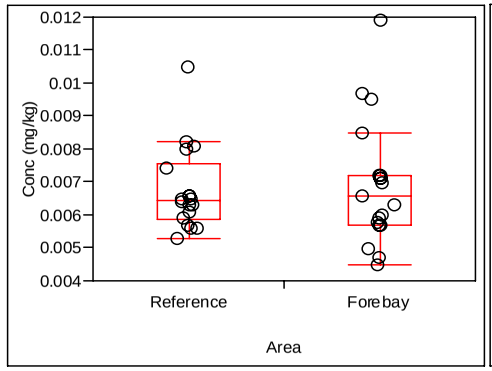


CENSORED AT MDL

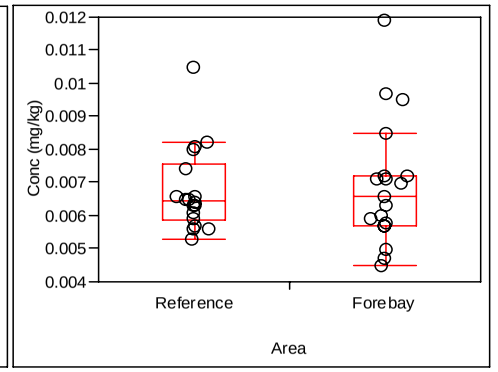
CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

THALLIUM



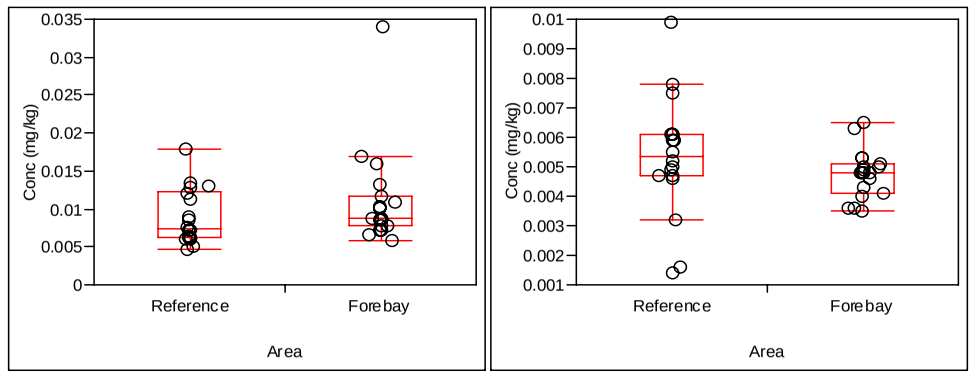
CENSORED AT MDL



CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

MERCURY

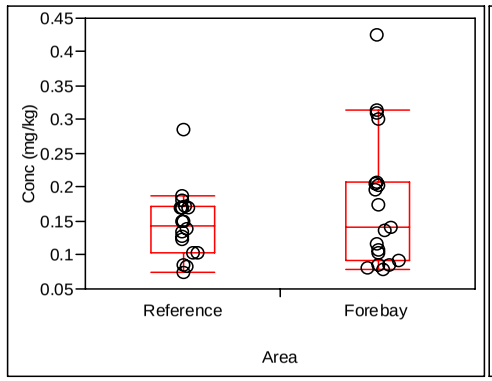


CENSORED AT MDL

CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

VANADIUM



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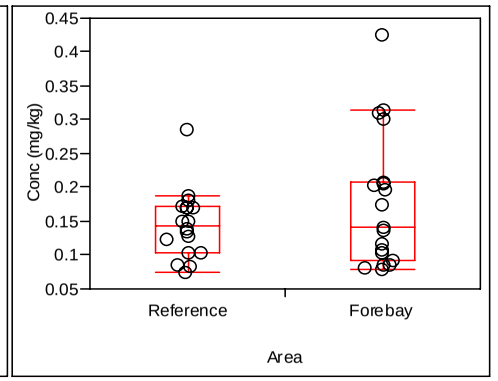
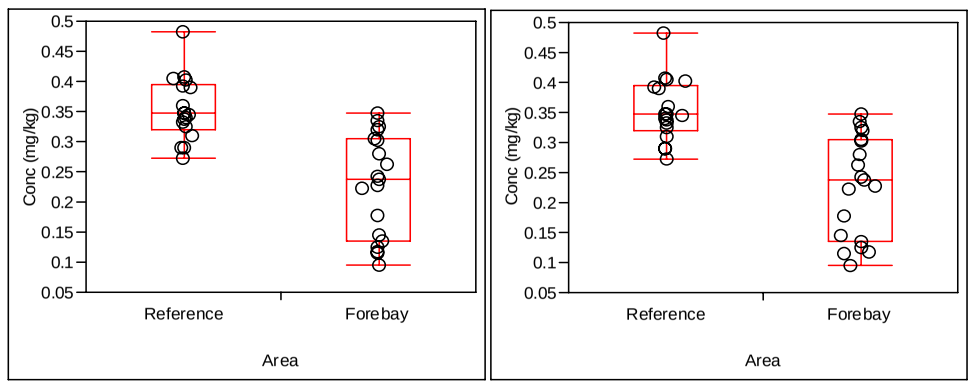


CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

NICKEL

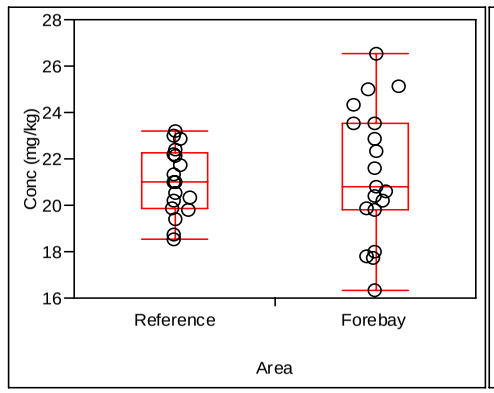


CENSORED AT MDL

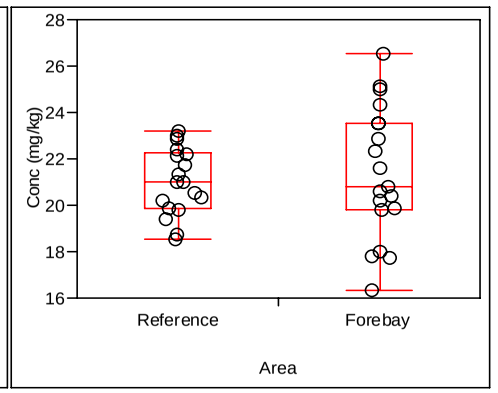
CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

ZINC



CENSORED AT MDL



CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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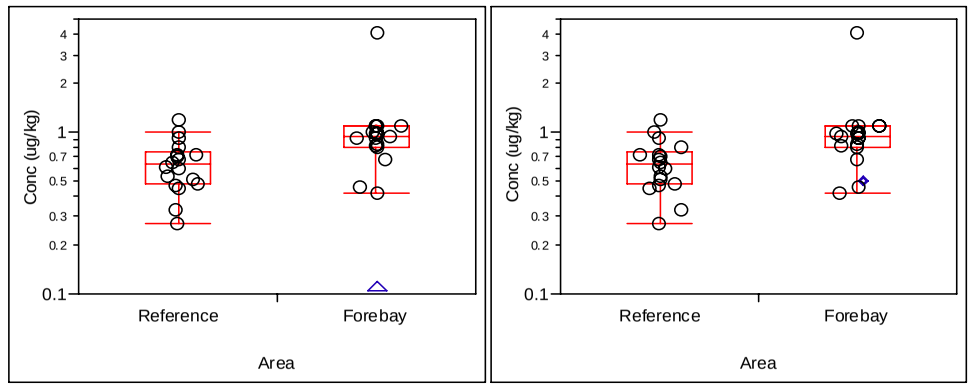
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN CLAM TISSUE

DRAWING NUMBER: FIG L-3b
CAD FILE NUMBER: FIG L-3b
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-3b Metals in Clam Tissue.dwg Nov 17, 2010 - 8:37am

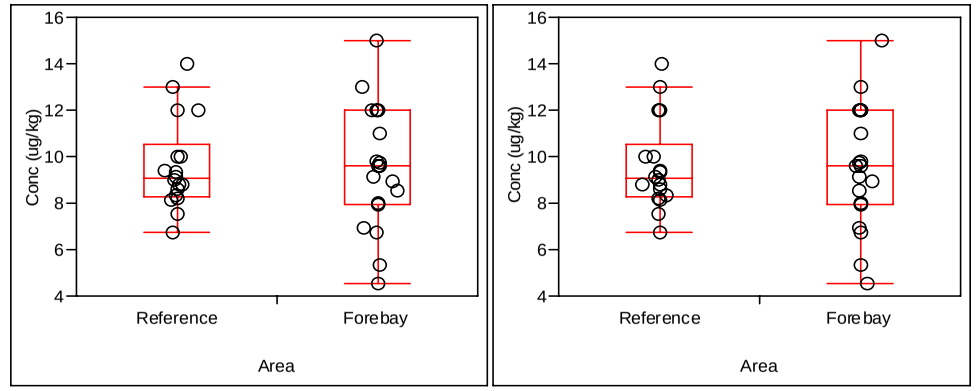
ACENAPHTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

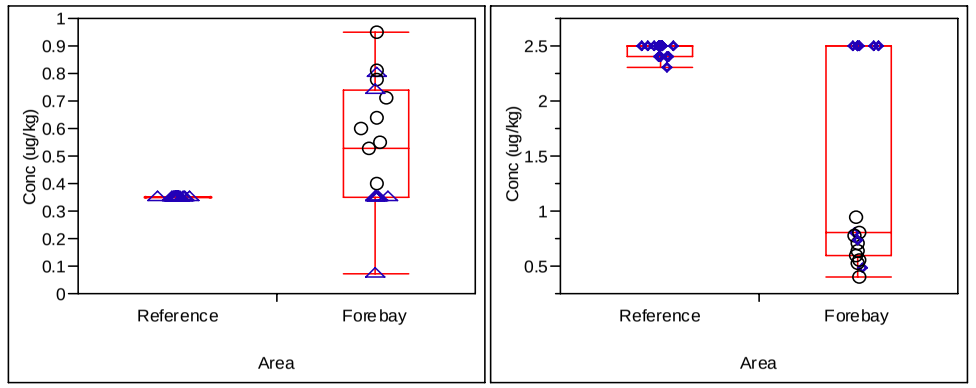
PHENANTHRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

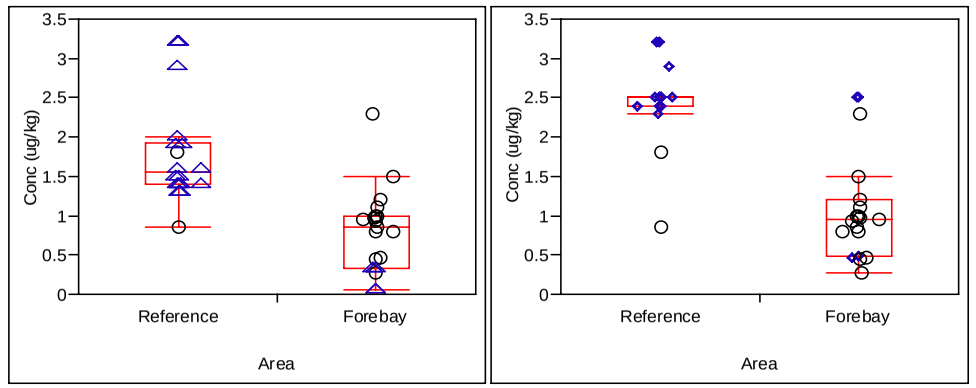
BENZO(B)FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

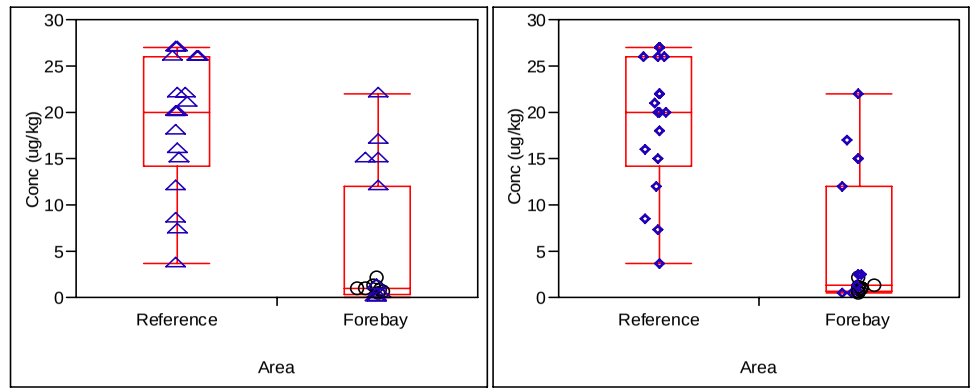
ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

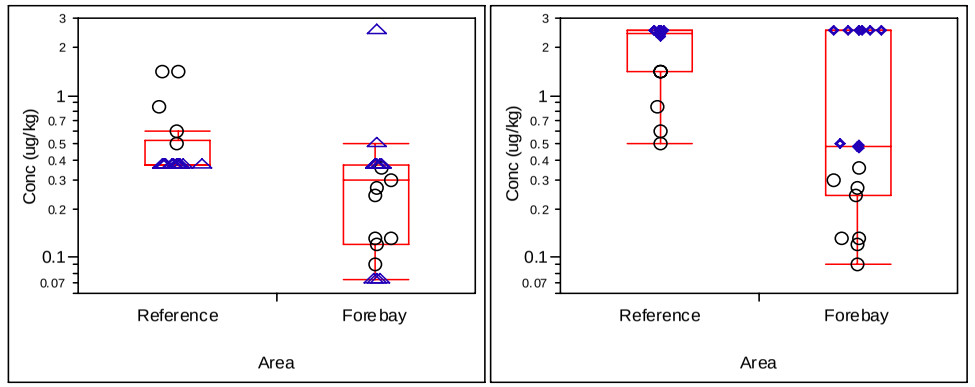
BENZO(A)ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

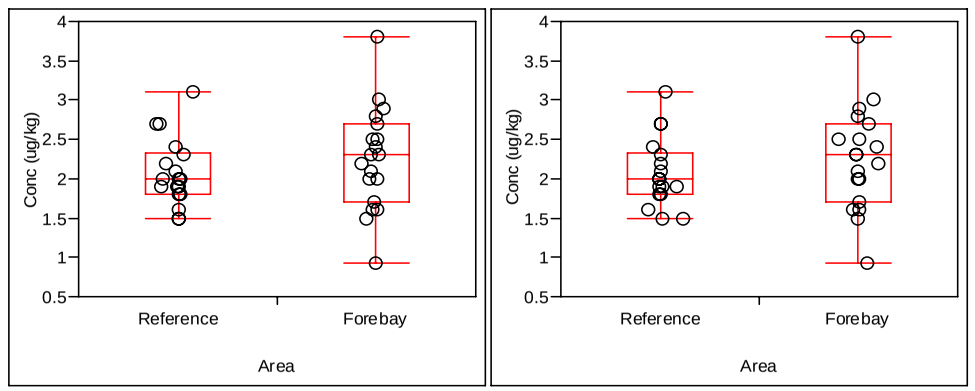
BENZO(G,H,I)PERYLENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

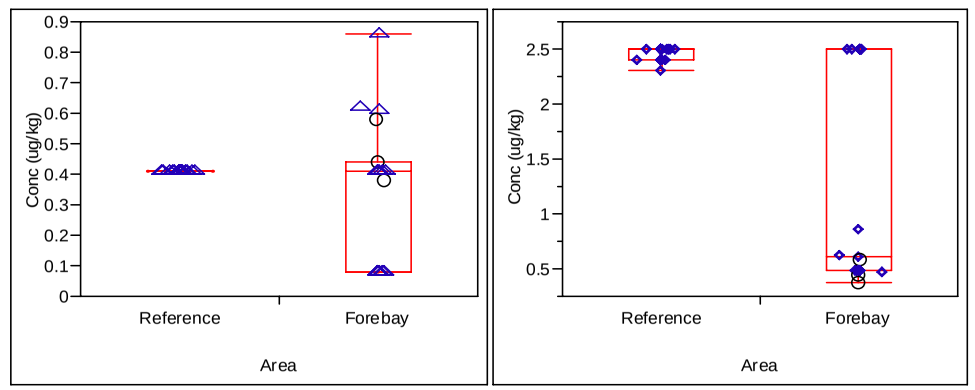
FLUORENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

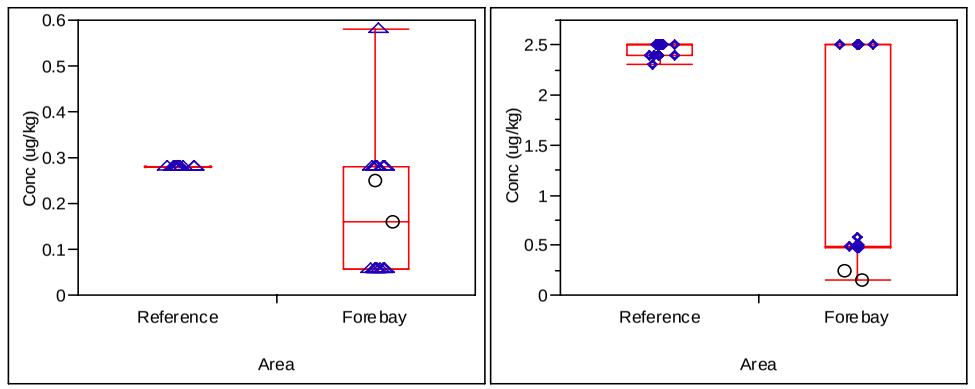
BENZO(A)PYRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

BENZO(K)FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
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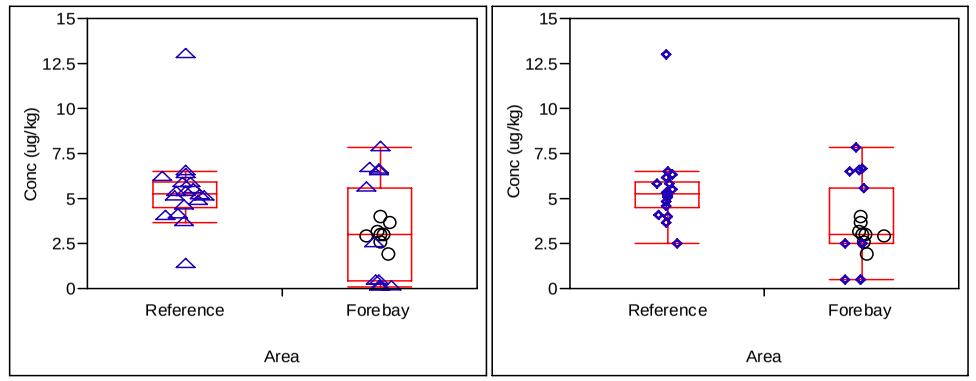
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN CLAM TISSUE

DRAWING NUMBER:	
FIG L-3c	
CAD FILE NUMBER:	
FIG L-3c	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-3c PAHs in Clam Tissue.dwg Nov 17, 2010 - 8:37am

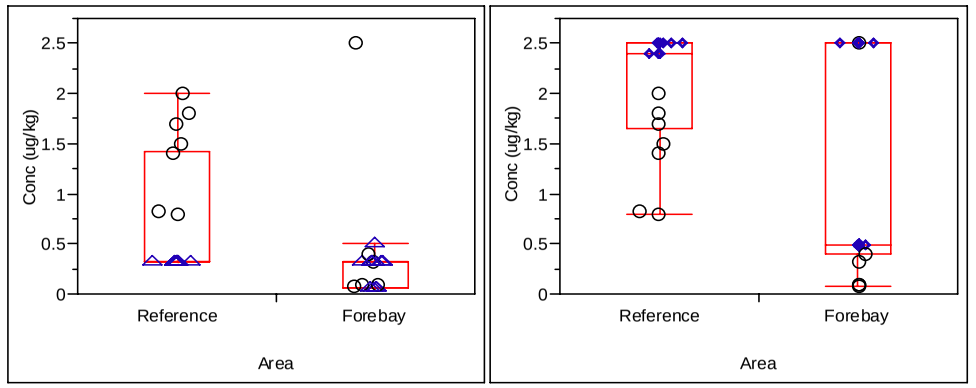
CHRYSENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

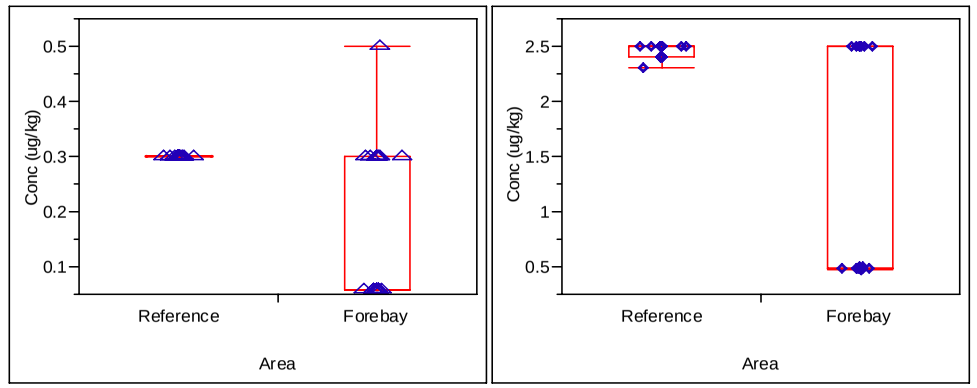
INDENO(1,2,3-CD)PYRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

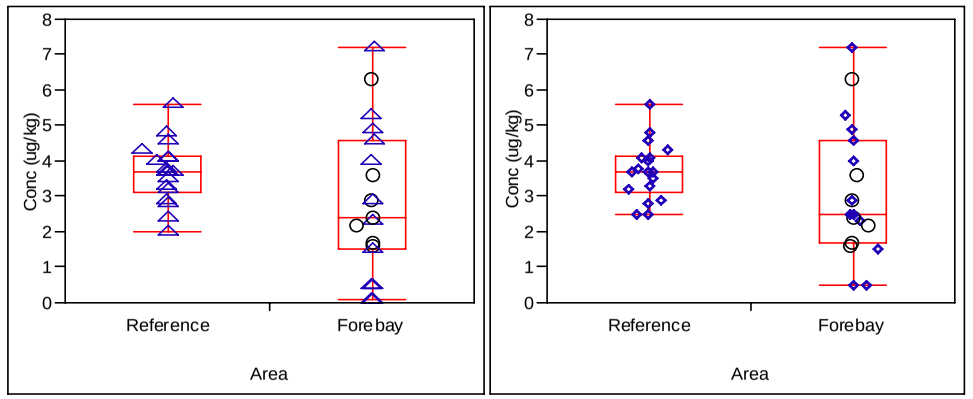
DIBENZ(A,H)ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

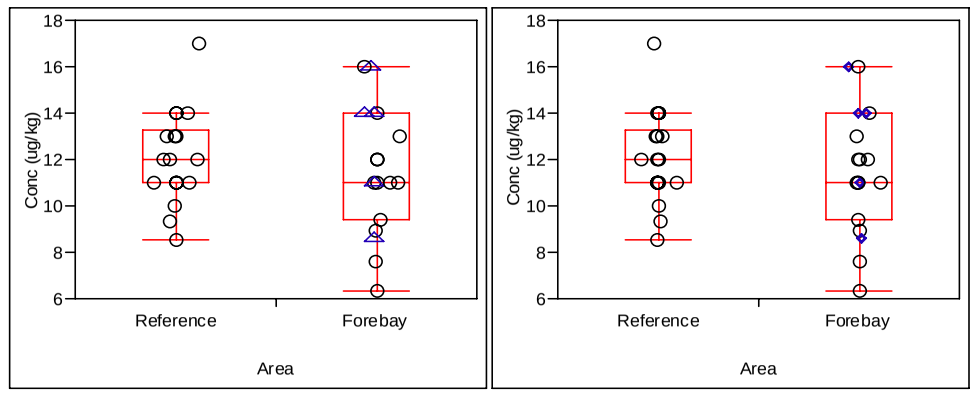
PYRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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BRADFORD ISLAND

CASCADE LOCKS, OREGON

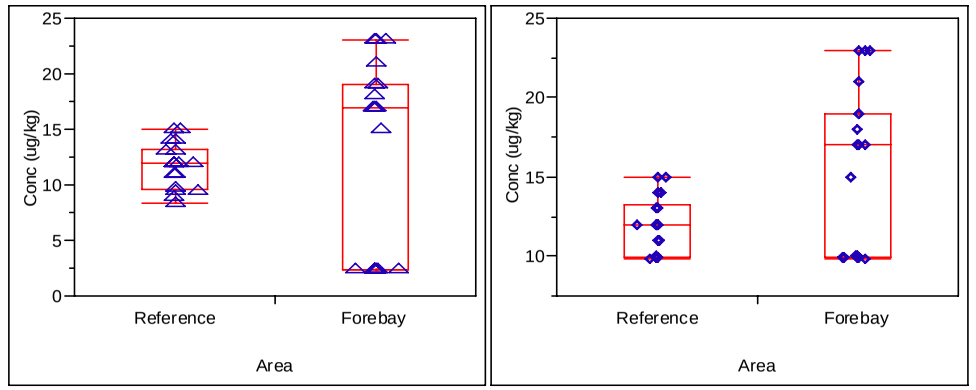
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN CLAM TISSUE

DRAWING NUMBER: FIG L-3d
CAD FILE NUMBER: FIG L-3d
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-3d PAHs in Clam Tissue.dwg Nov 17, 2010 - 8:38am

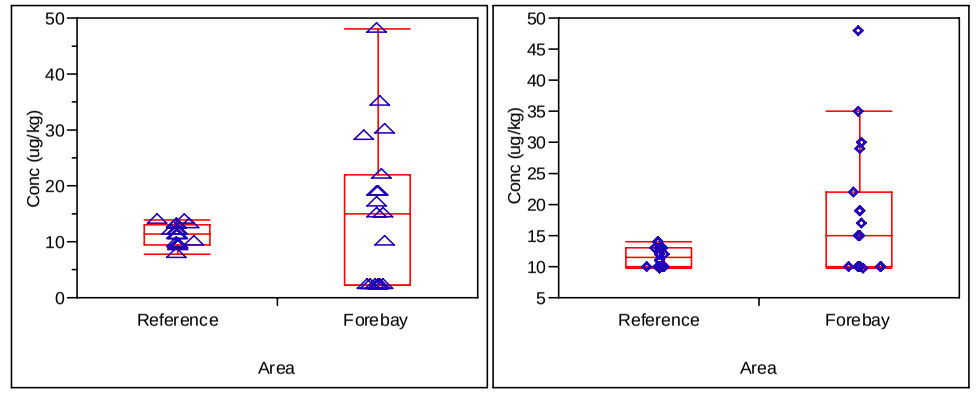
AROCLOR 1016



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

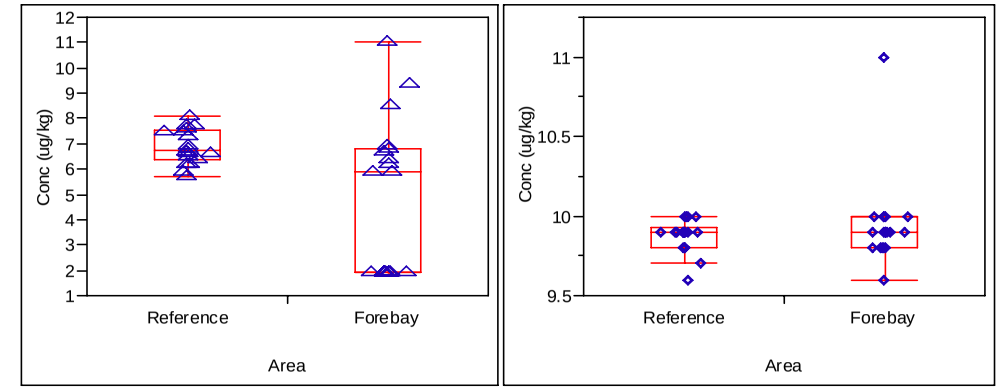
AROCLOR 1242



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

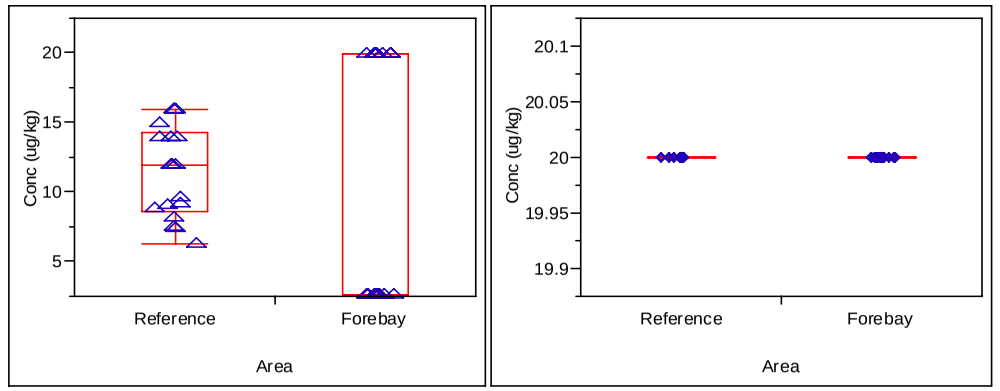
AROCLOR 1260



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

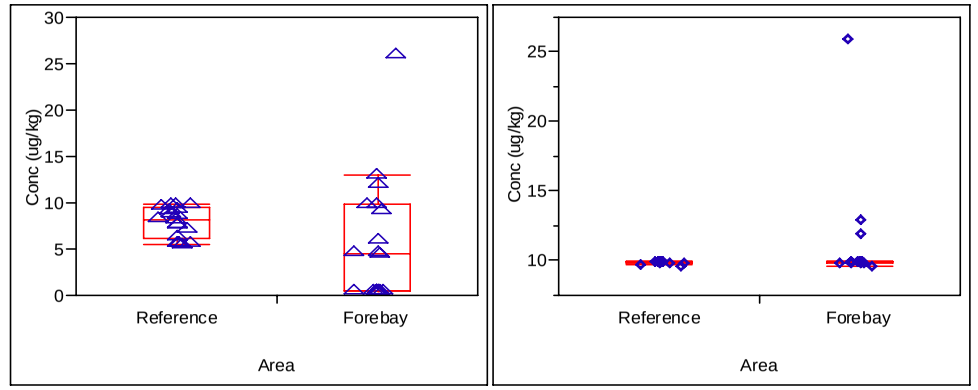
AROCLOR 1221



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

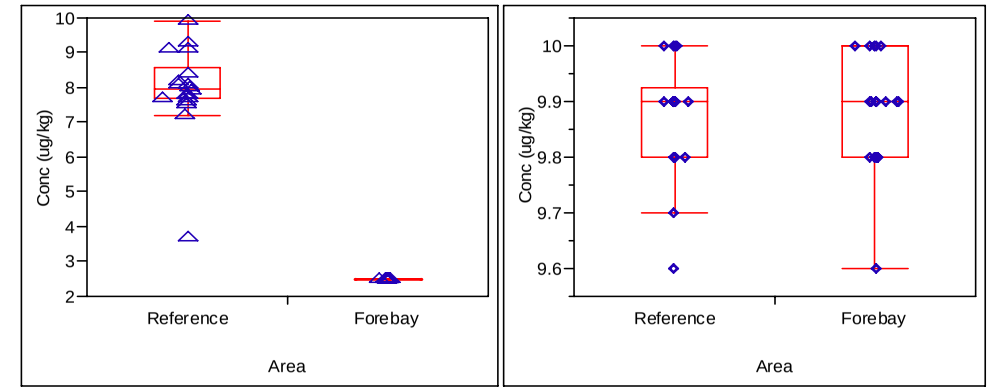
AROCLOR 1248



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

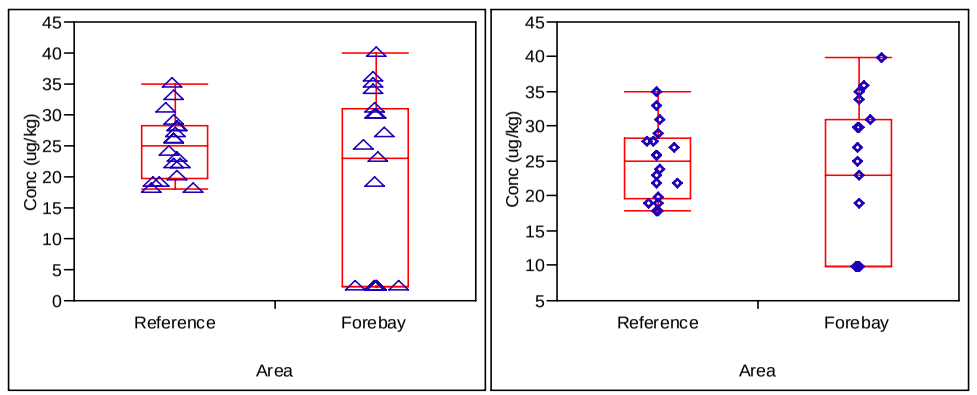
AROCLOR 1262



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

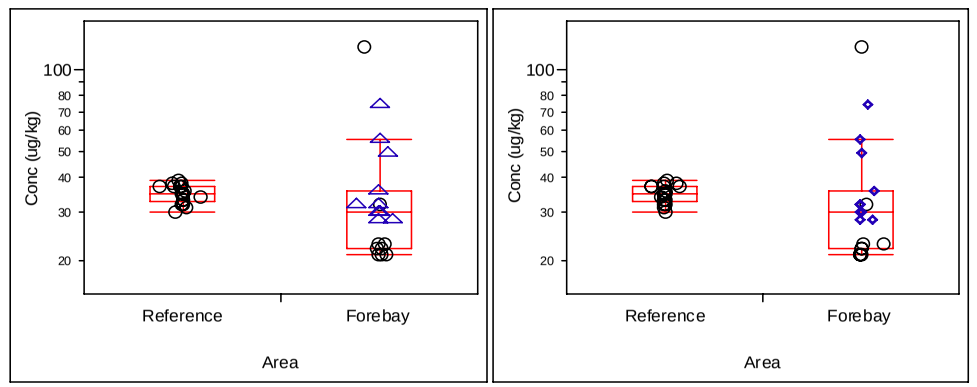
AROCLOR 1232



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

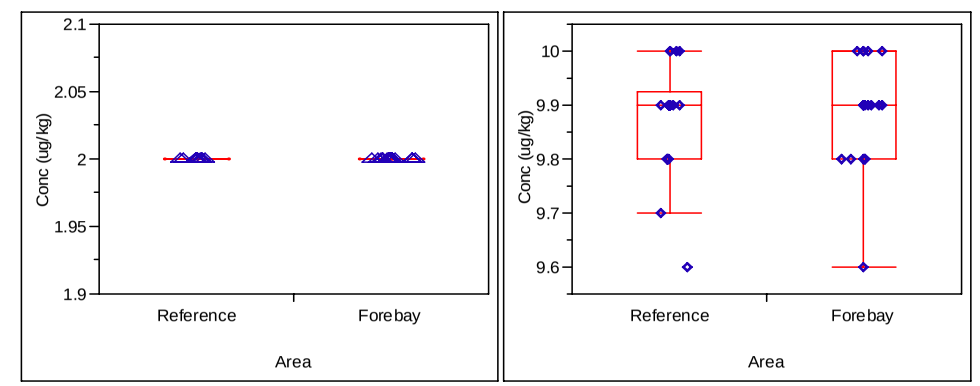
AROCLOR 1254



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

AROCLOR 1268



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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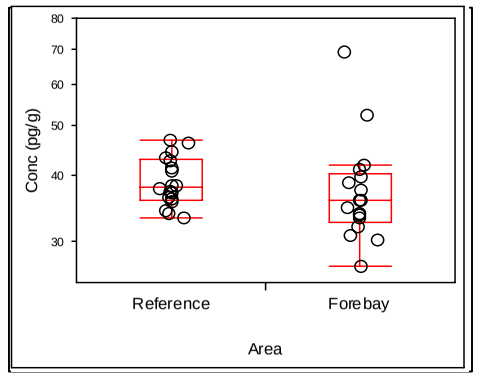
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PCB AROCLORS IN CLAM TISSUE

DRAWING NUMBER: FIG L-3e
CAD FILE NUMBER: FIG L-3e
SHEET: OF
REV.

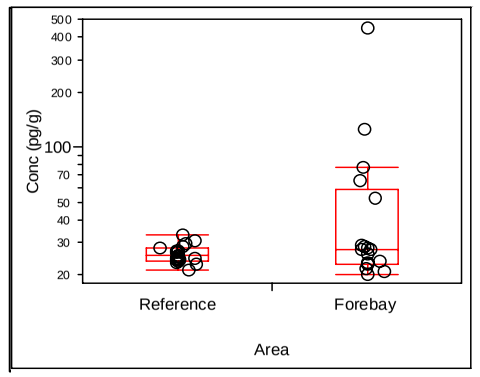
O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-3e PCB Aroclors in Clam Tissue.dwg Nov 17, 2010 - 8:38am

PCB 77



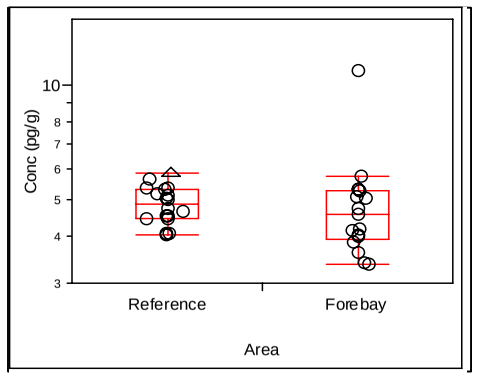
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 114



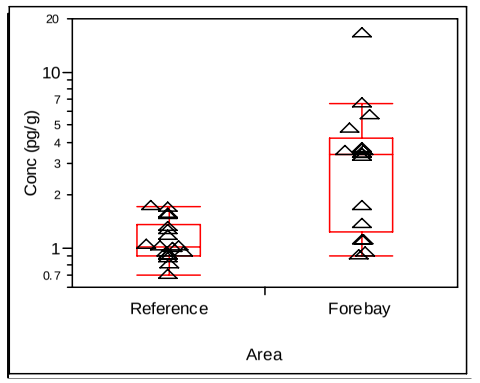
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 126



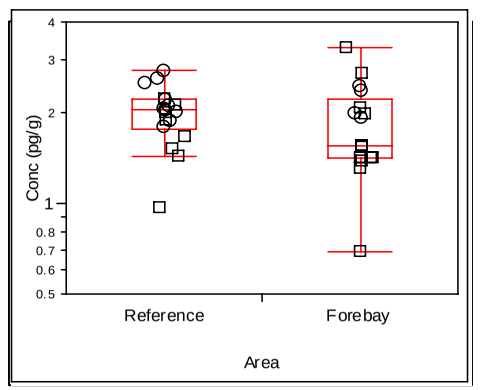
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 169



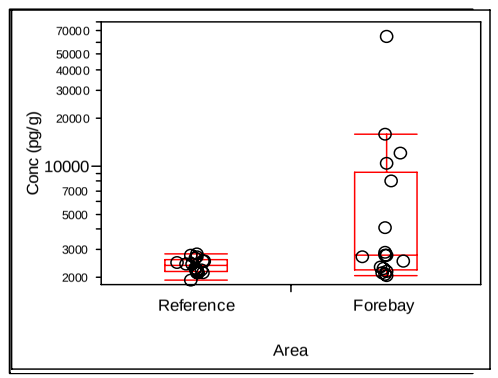
ALL SAMPLES ARE NON DETECTS

PCB 81



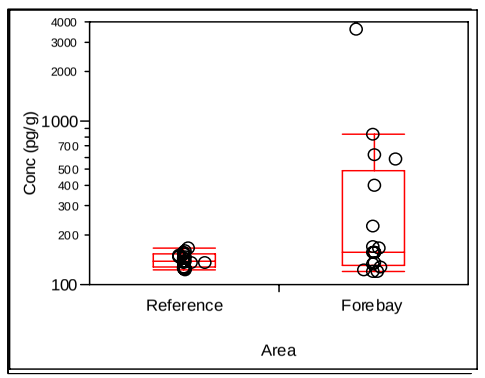
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 118



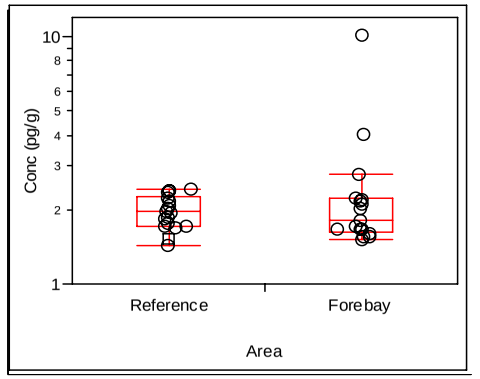
FOREBAY IS STATISTICALLY HIGHER

PCB 156+157



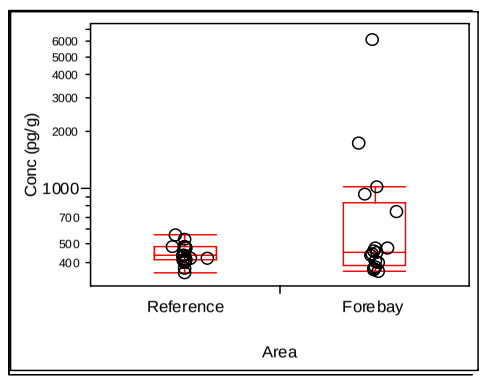
FOREBAY IS STATISTICALLY HIGHER

PCB 189



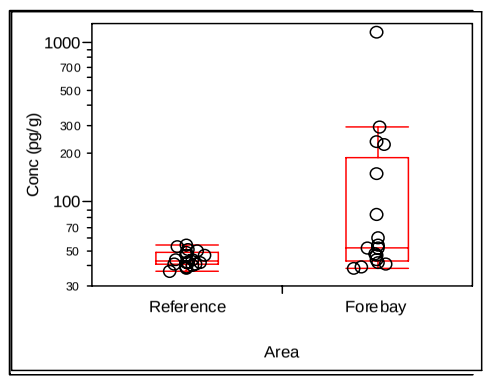
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 105



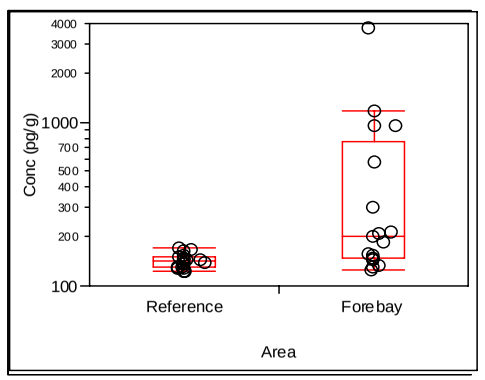
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 123



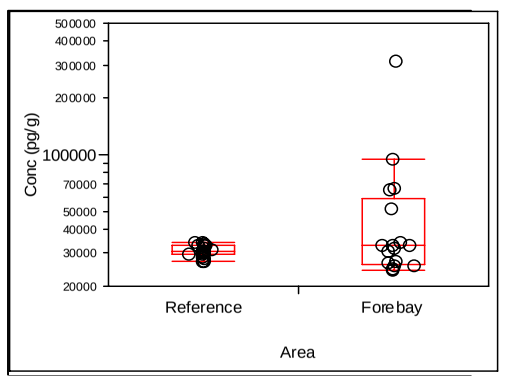
FOREBAY IS STATISTICALLY HIGHER

PCB 167



FOREBAY IS STATISTICALLY HIGHER

SUM 209 CONGENERS (KM-BASED)



FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- ◬ Non-Detect, Censored at Reported Detection Limit (RDL)
- □ EMPC Result, Censored at Reported Value

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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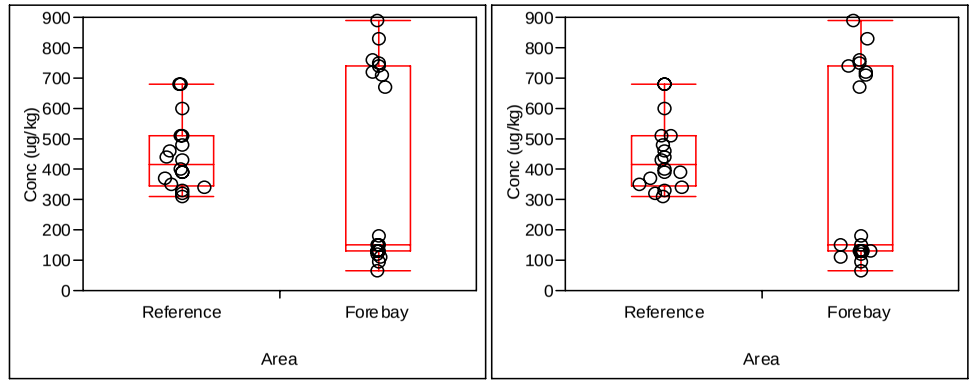
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PCB CONGENERS IN CLAM TISSUE

DRAWING NUMBER:	
FIG L-3f	
CAD FILE NUMBER:	
FIG L-3f	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-3f PCB Congeners in Clam Tissue.dwg Nov 12, 2010 - 2:47pm

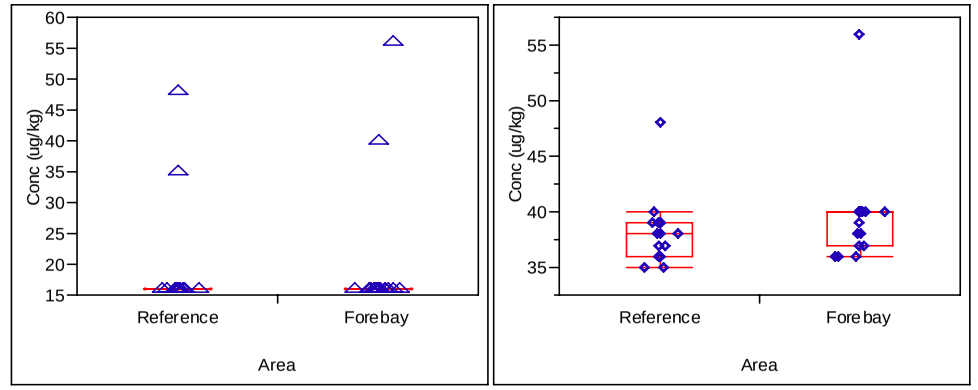
BIS(2-ETHYLHEXYL) PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

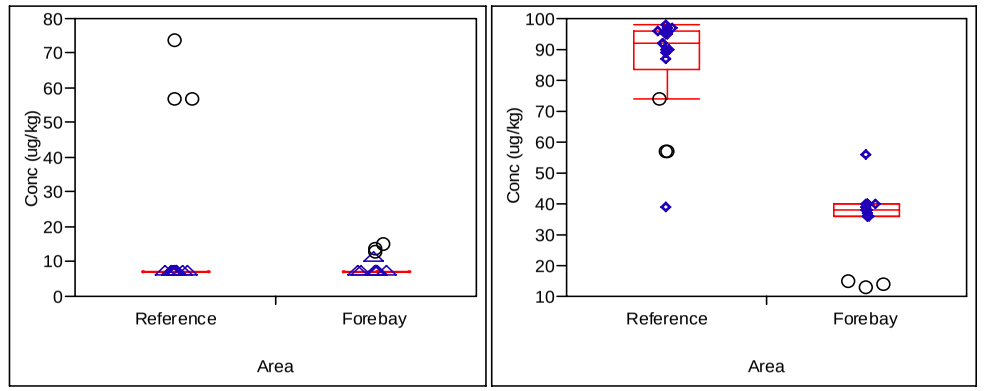
DI-N-BUTYL PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

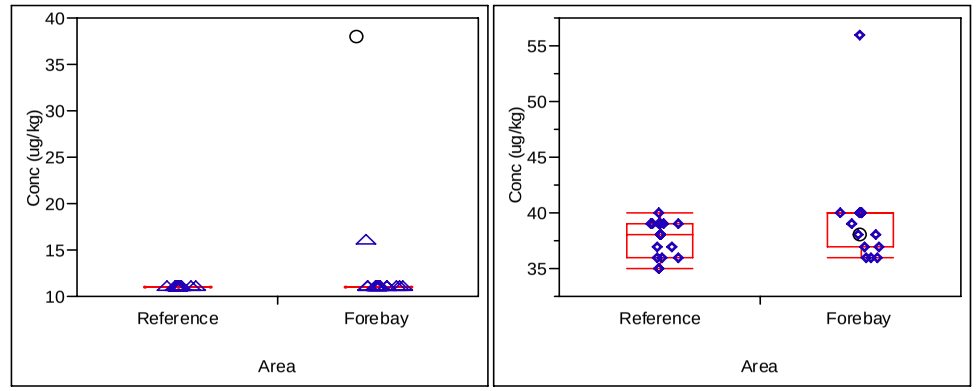
BUTYL BENZYL PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

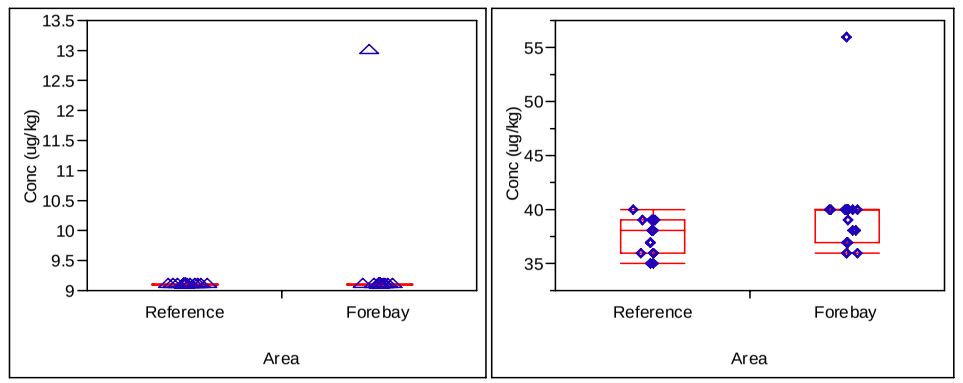
DI-N-OCTYL PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

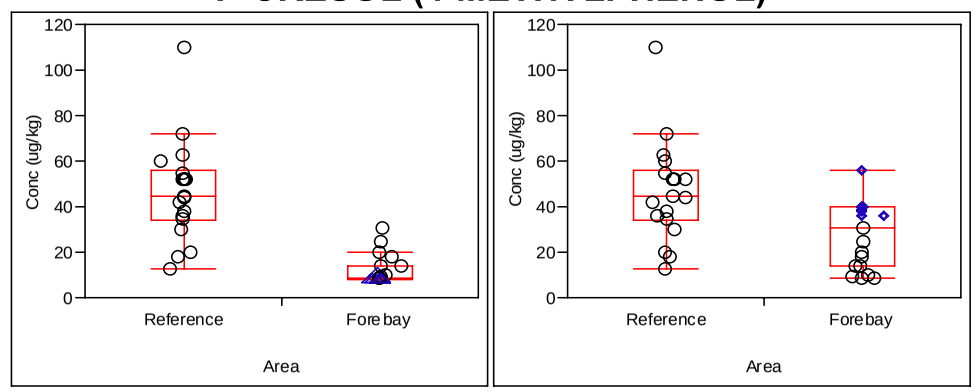
CARBAZOLE



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

P-CRESOL (4-METHYLPHENOL)



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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CASCADE LOCKS, OREGON

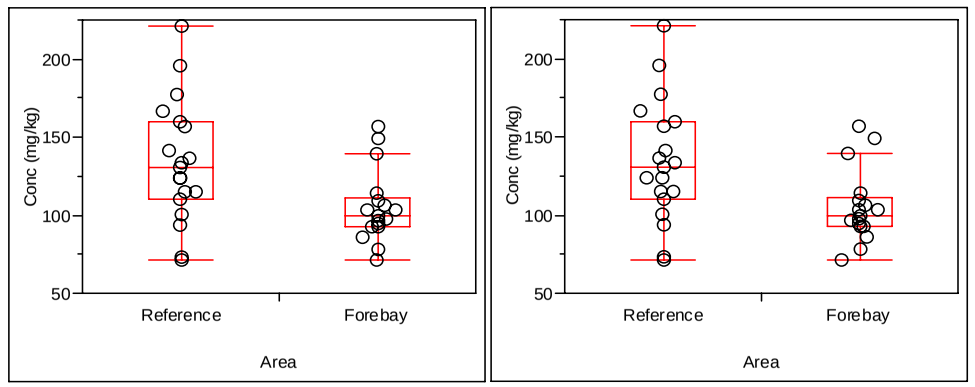
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
SVOCs IN CLAM TISSUE

DRAWING NUMBER: FIG L-3g
CAD FILE NUMBER: FIG L-3g
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-3g SVOCs in Clam Tissue.dwg Nov 17, 2010 - 8:39am

ALUMINUM

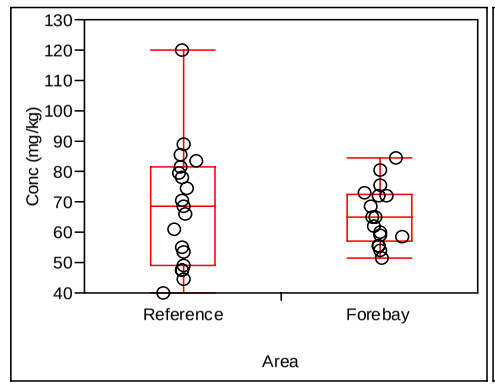


CENSORED AT MDL

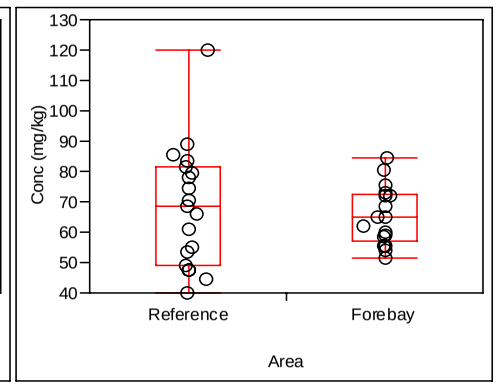
CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

BARIUM



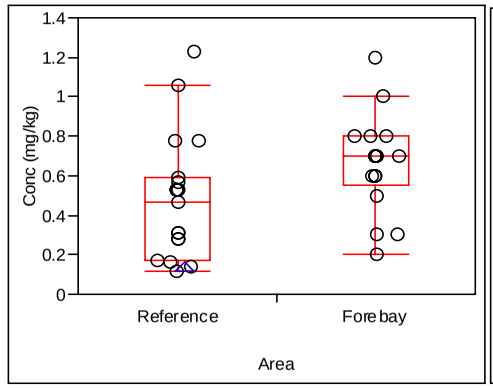
CENSORED AT MDL



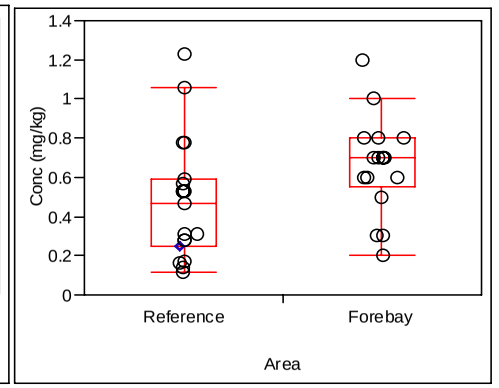
CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

CHROMIUM



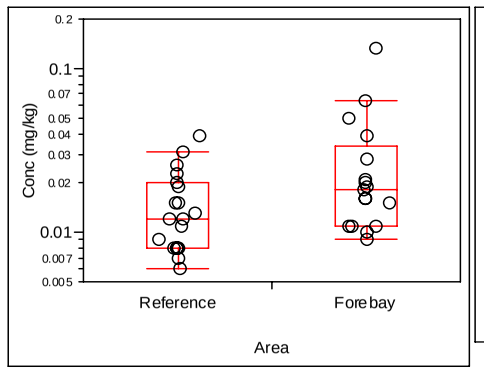
CENSORED AT MDL



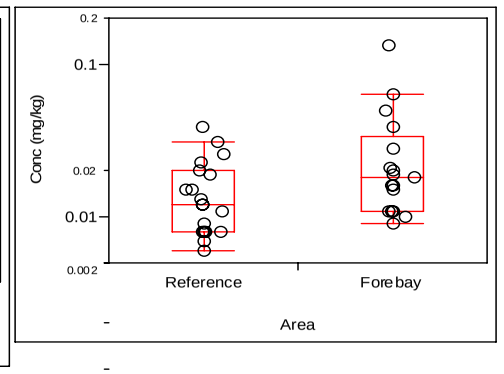
CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

ANTIMONY



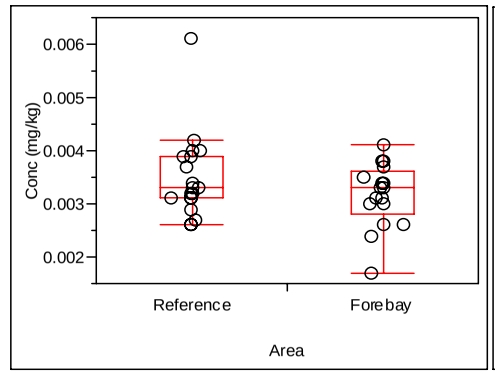
CENSORED AT MDL



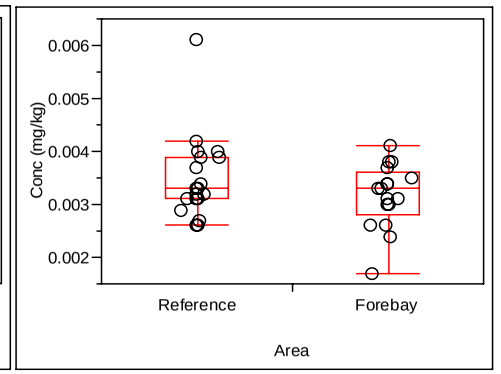
CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

BERYLLIUM



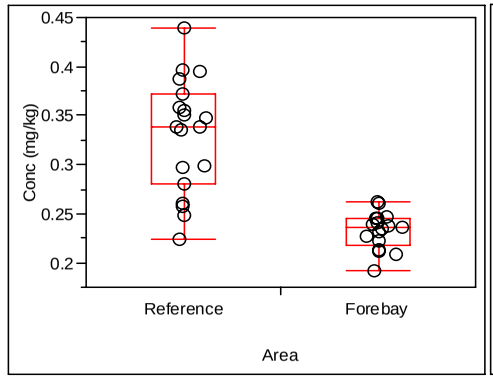
CENSORED AT MDL



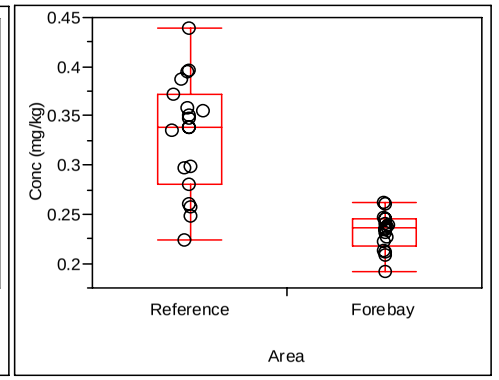
CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

COBALT



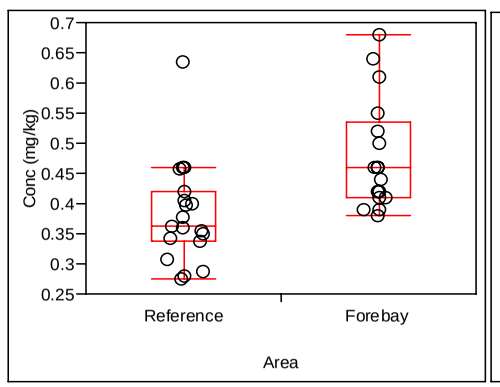
CENSORED AT MDL



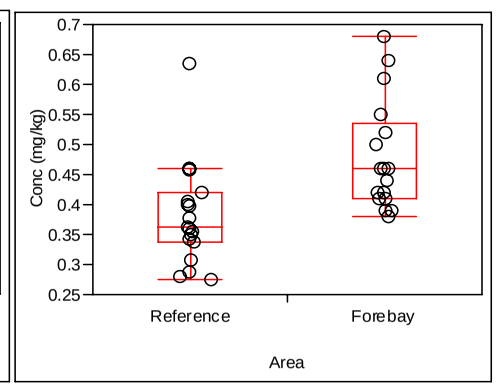
CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

ARSENIC



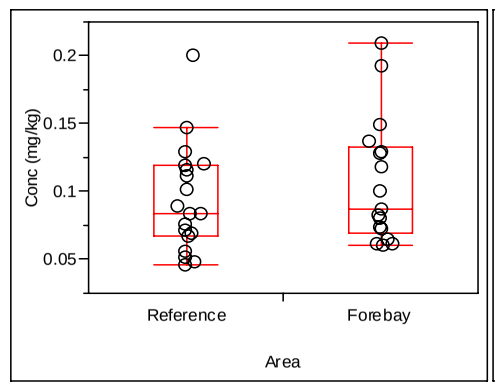
CENSORED AT MDL



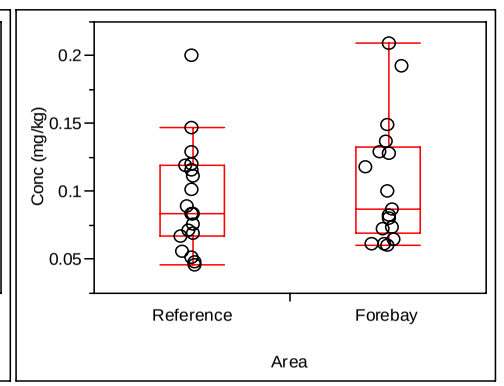
CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

CADMIUM



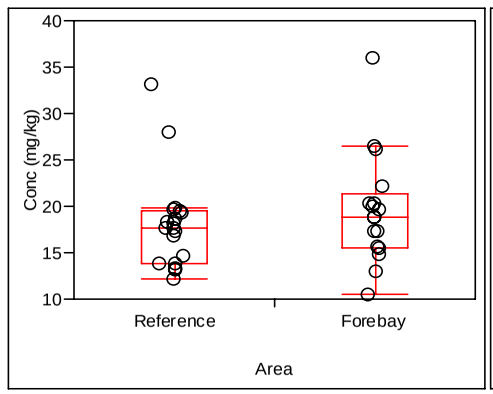
CENSORED AT MDL



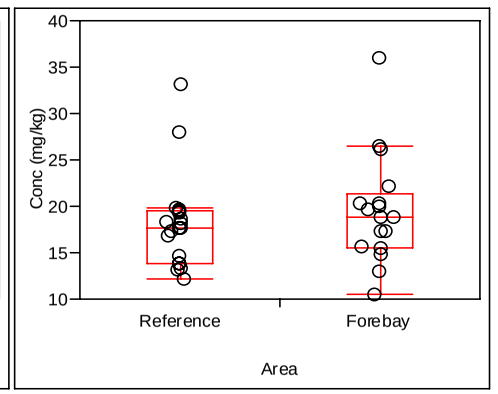
CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

COPPER



CENSORED AT MDL



CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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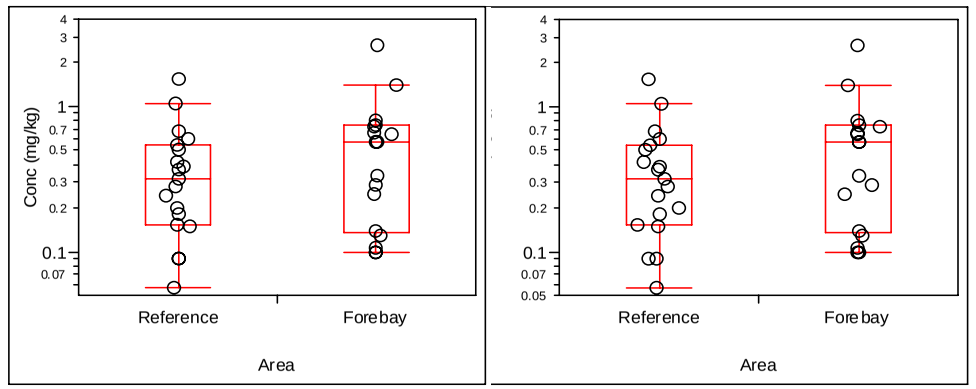
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN CRAYFISH TISSUE

DRAWING NUMBER:	
FIG L-4a	
CAD FILE NUMBER:	
FIG L-4a	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-4a Metals in Crayfish Tissue.dwg Nov 17, 2010 - 8:39am

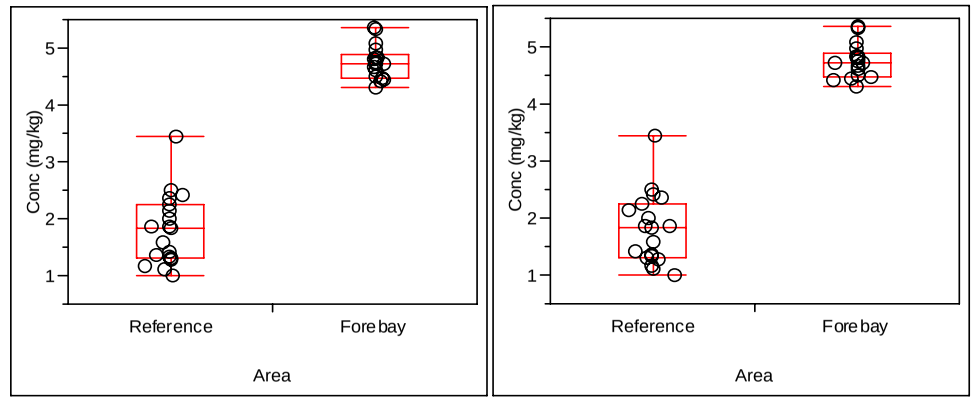
LEAD



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

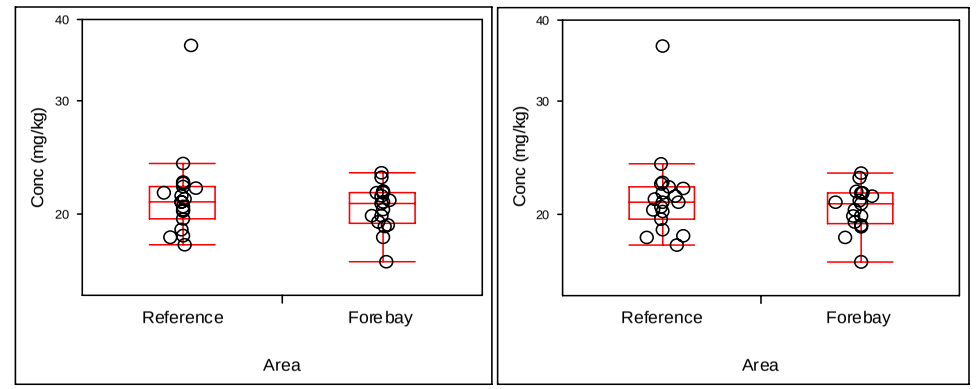
NICKEL



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

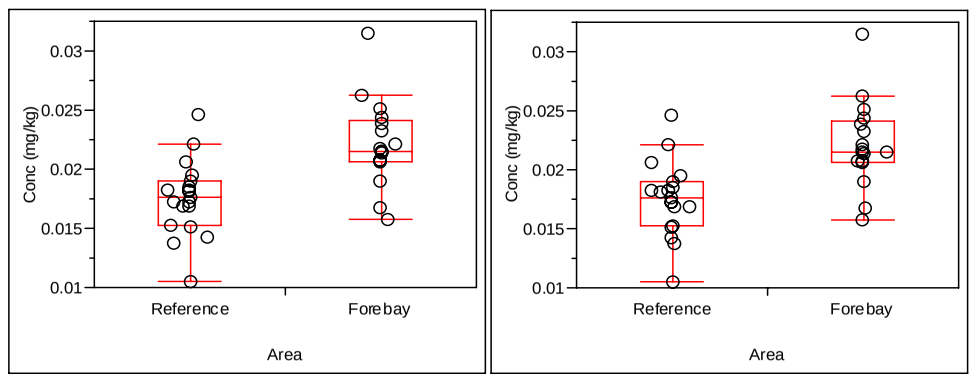
ZINC



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

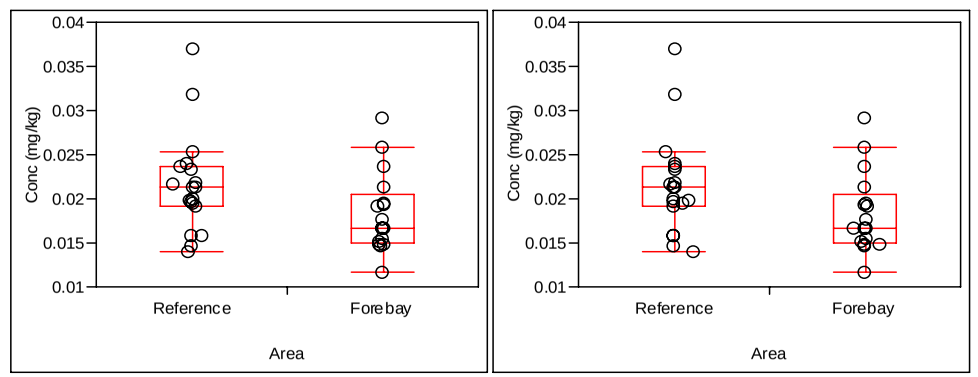
MERCURY



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

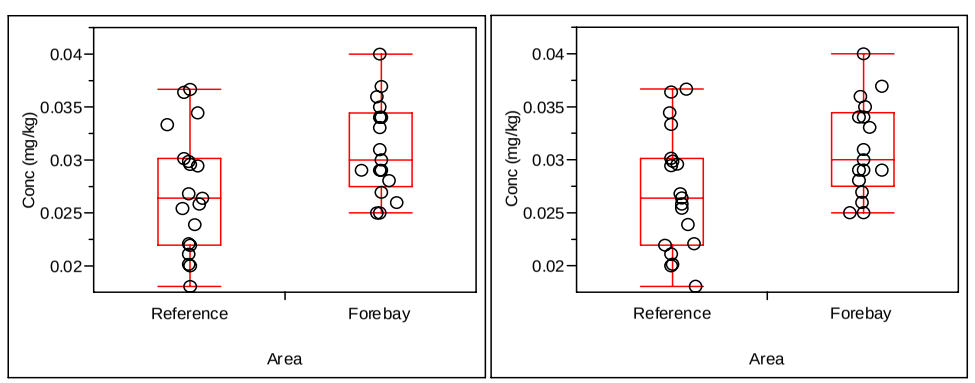
THALLIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

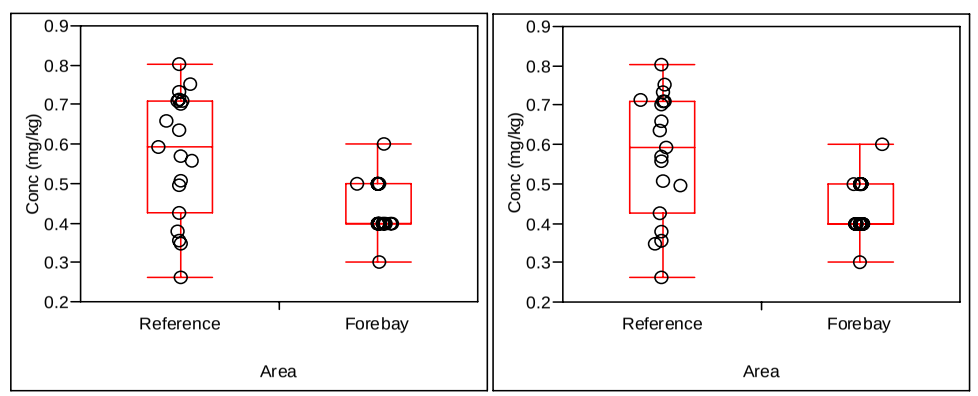
METHYL MERCURY



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

VANADIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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METALS IN CRAYFISH TISSUE

DRAWING NUMBER:	
FIG L-4b	
CAD FILE NUMBER:	
FIG L-4b	
SHEET: OF	REV.

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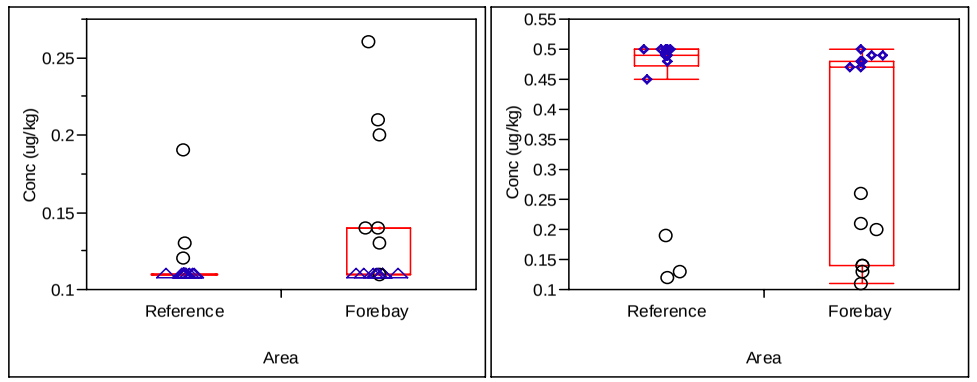
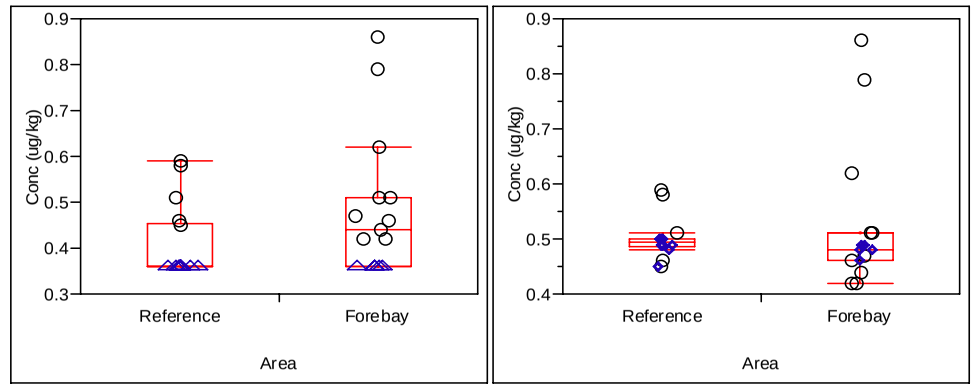
ACENAPHTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

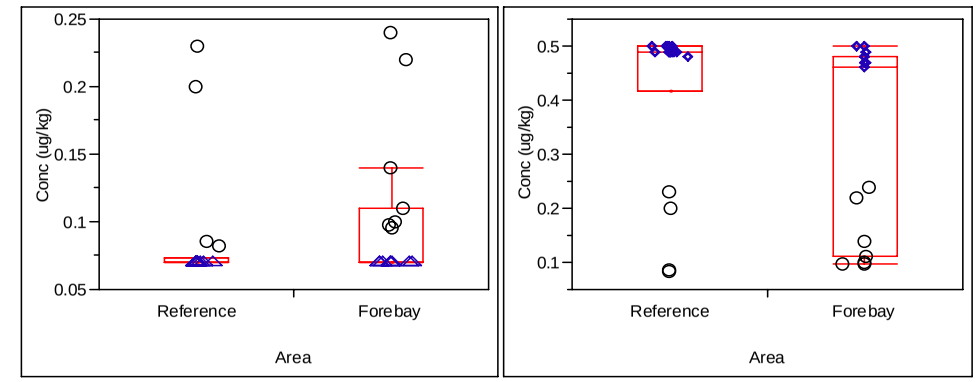
PHENANTHRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

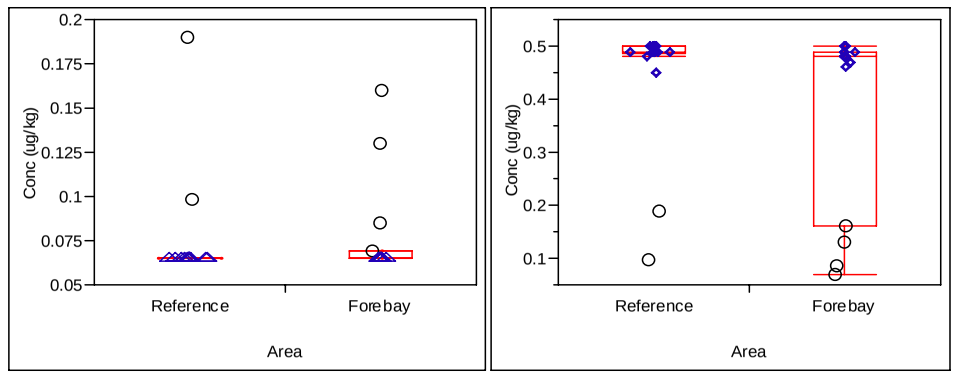
BENZO(B)FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

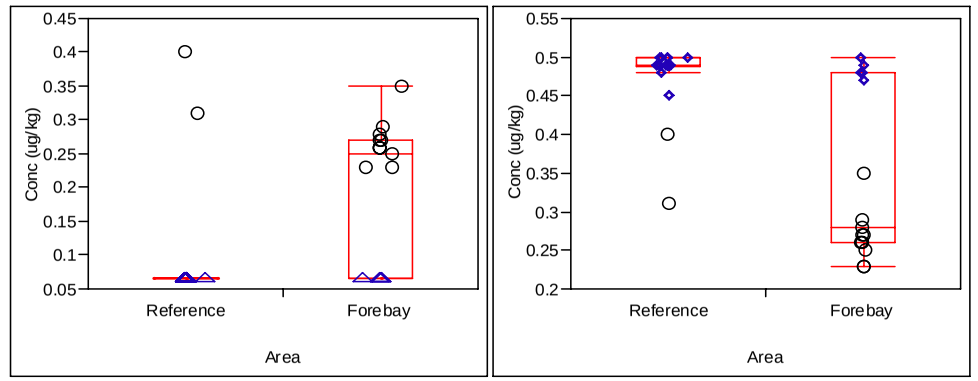
ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

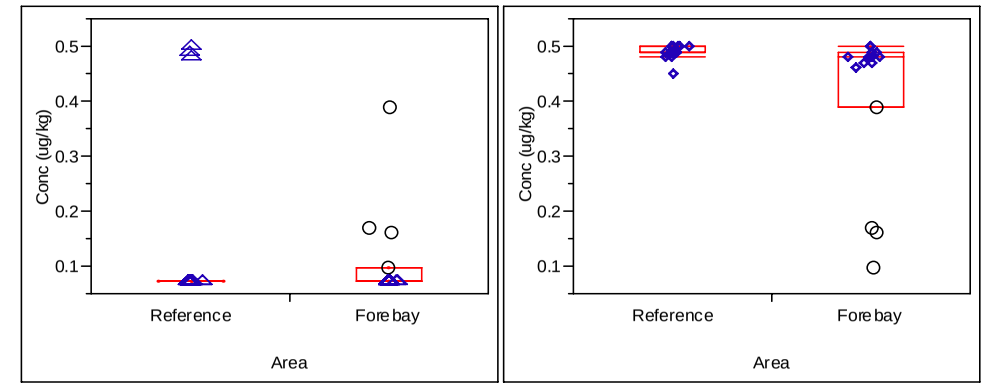
BENZO(A)ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

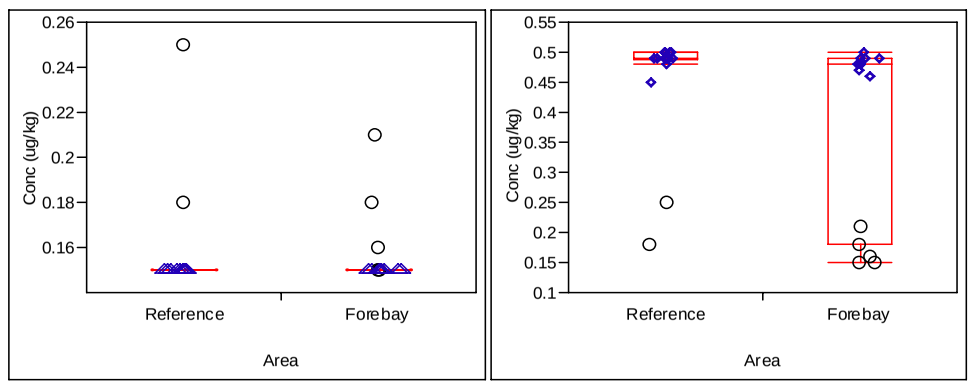
BENZO(G,H,I)PERYLENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

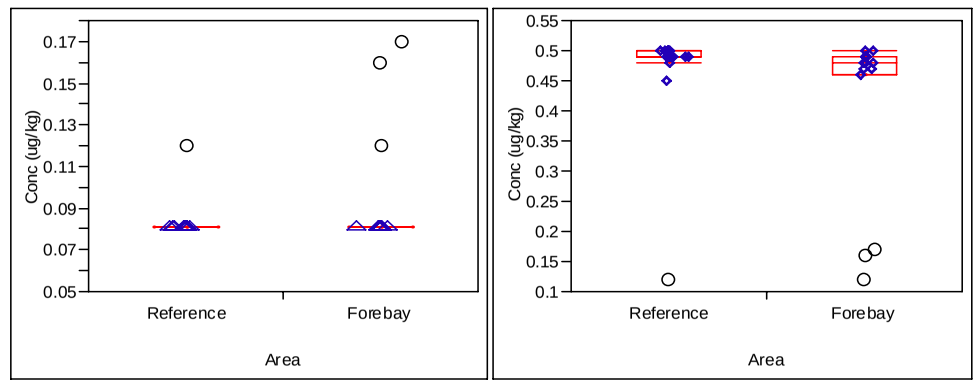
FLUORENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

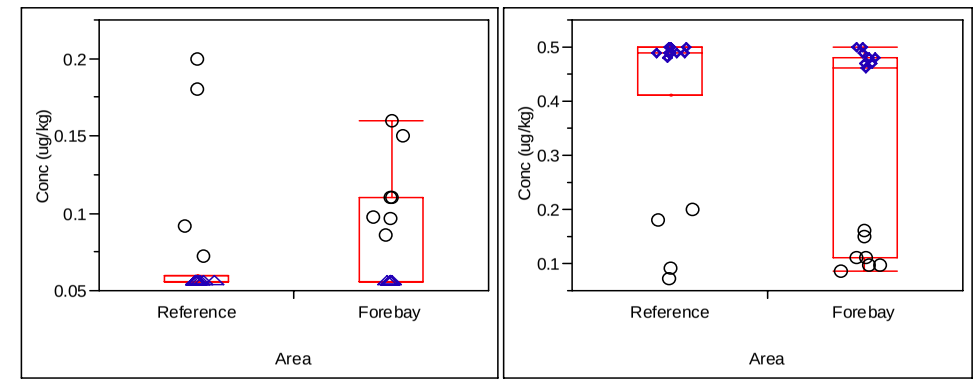
BENZO(A)PYRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

BENZO(K)FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN CRAYFISH TISSUE

DRAWING NUMBER: FIG L-4c
CAD FILE NUMBER: FIG L-4c
SHEET: OF
REV.

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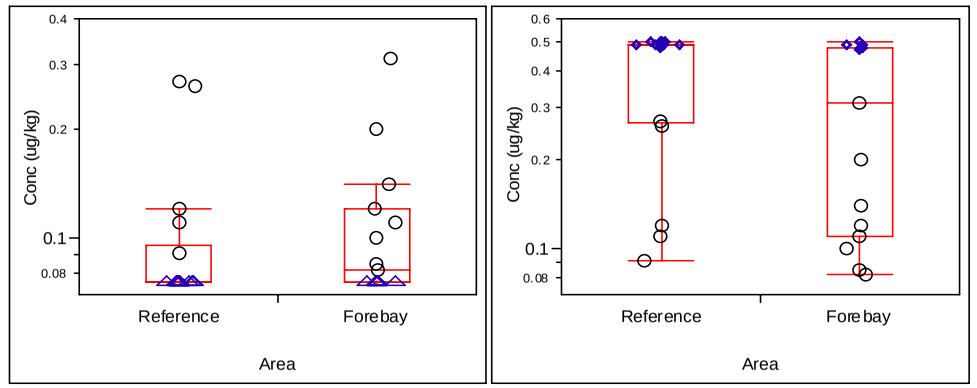
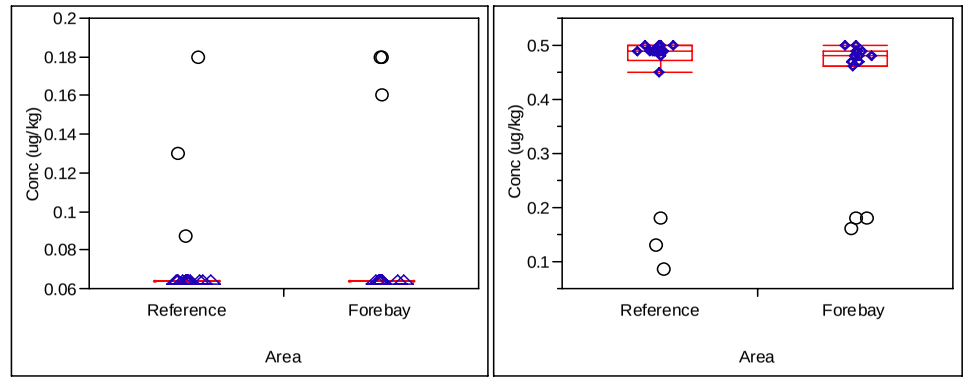
CHRYSENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

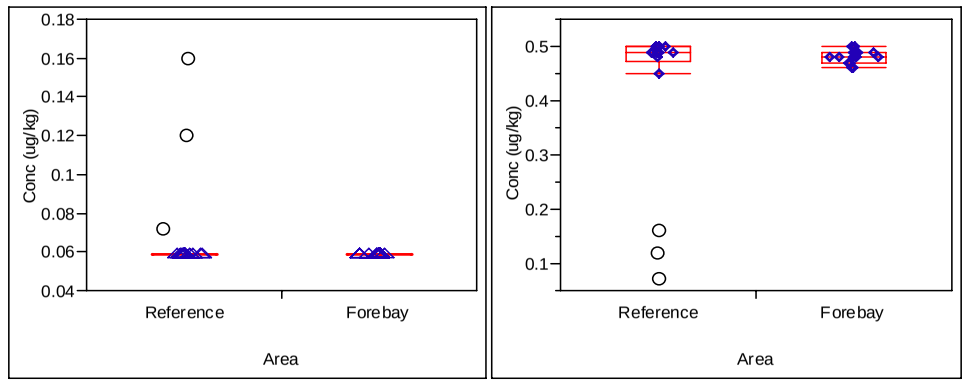
INDENO(1,2,3-CD)PYRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

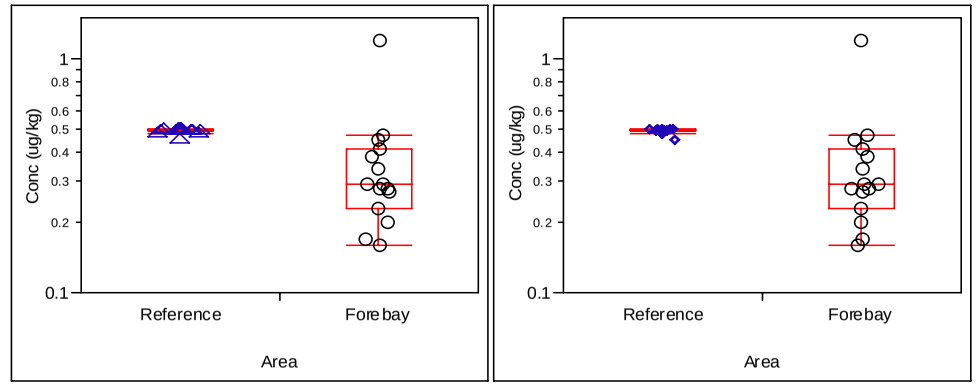
DIBENZ(A,H)ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

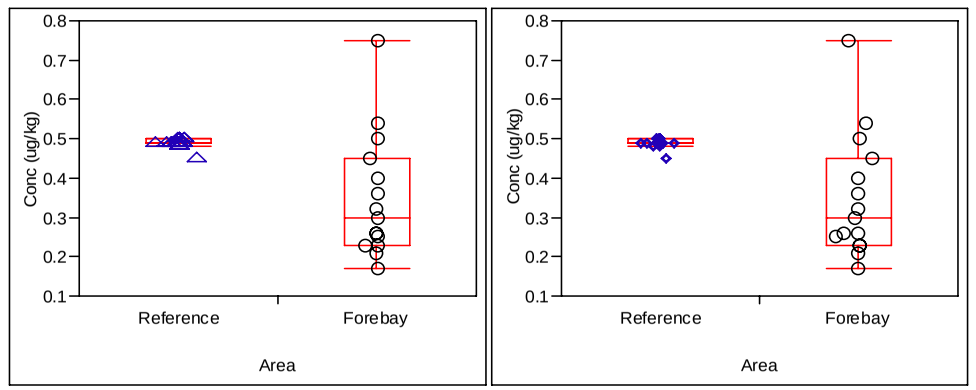
PYRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
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	CHECKED BY: LSM	DATE: NOV 2010

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PAHs IN CRAYFISH TISSUE

DRAWING NUMBER:	
FIG L-4d	
CAD FILE NUMBER:	
FIG L-4d	
SHEET: OF	REV.

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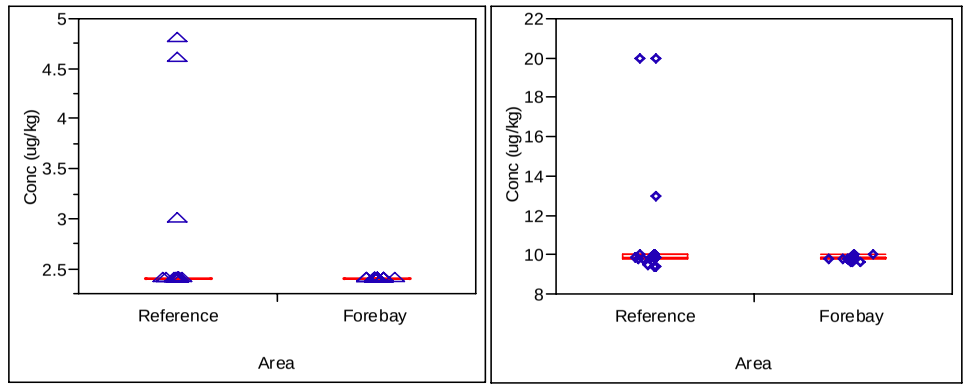
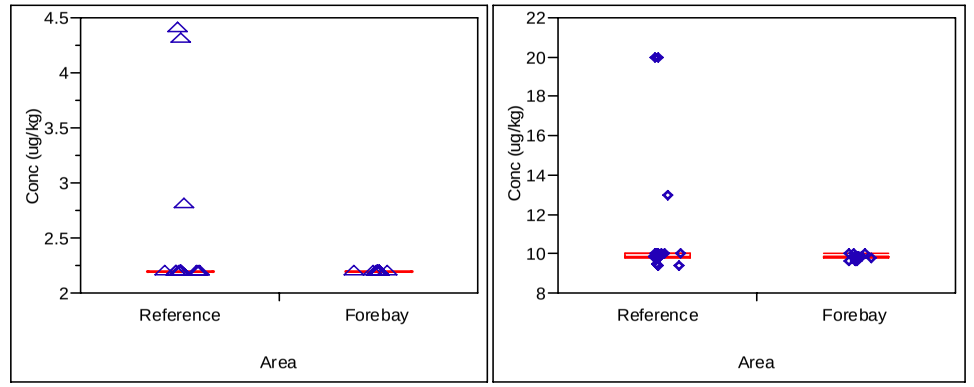
AROCLOR 1016



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

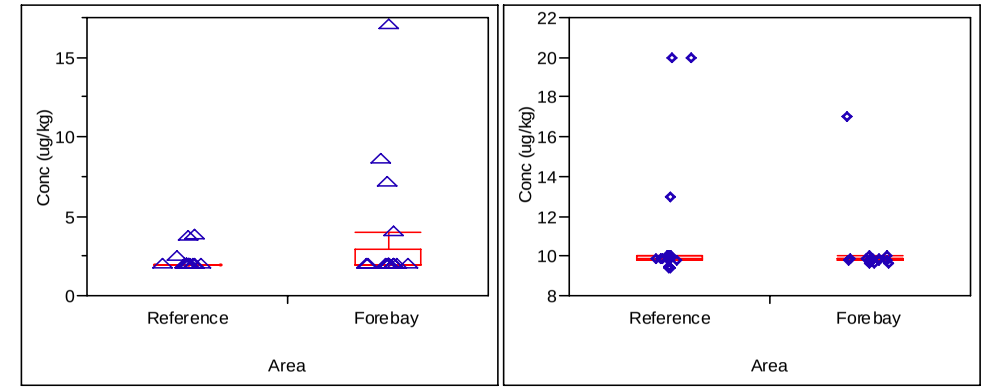
AROCLOR 1242



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

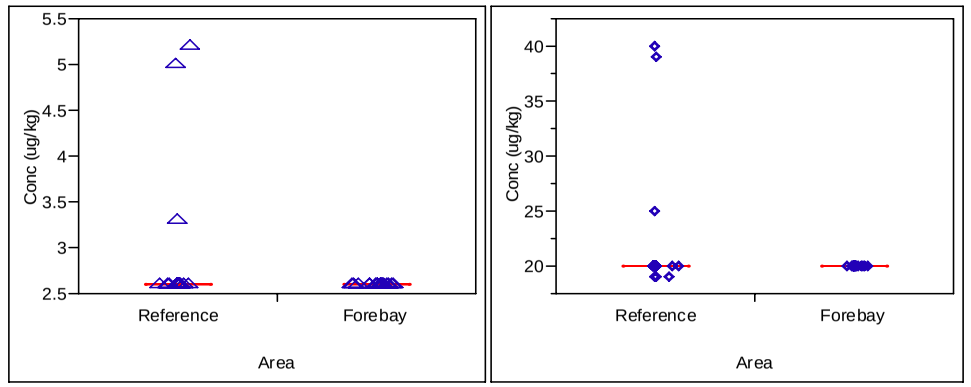
AROCLOR 1260



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

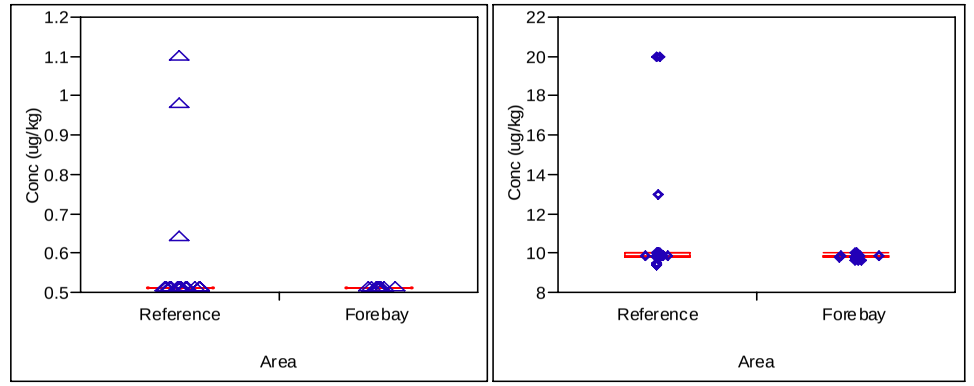
AROCLOR 1221



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

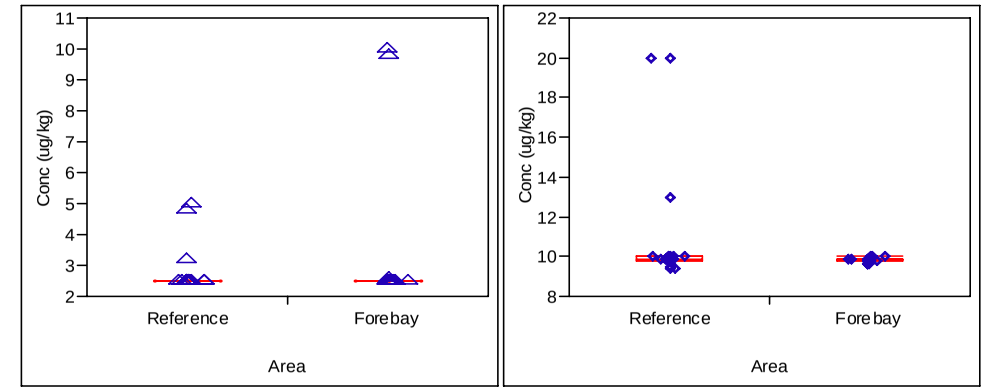
AROCLOR 1248



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

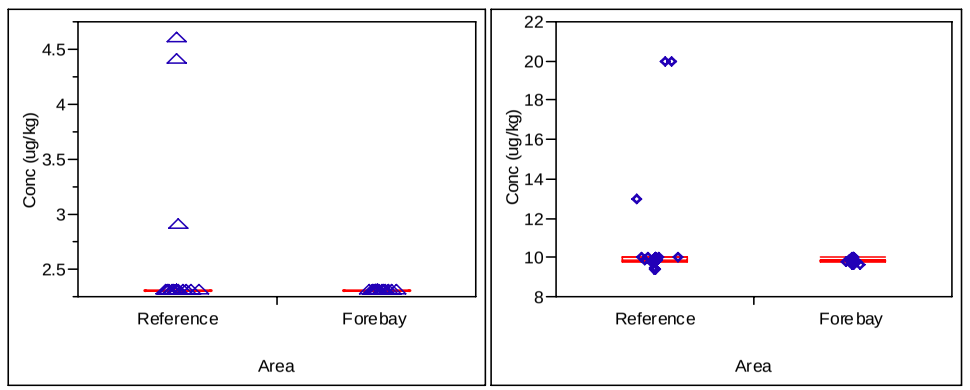
AROCLOR 1262



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

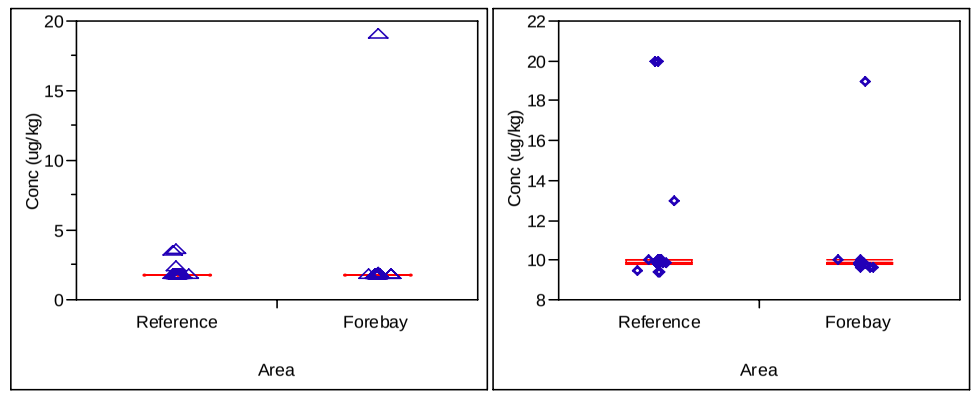
AROCLOR 1232



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

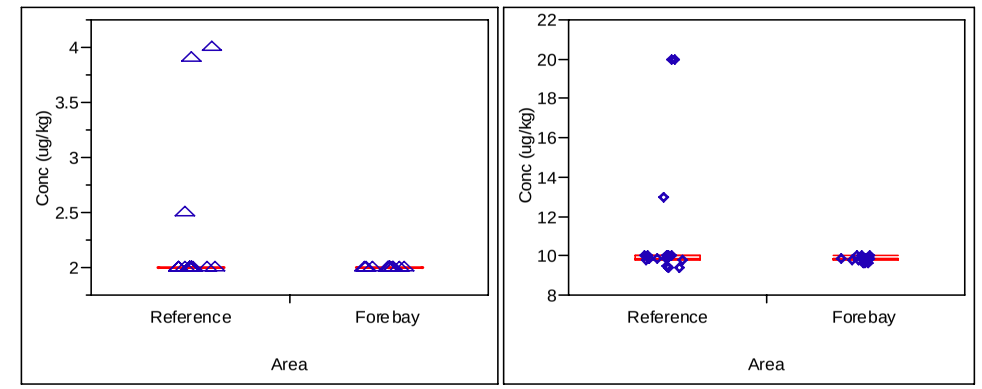
AROCLOR 1254



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

AROCLOR 1268



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
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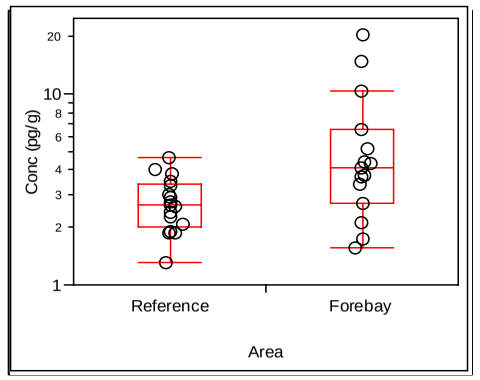
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PCB AROCLORS IN CRAYFISH TISSUE

DRAWING NUMBER: FIG L-4e
CAD FILE NUMBER: FIG L-4e
SHEET: OF
REV.

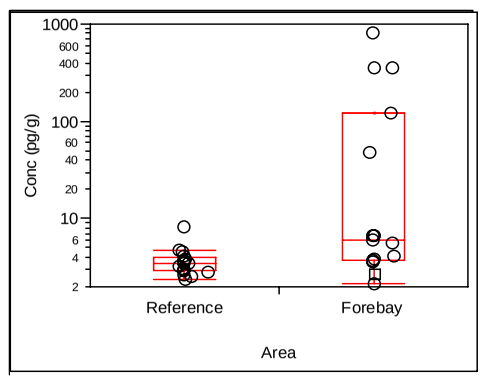
O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-4e PCB Aroclors in Crayfish Tissue.dwg Nov 17, 2010 - 8:41am

PCB 77



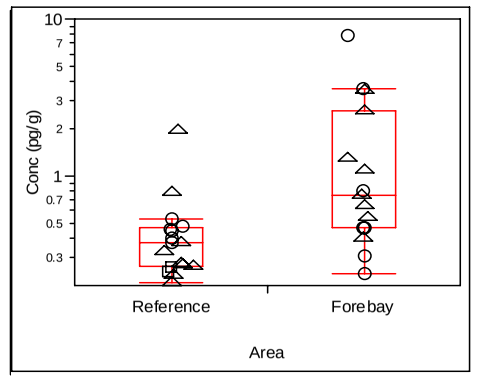
FOREBAY IS STATISTICALLY HIGHER

PCB 114



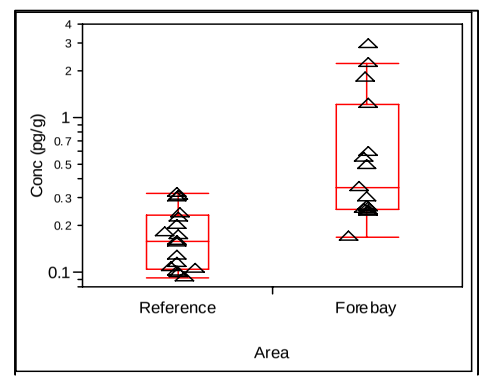
FOREBAY IS STATISTICALLY HIGHER

PCB 126



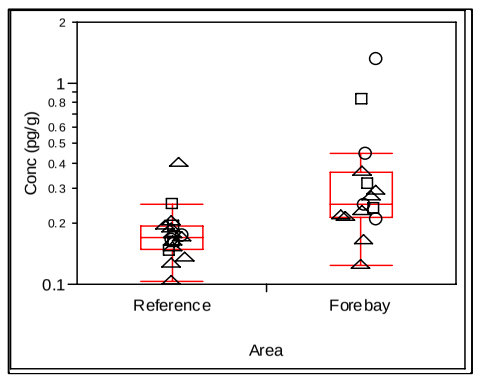
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 169



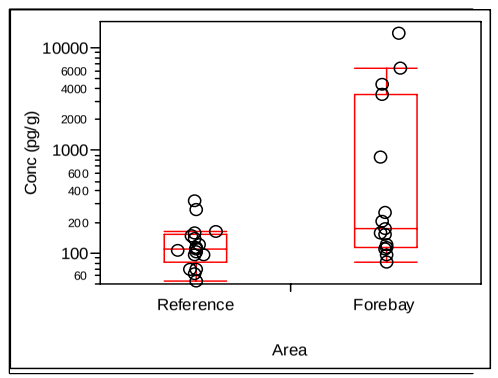
ALL SAMPLES ARE NON DETECTS

PCB 81



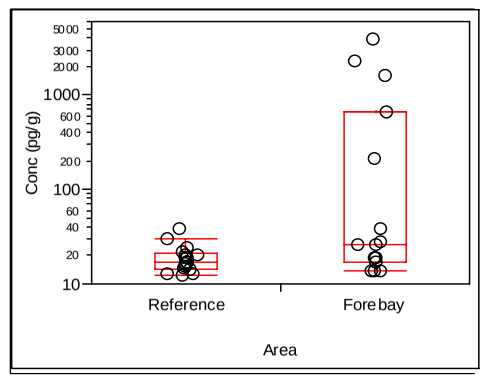
FOREBAY IS STATISTICALLY HIGHER

PCB 118



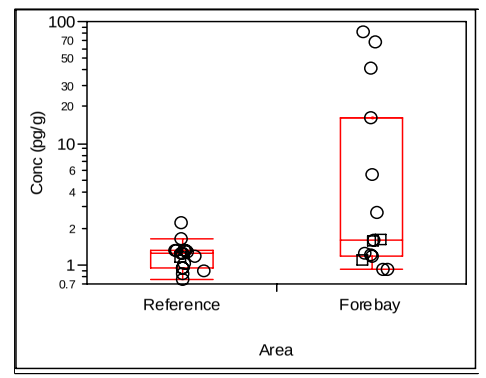
FOREBAY IS STATISTICALLY HIGHER

PCB 156+157



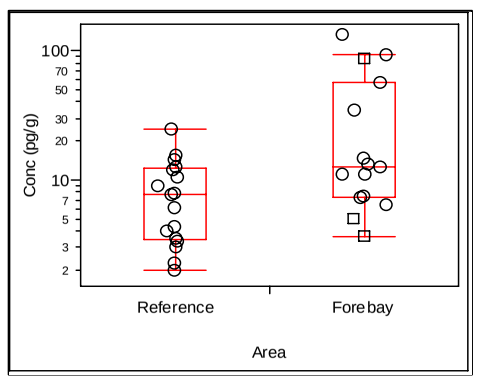
FOREBAY IS STATISTICALLY HIGHER

PCB 189



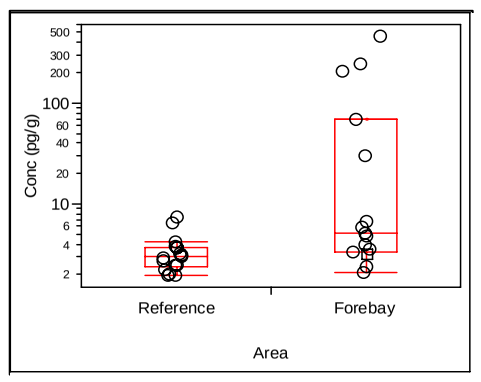
FOREBAY IS STATISTICALLY HIGHER

PCB 105



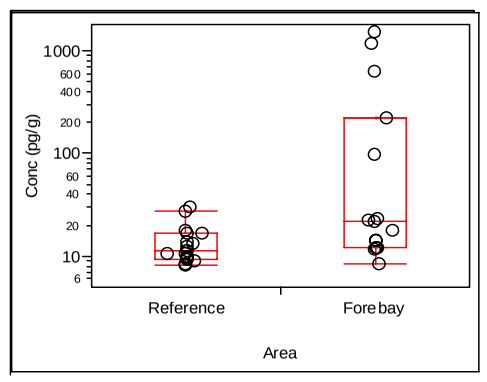
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 123



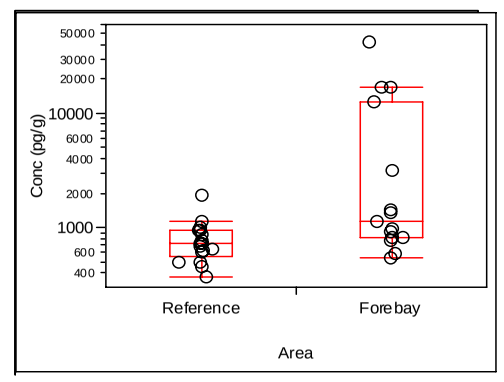
FOREBAY IS STATISTICALLY HIGHER

PCB 167



FOREBAY IS STATISTICALLY HIGHER

SUM 209 CONGENERS (KM-BASED)



FOREBAY IS STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Reported Detection Limit (RDL)
- □ EMPC Result, Censored at Reported Value

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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BRADFORD ISLAND

CASCADE LOCKS, OREGON

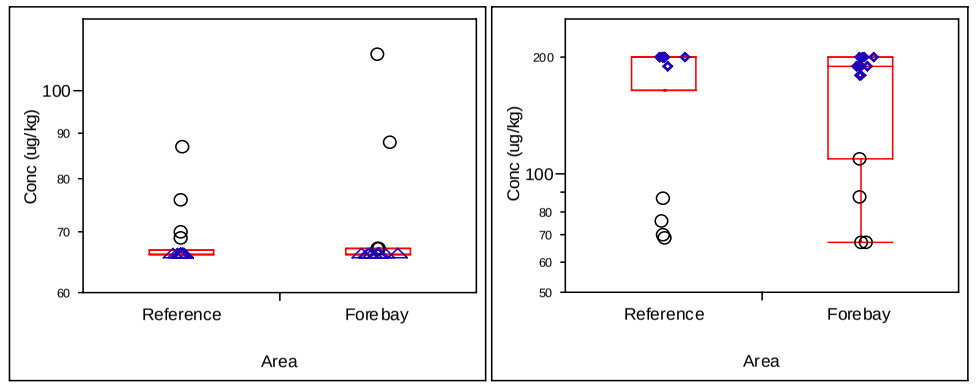
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PCB CONGENERS IN CRAYFISH TISSUE

DRAWING NUMBER: FIG L-4f	
CAD FILE NUMBER: FIG L-4f	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-4f PCB Congeners in Croyfish Tissue.dwg Nov 12, 2010 - 2:49pm

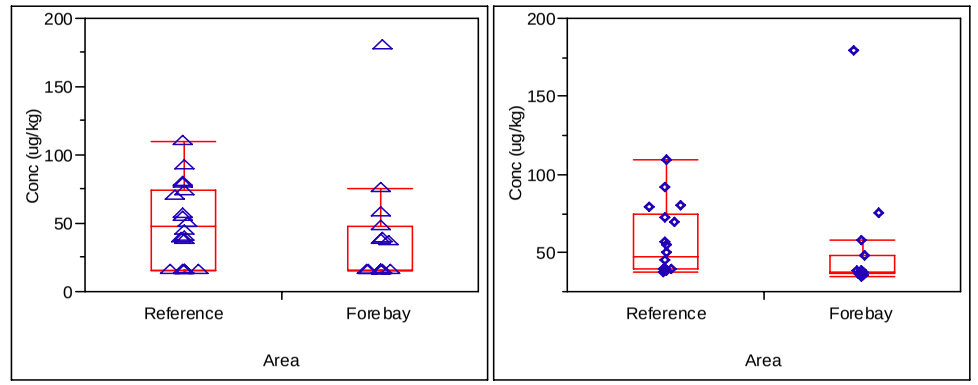
BIS(2-ETHYLHEXYL) PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

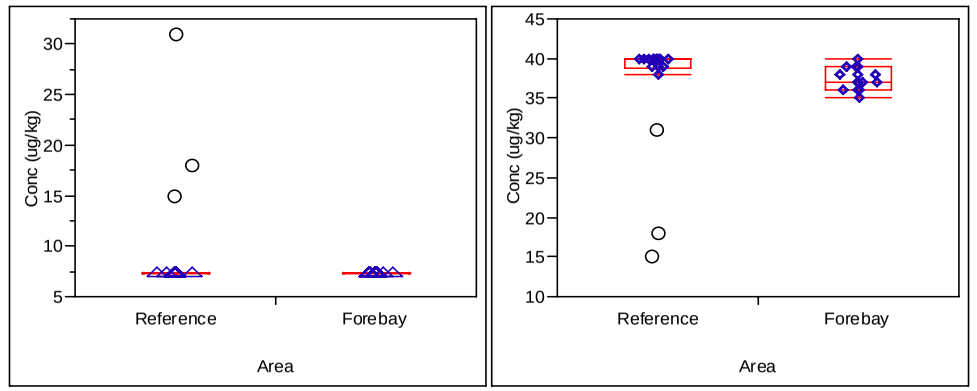
DI-N-BUTYL PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

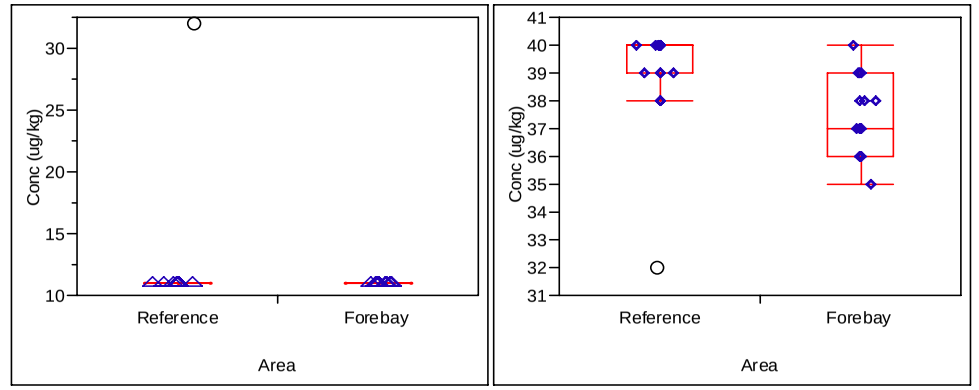
BUTYL BENZYL PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

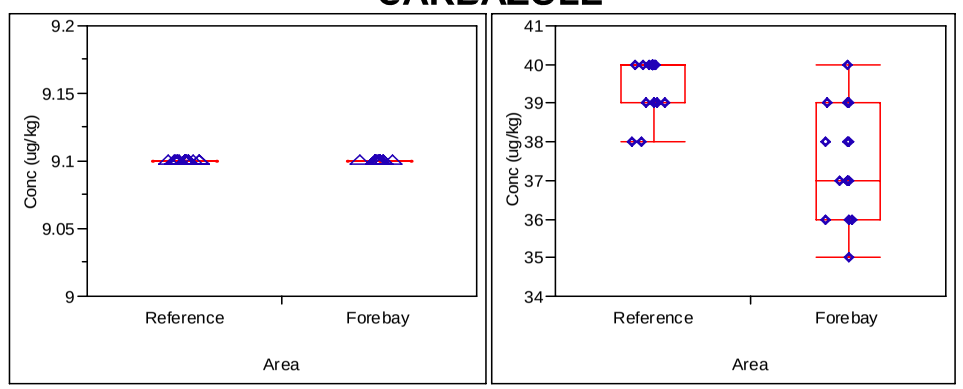
DI-N-OCTYL PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

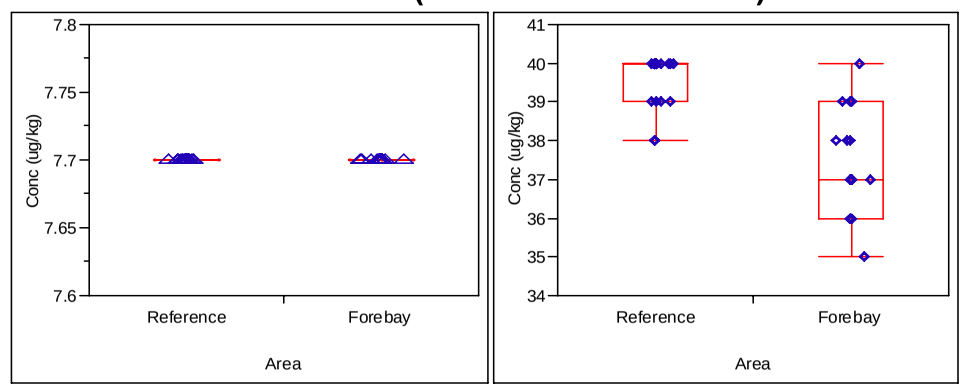
CARBAZOLE



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

P-CRESOL (4-METHYLPHENOL)



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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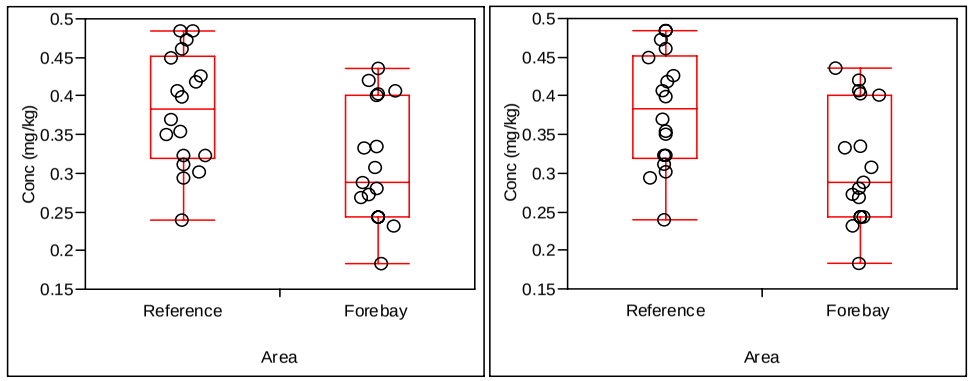
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
SVOCs IN CRAYFISH TISSUE

DRAWING NUMBER:	
FIG L-4g	
CAD FILE NUMBER:	
FIG L-4g	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-4g SVOCs in Crayfish Tissue.dwg Nov 17, 2010 - 8:42am

ARSENIC

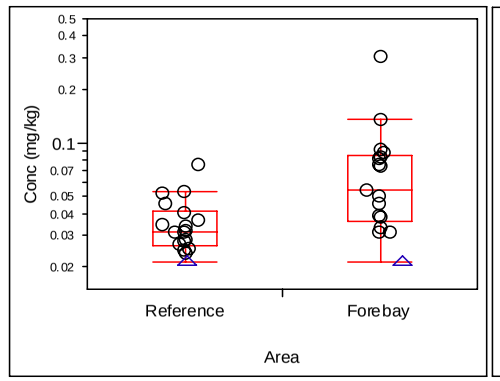


CENSORED AT MDL

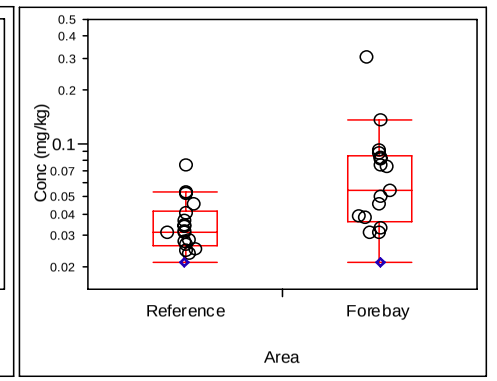
CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEAD



CENSORED AT MDL



CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

CADMIUM

CENSORED AT MDL

CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

MERCURY

CENSORED AT MDL

CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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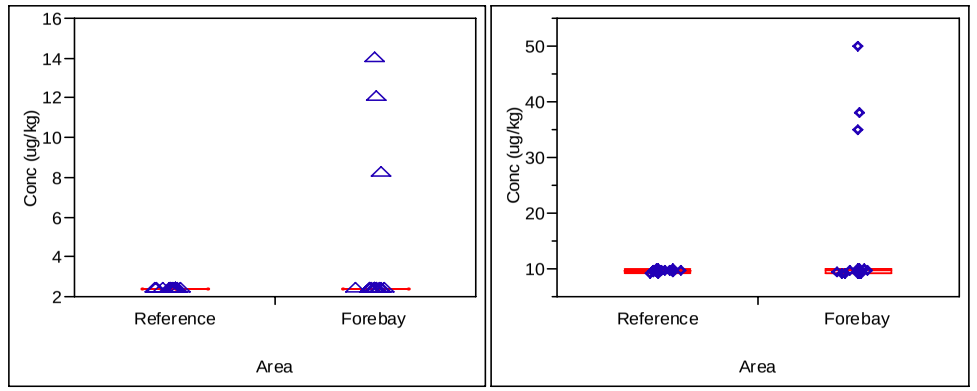
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN SCULPIN TISSUE

DRAWING NUMBER:	
FIG L-5a	
CAD FILE NUMBER:	
FIG L-5a	
SHEET: OF	REV.

O:\25692709 USACE\53-F00721730.00 Bradford\Ft Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-5a Metals in Sculpin Tissue.dwg Nov 17, 2010 - 8:42am

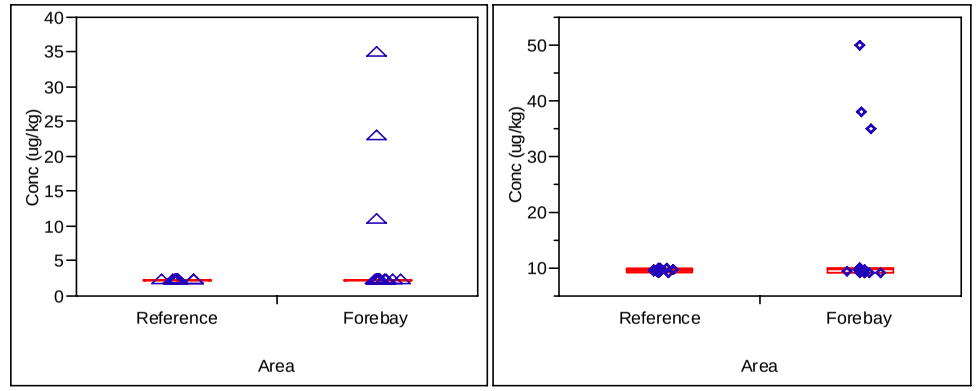
AROCLOR 1016



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

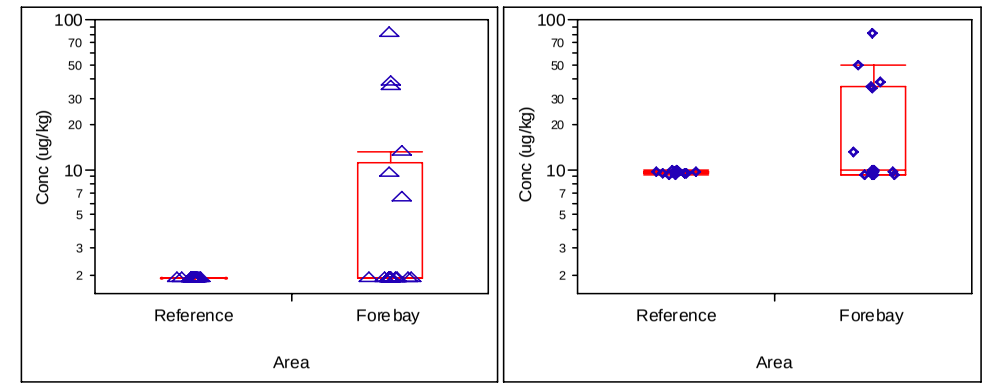
AROCLOR 1242



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

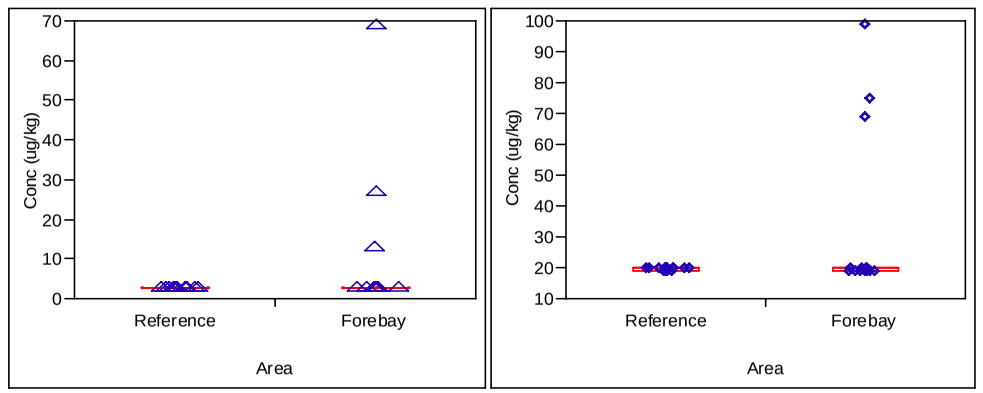
AROCLOR 1260



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

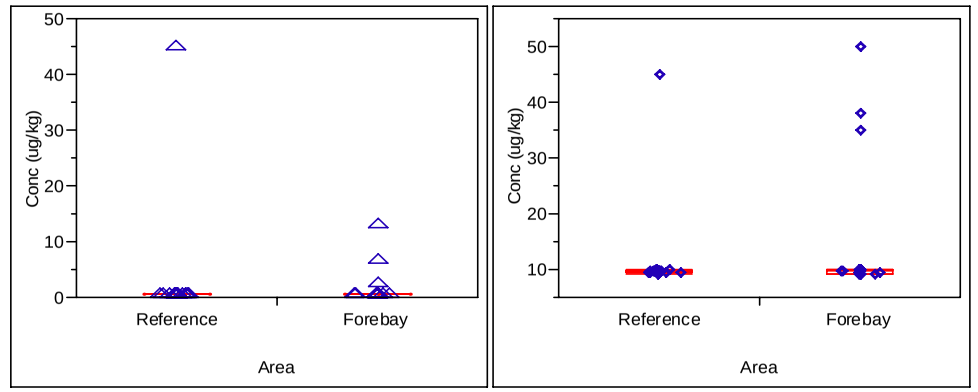
AROCLOR 1221



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

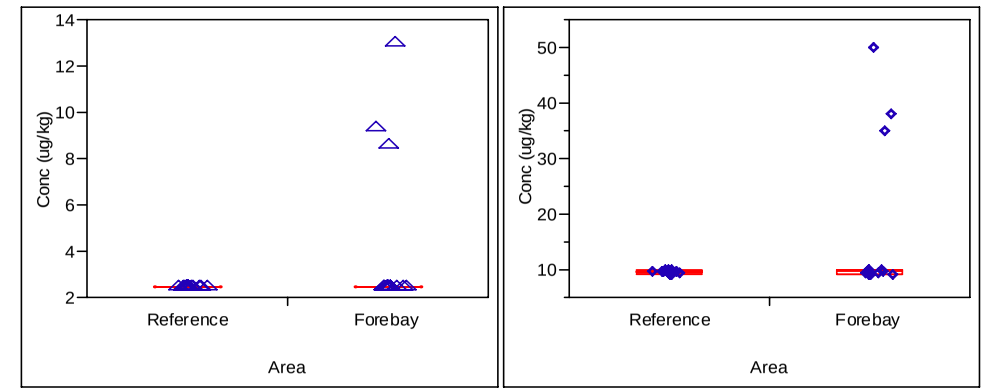
AROCLOR 1248



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

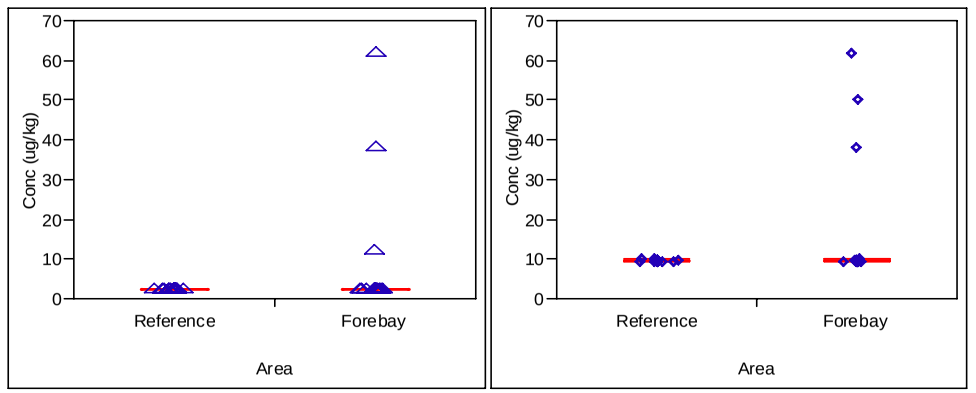
AROCLOR 1262



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

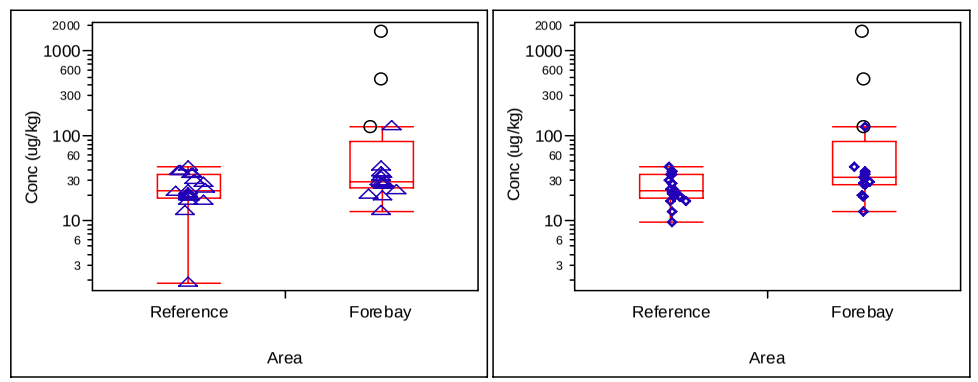
AROCLOR 1232



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

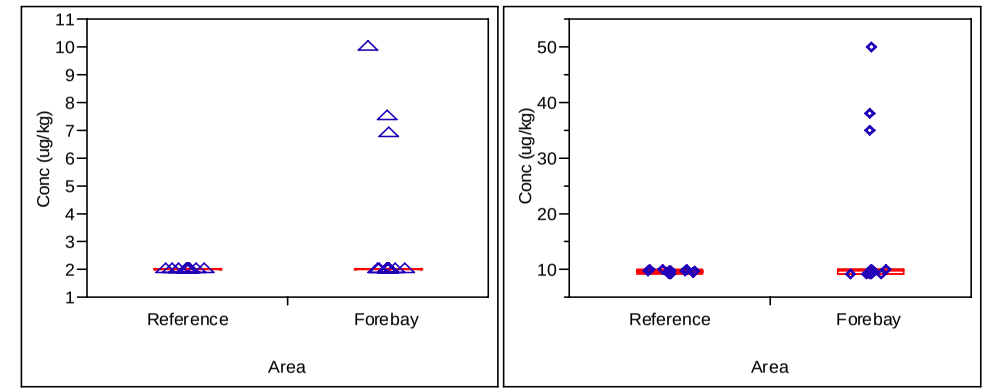
AROCLOR 1254



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

AROCLOR 1268



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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BRADFORD ISLAND

CASCADE LOCKS, OREGON

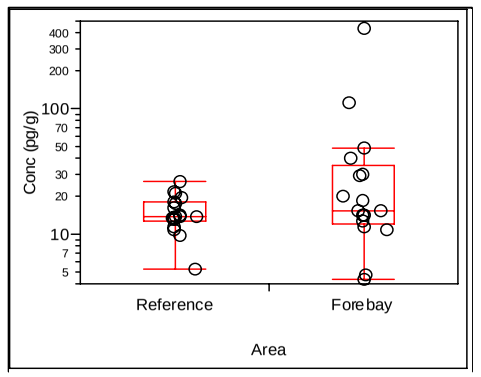
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PCB AROCLORS IN SCULPIN TISSUE

DRAWING NUMBER: FIG L-5b
CAD FILE NUMBER: FIG L-5b
SHEET: OF
REV.

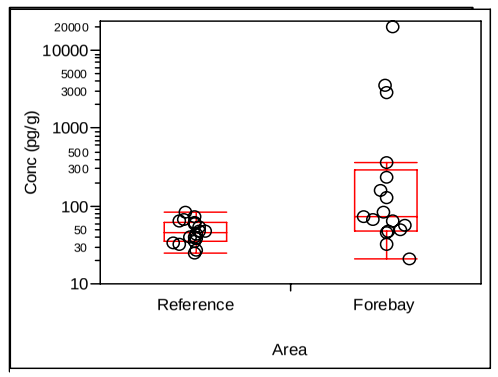
O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-5b PCB Aroclors in Sculpin Tissue.dwg Nov 17, 2010 - 8:43am

PCB 77



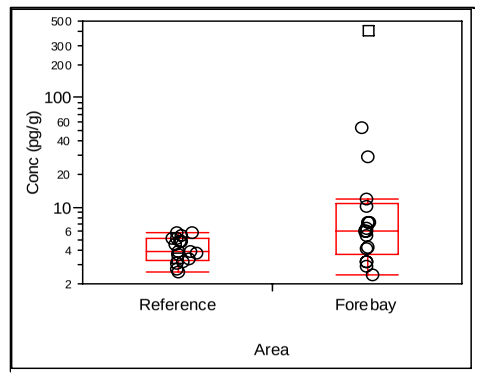
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 114



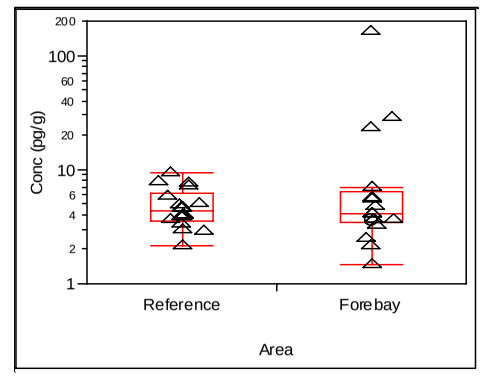
FOREBAY IS STATISTICALLY HIGHER

PCB 126



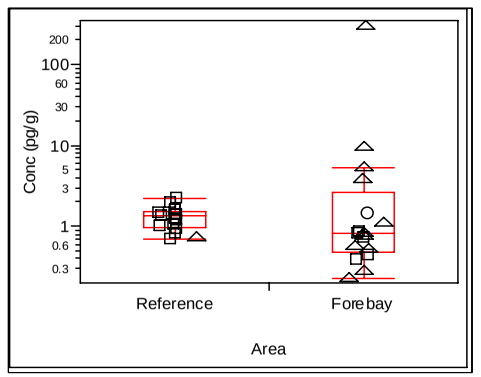
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 169



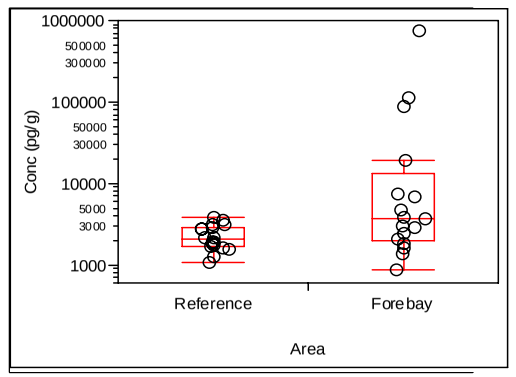
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 81



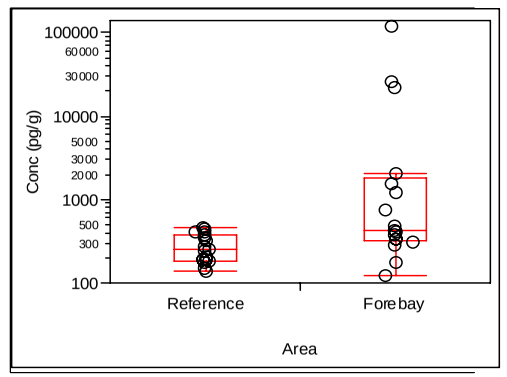
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 118



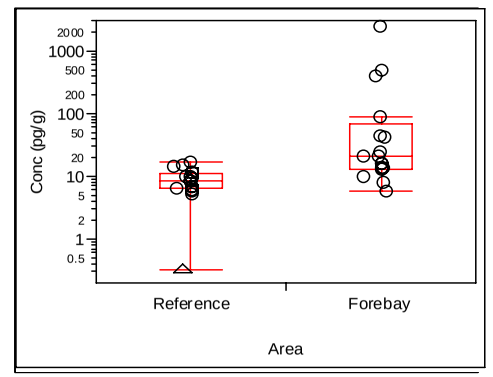
FOREBAY IS STATISTICALLY HIGHER

PCB 156+157



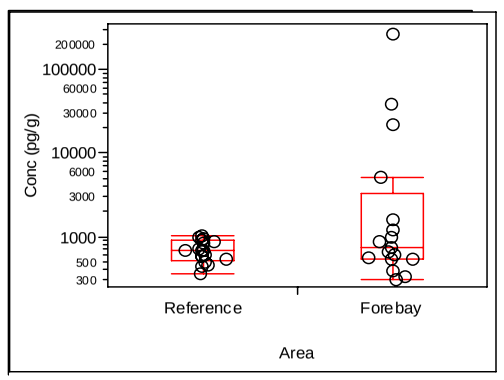
FOREBAY IS STATISTICALLY HIGHER

PCB 189



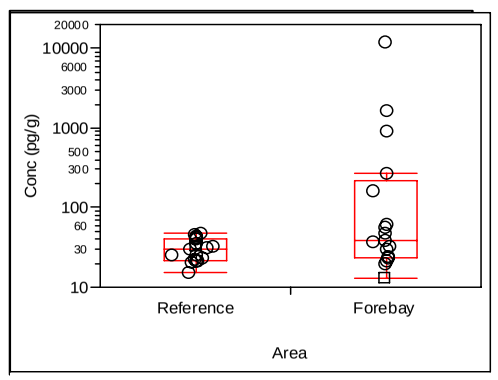
FOREBAY IS STATISTICALLY HIGHER

PCB 105



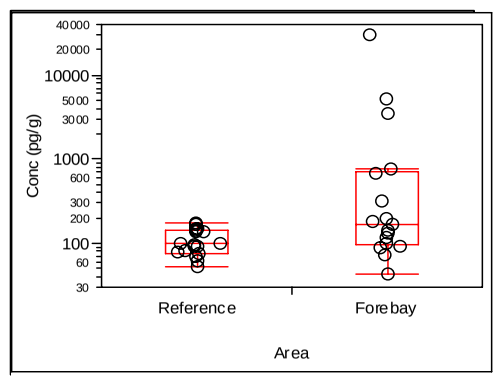
FOREBAY IS NOT STATISTICALLY HIGHER

PCB 123



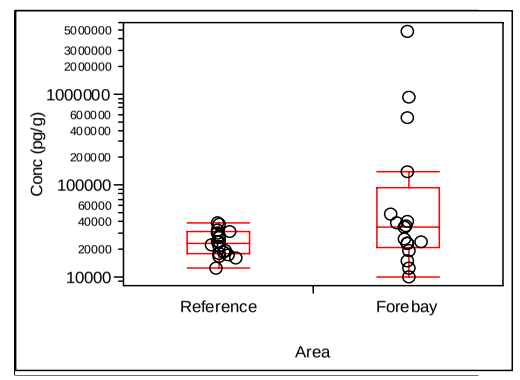
FOREBAY IS STATISTICALLY HIGHER

PCB 167



FOREBAY IS STATISTICALLY HIGHER

SUM 209 CONGENERS (KM-BASED)



FOREBAY IS STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- ◬ Non-Detect, Censored at Reported Detection Limit (RDL)
- □ EMPC Result, Censored at Reported Value

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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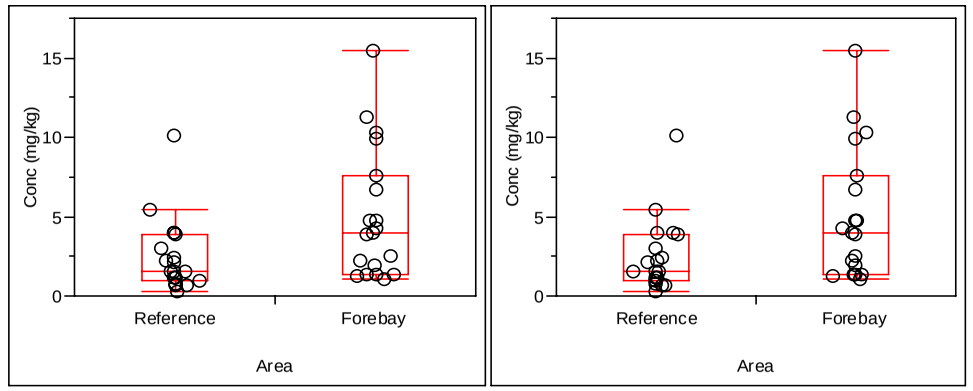
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PCB CONGENERS IN SCULPIN TISSUE

DRAWING NUMBER:	
FIG L-5c	
CAD FILE NUMBER:	
FIG L-5c	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-5c PCB Congeners in Sculpin Tissue.dwg Nov 12, 2010 - 2:50pm

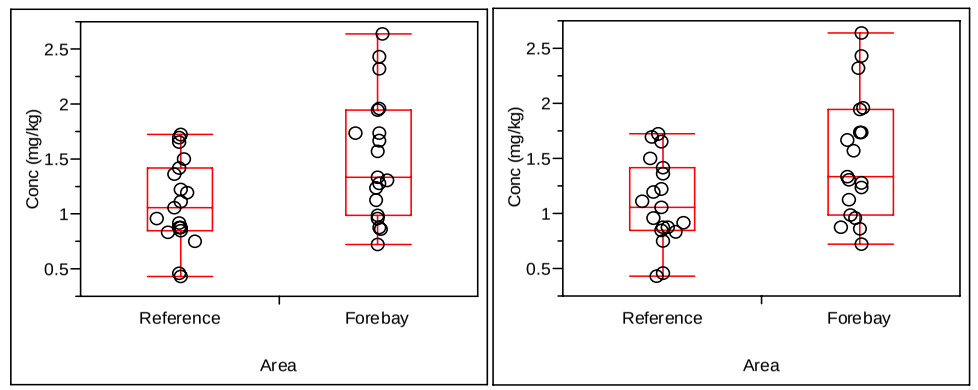
ALUMINUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

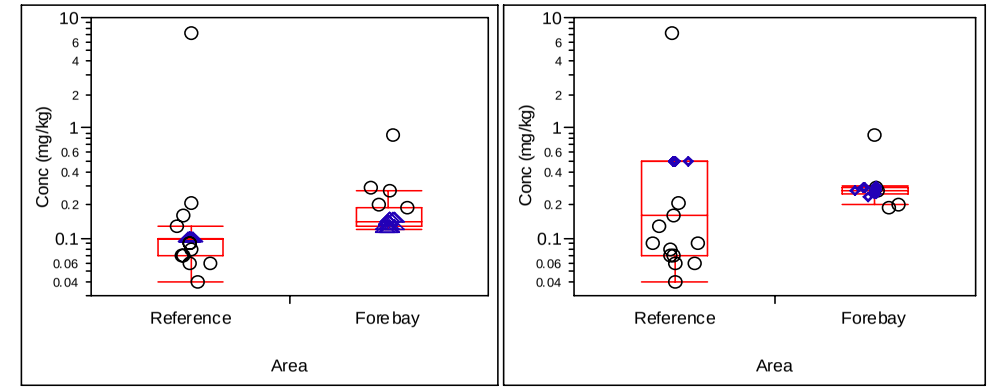
BARIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

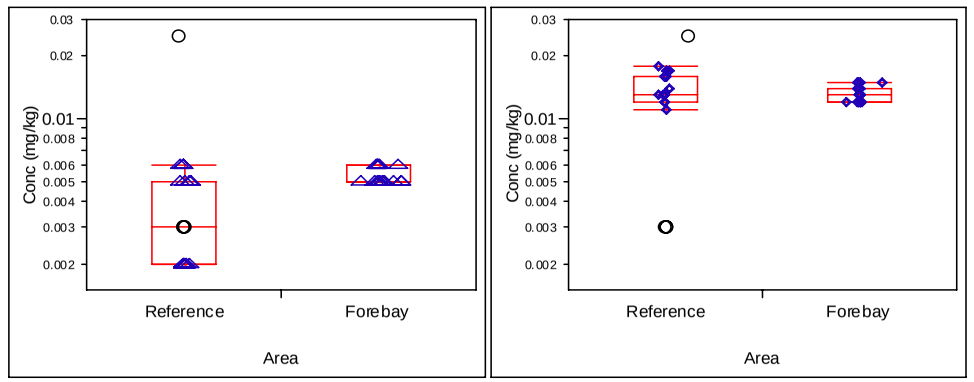
CHROMIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

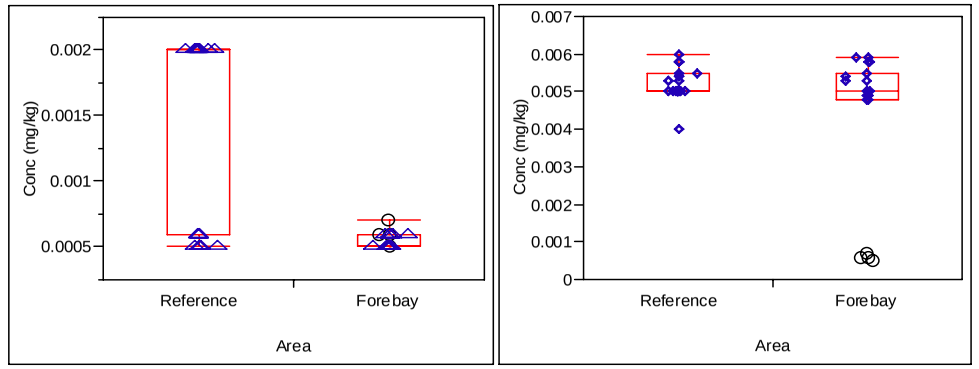
ANTIMONY



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

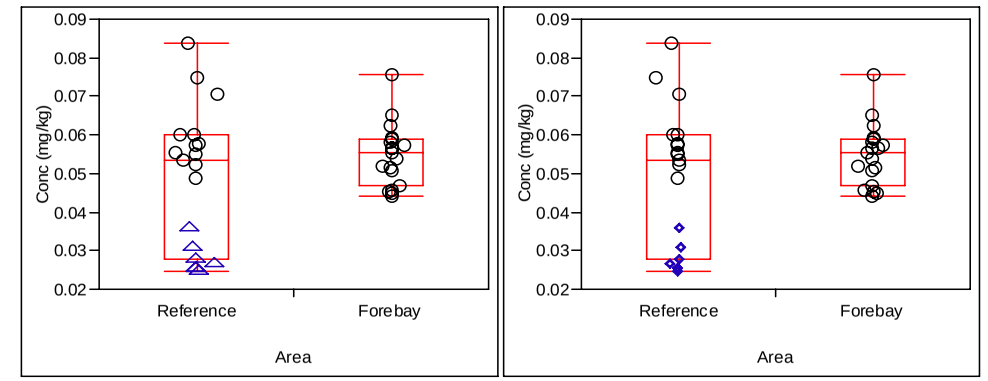
BERYLLIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

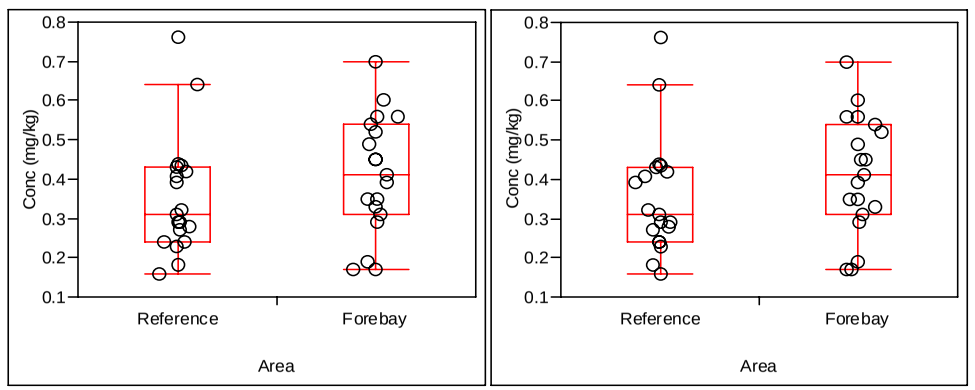
COBALT



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

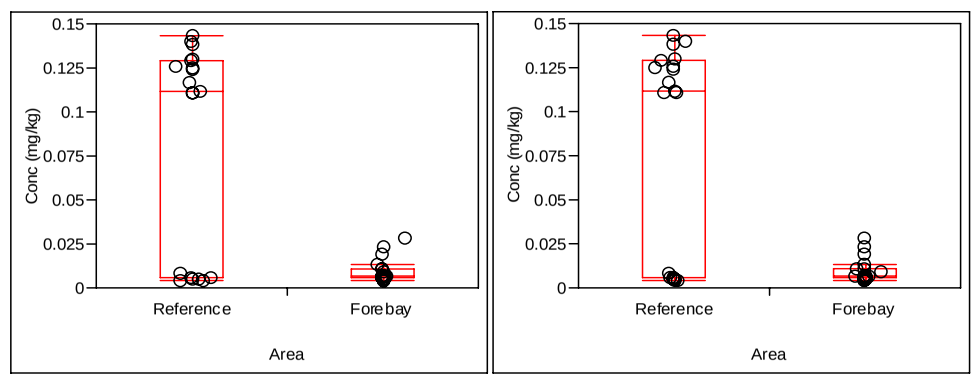
ARSENIC



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

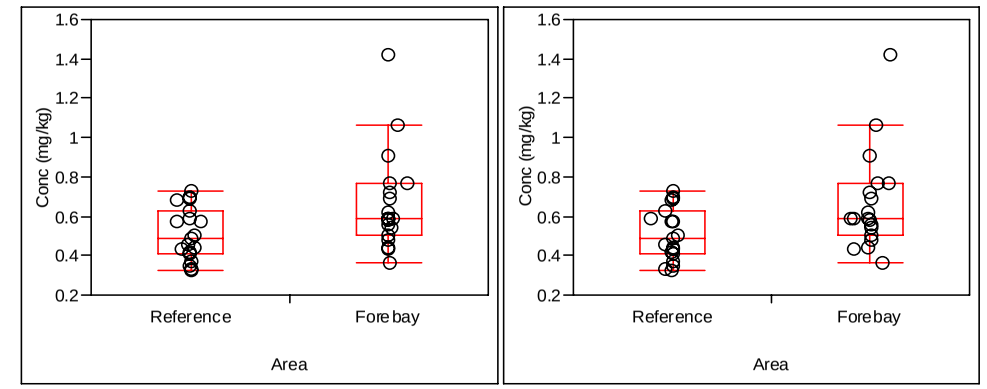
CADMIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

COPPER



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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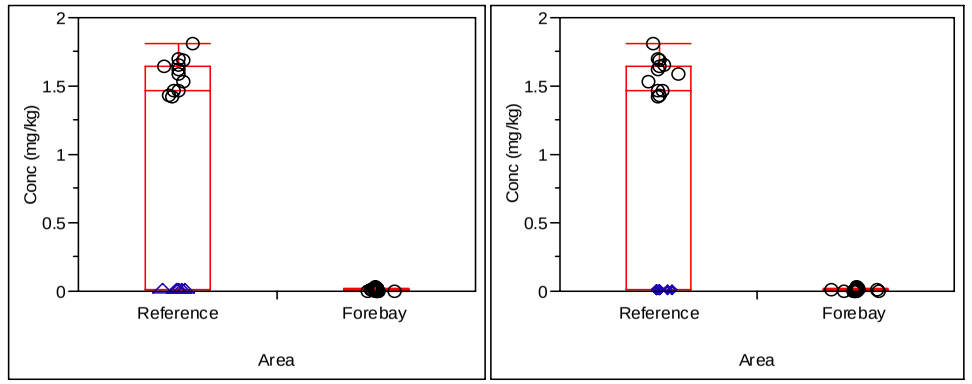
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN SMALLMOUTH BASS TISSUE

DRAWING NUMBER: FIG L-6a
CAD FILE NUMBER: FIG L-6a
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-6a Metals in Smallmouth Bass Tissue.dwg Nov 17, 2010 - 8:44am

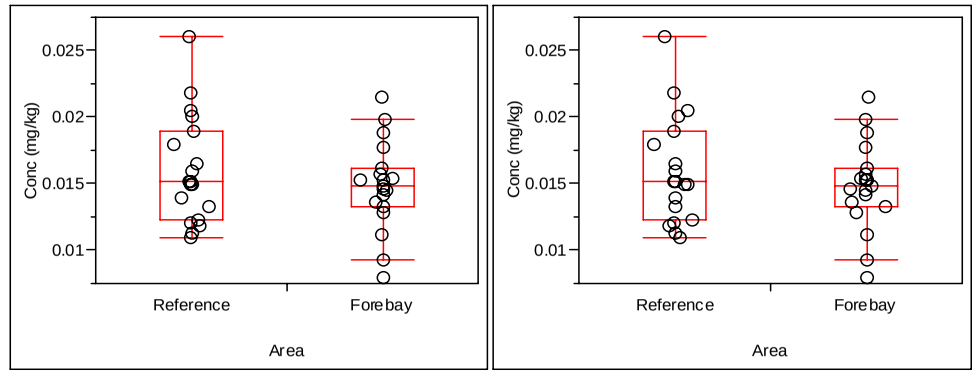
LEAD



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

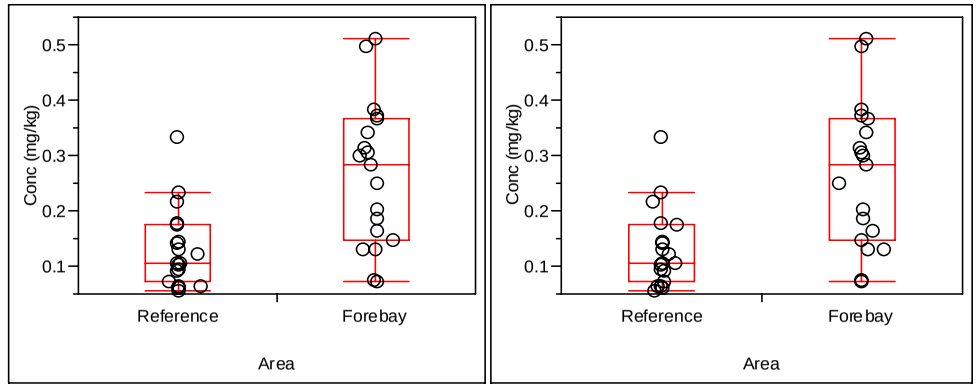
THALLIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

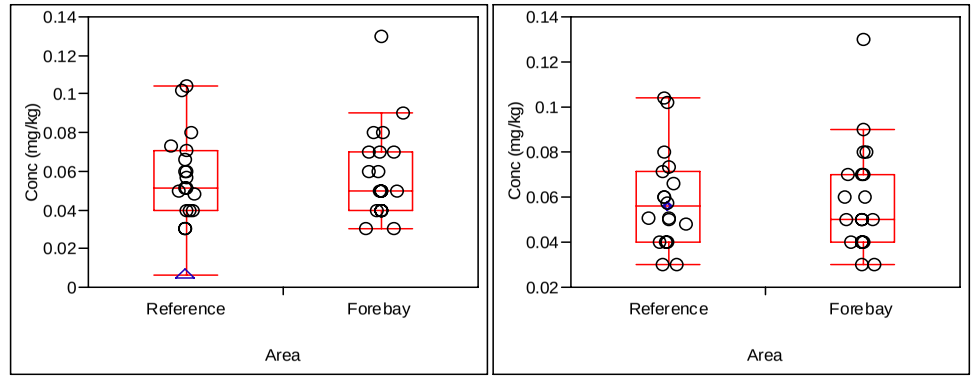
MERCURY



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

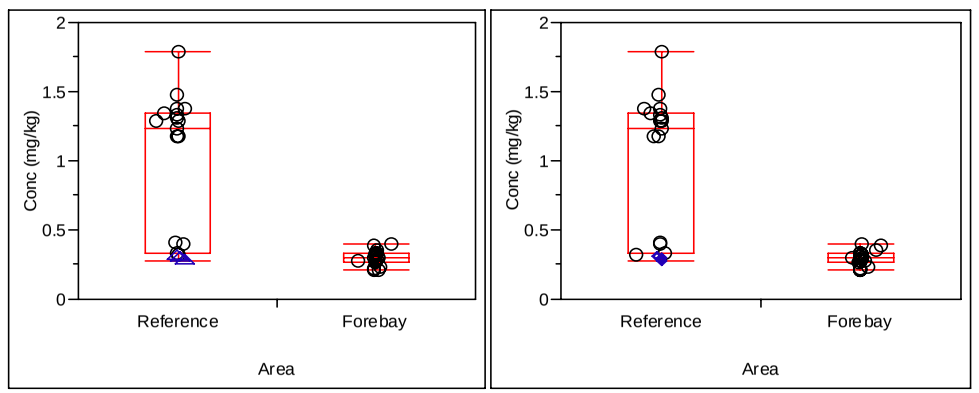
VANADIUM



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

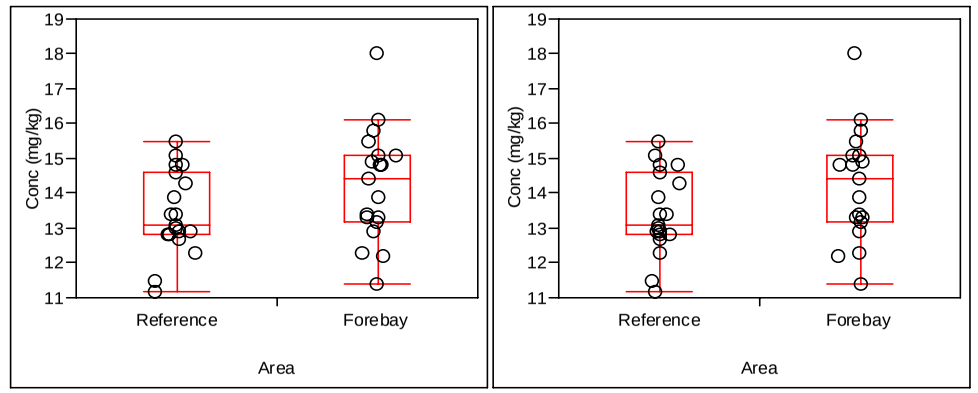
NICKEL



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

ZINC



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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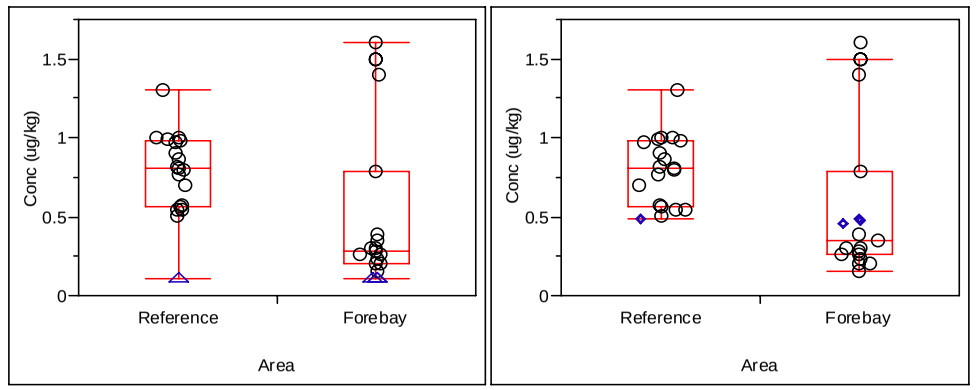
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN SMALLMOUTH BASS TISSUE

DRAWING NUMBER: FIG L-6b
CAD FILE NUMBER: FIG L-6b
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-6b Metals in Smallmouth Bass Tissue.dwg Nov 17, 2010 - 8:44am

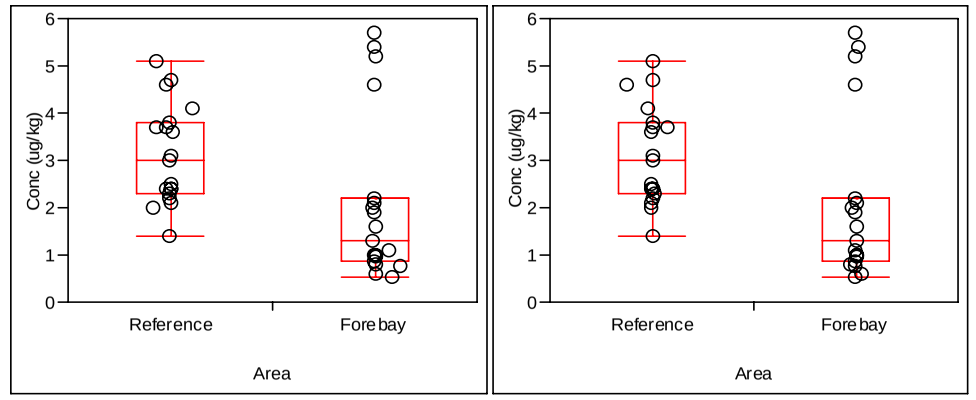
ACENAPHTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

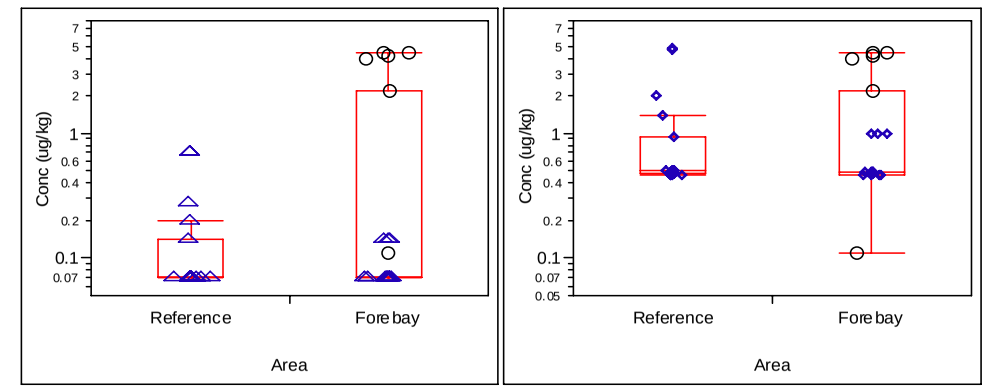
PHENANTHRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

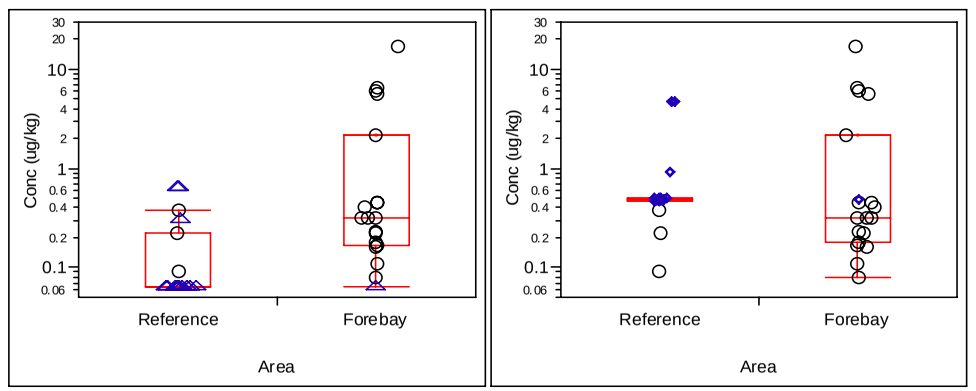
BENZO(B)FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

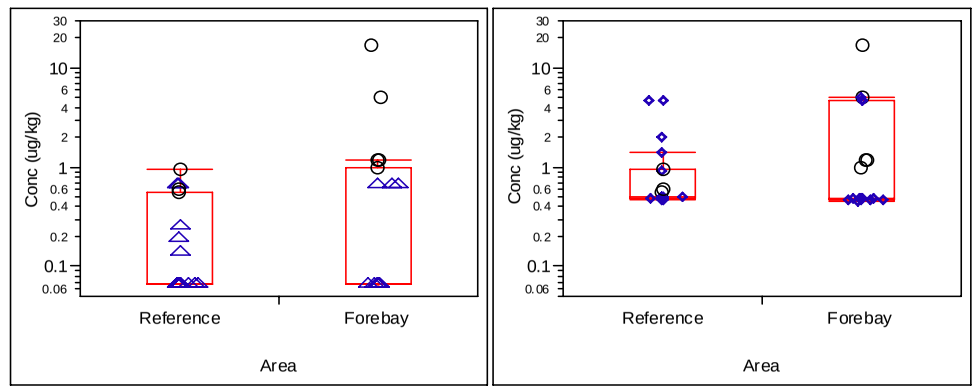
ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

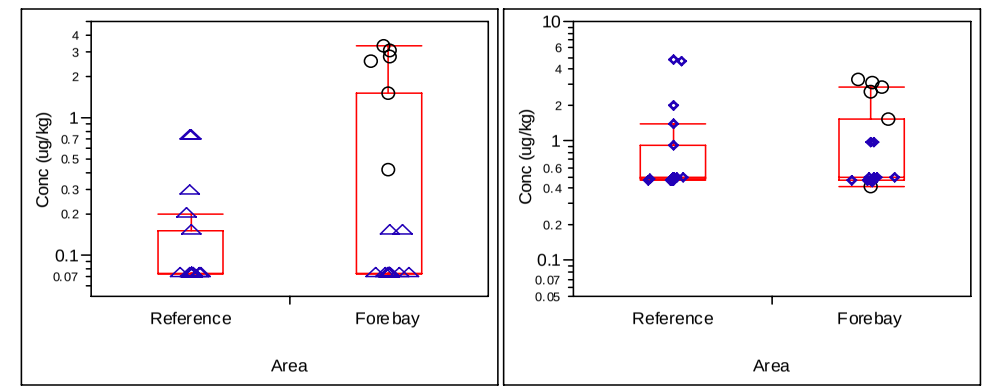
BENZO(A)ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

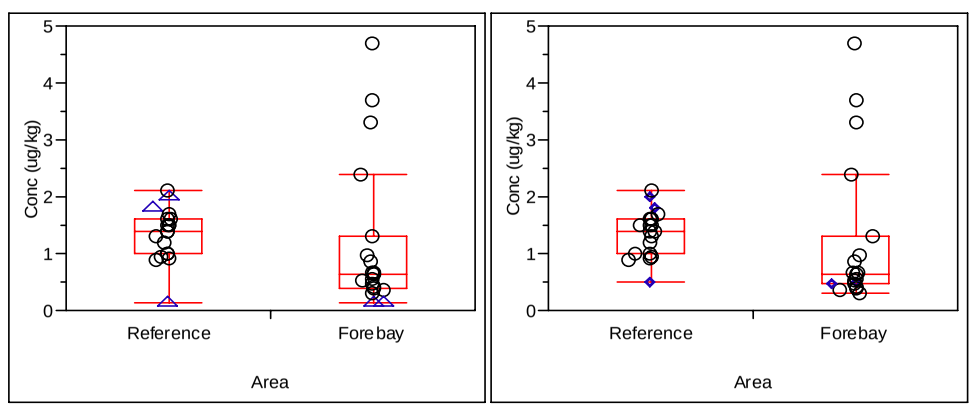
BENZO(G,H,I)PERYLENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

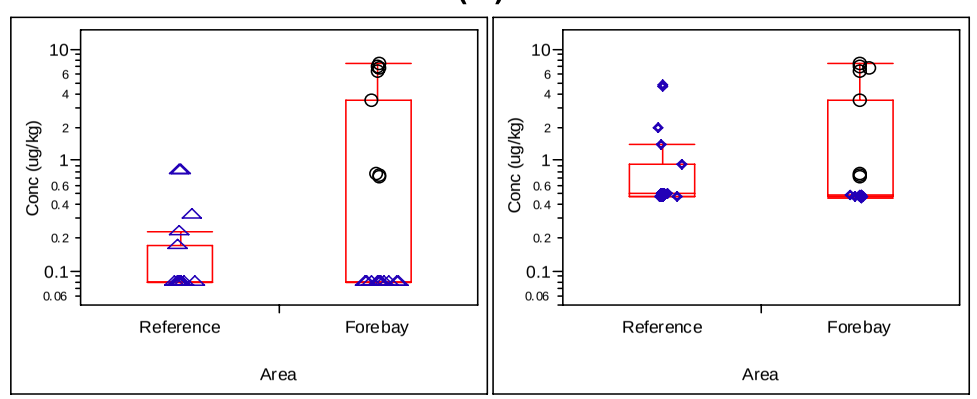
FLUORENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

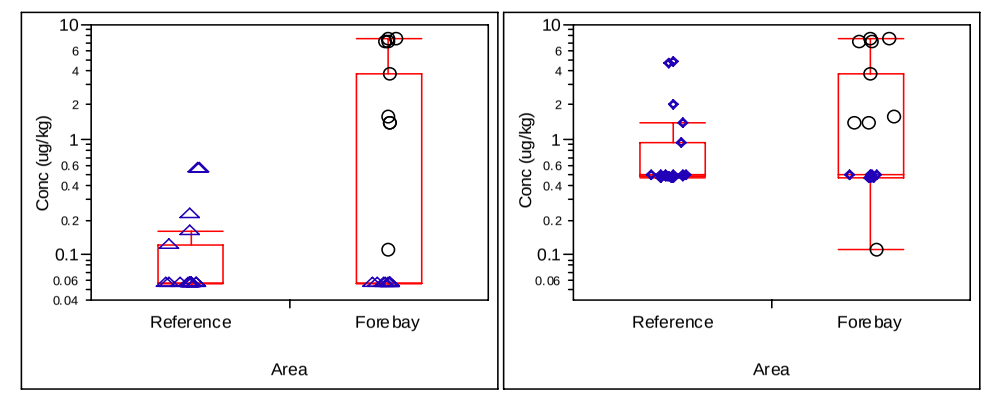
BENZO(A)PYRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

BENZO(K)FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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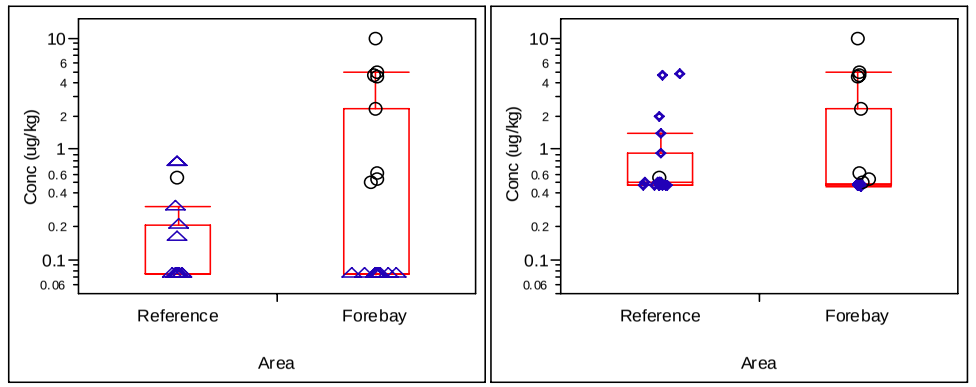
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN SMALLMOUTH BASS TISSUE

DRAWING NUMBER:	
FIG L-6c	
CAD FILE NUMBER:	
FIG L-6c	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-6c PAHs in Smallmouth Bass Tissue.dwg Nov 17, 2010 - 8:45am

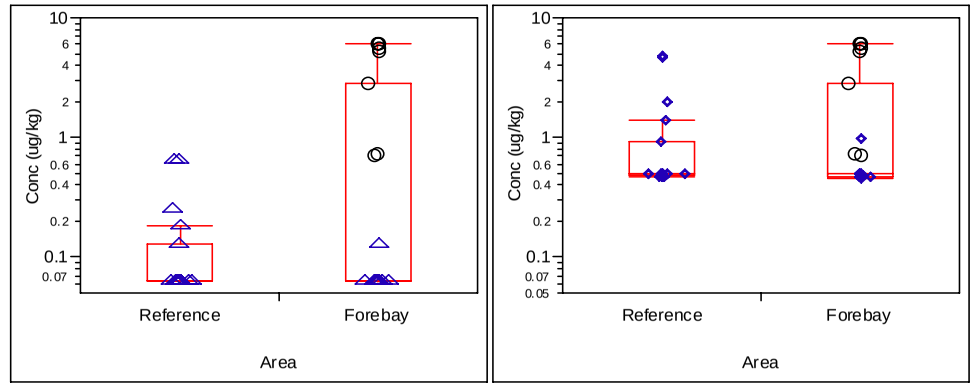
CHRYSENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

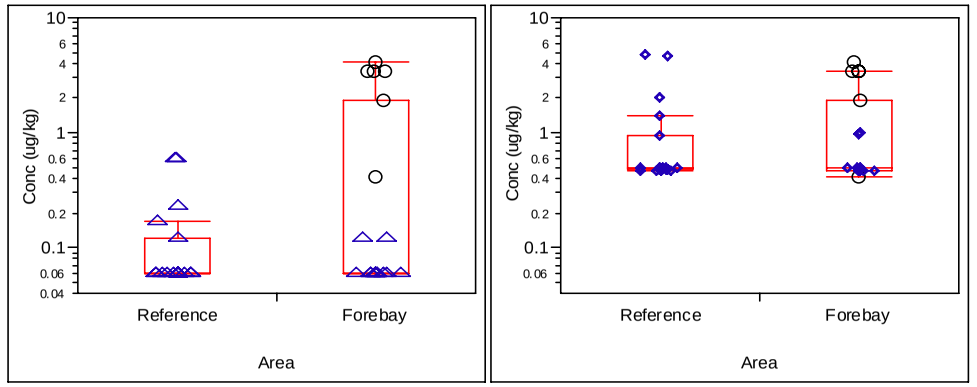
INDENO(1,2,3-CD)PYRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

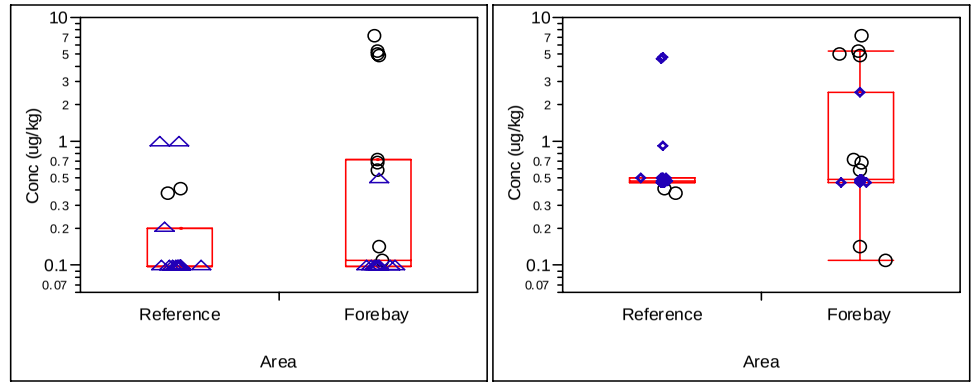
DIBENZ(A,H)ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

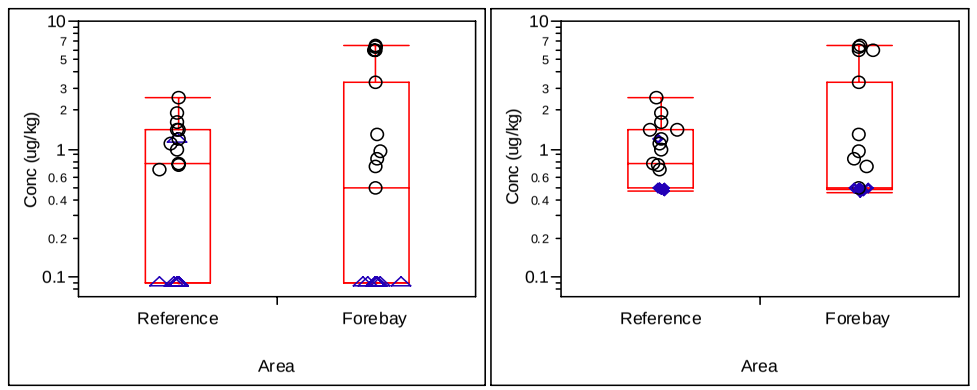
PYRENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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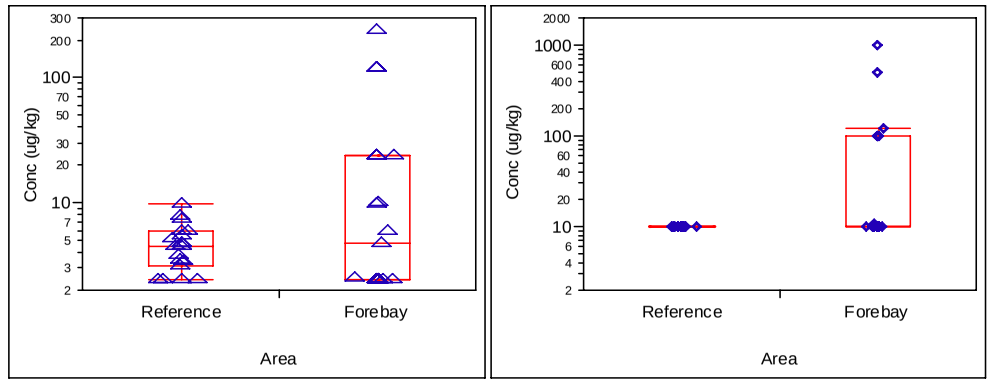
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN SMALLMOUTH BASS TISSUE

DRAWING NUMBER: FIG L-6d
CAD FILE NUMBER: FIG L-6d
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-6d PAHs in Smallmouth Bass Tissue.dwg Nov 17, 2010 - 8:45am

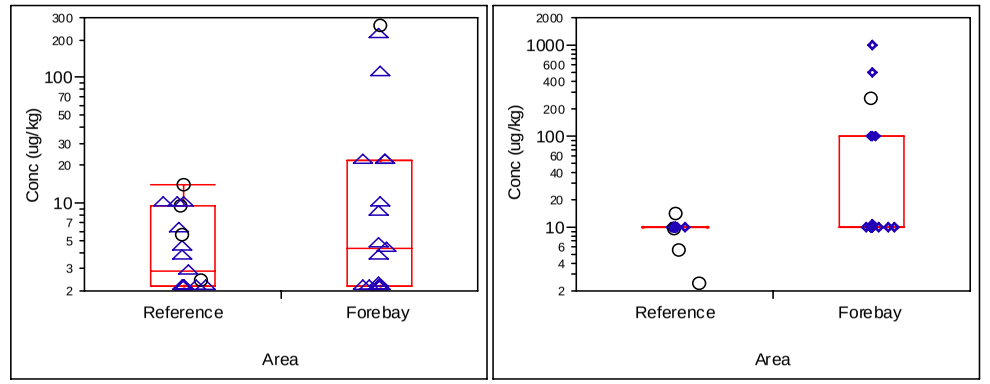
AROCLOR 1016



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

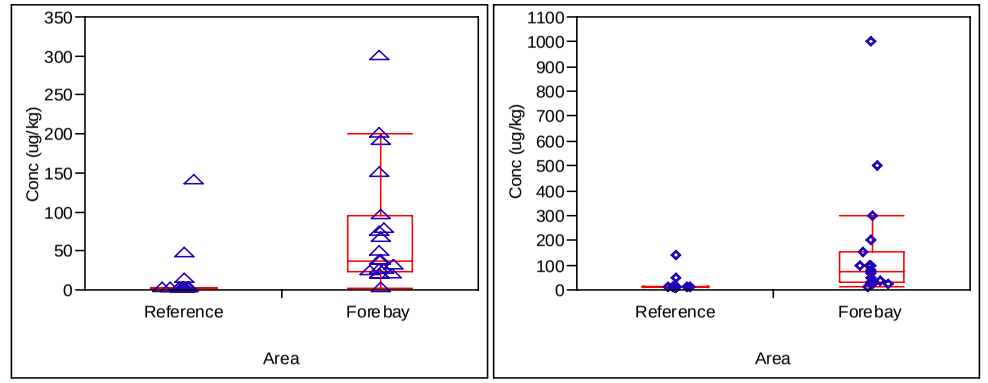
AROCLOR 1242



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

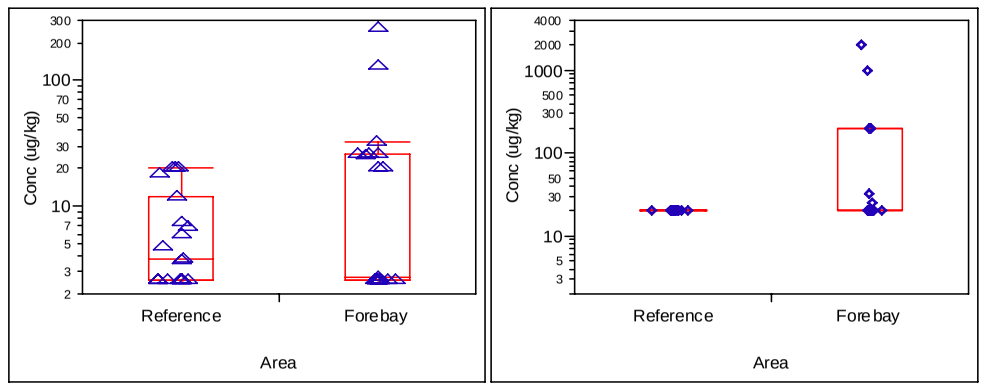
AROCLOR 1260



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

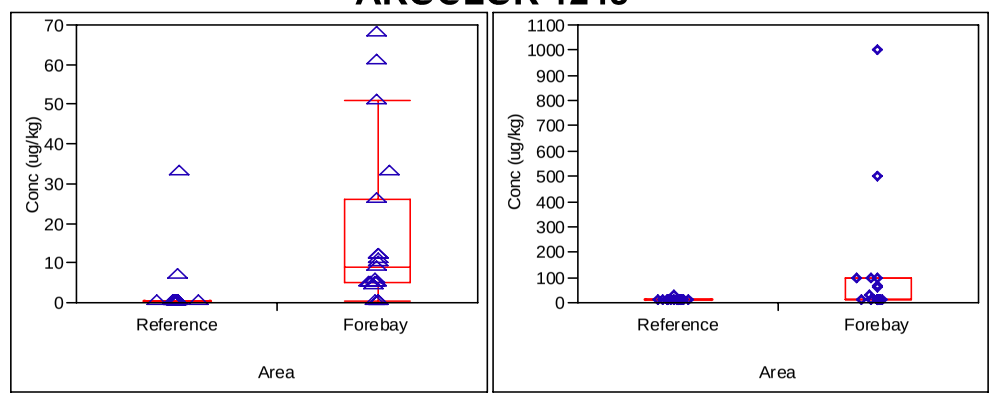
AROCLOR 1221



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

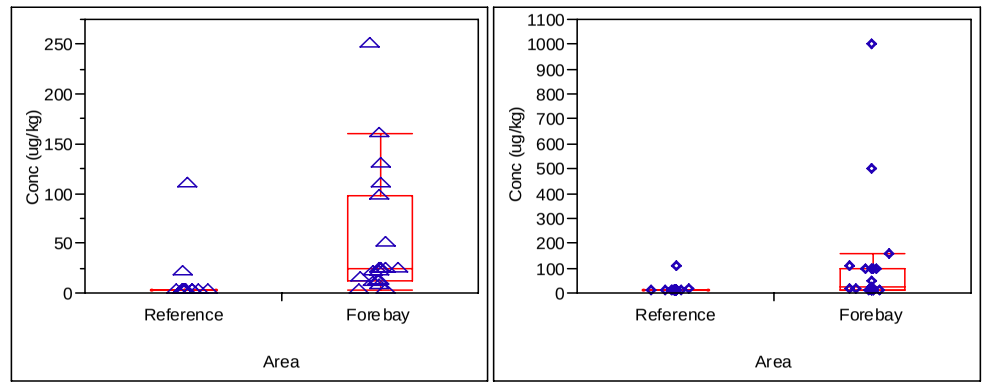
AROCLOR 1248



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

AROCLOR 1262



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

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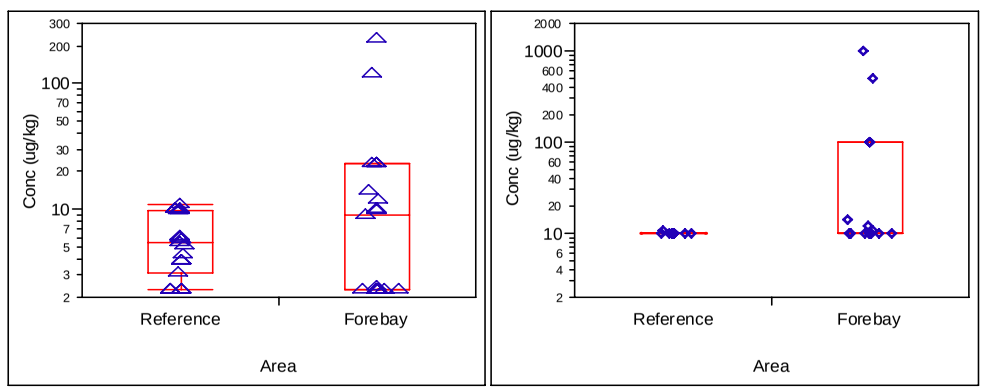
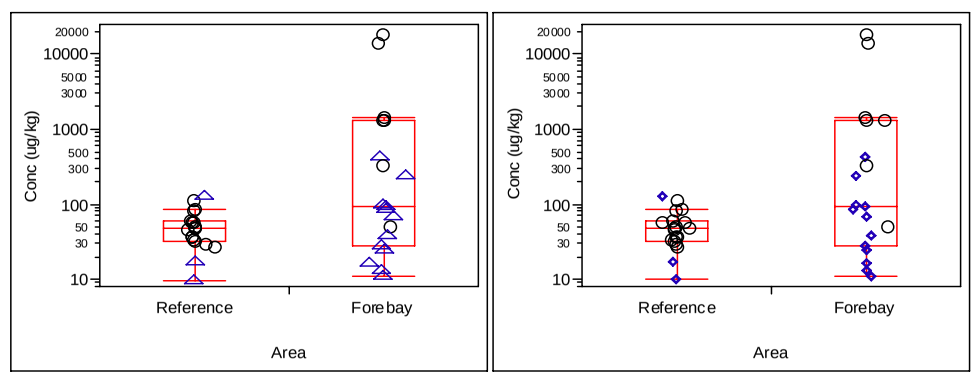


CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

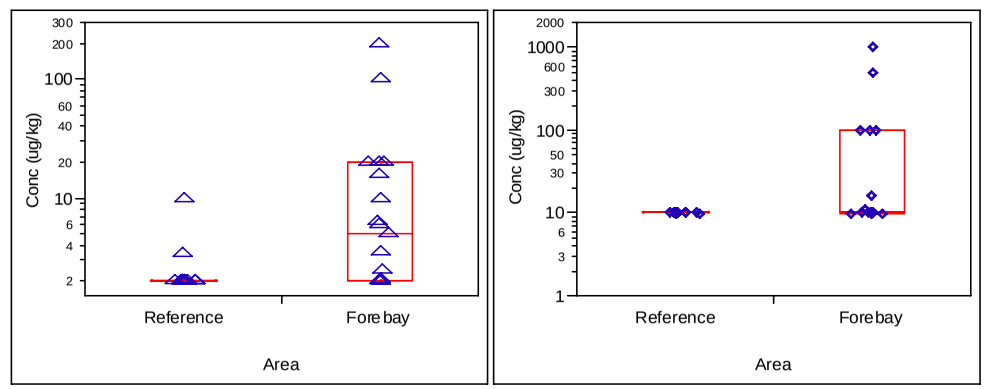
AROCLOR 1254



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

AROCLOR 1268



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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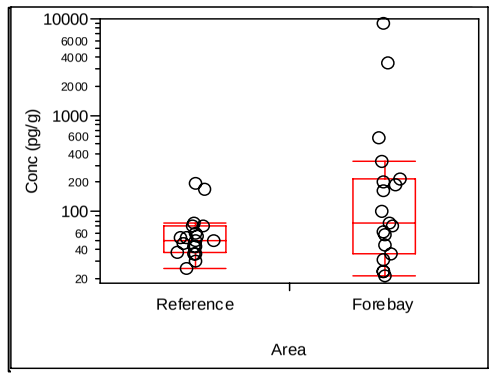
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PCB AROCLORS IN SMALLMOUTH BASS TISSUE

DRAWING NUMBER:	
FIG L-6e	
CAD FILE NUMBER:	
FIG L-6e	
SHEET: OF	REV.

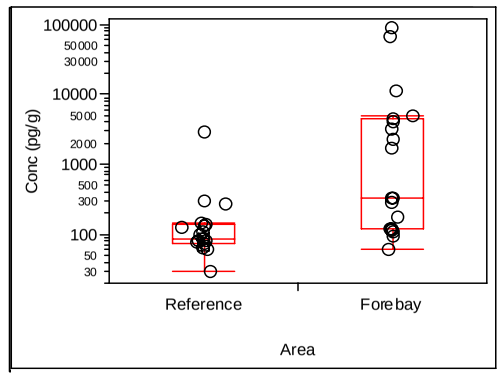
O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-6e PCB

PCB 77



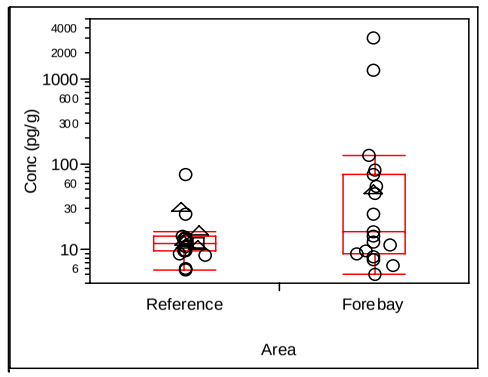
FOREBAY IS STATISTICALLY HIGHER

PCB 114



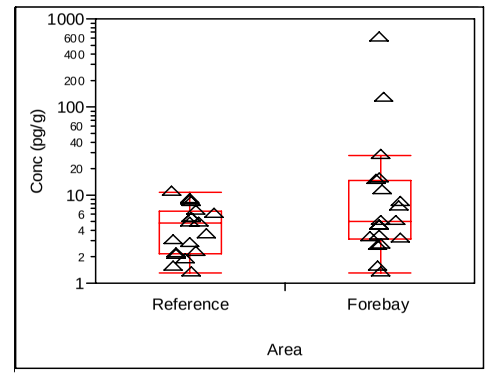
FOREBAY IS STATISTICALLY HIGHER

PCB 126



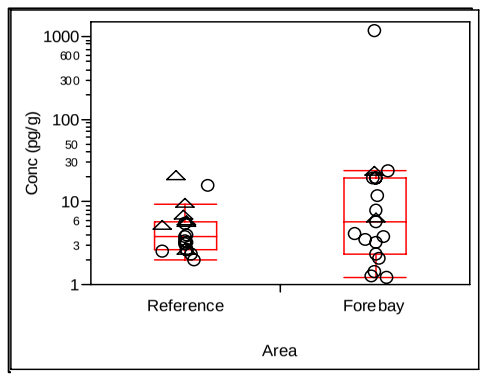
FOREBAY IS STATISTICALLY HIGHER

PCB 169



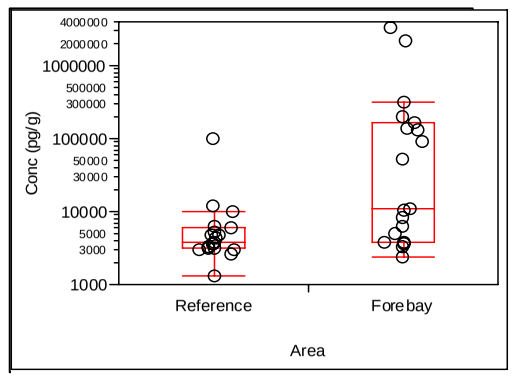
FOREBAY IS STATISTICALLY HIGHER

PCB 81



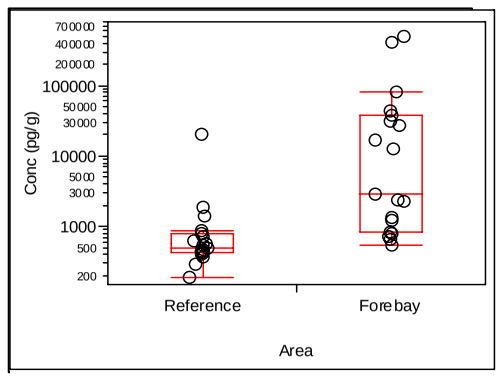
FOREBAY IS STATISTICALLY HIGHER

PCB 118



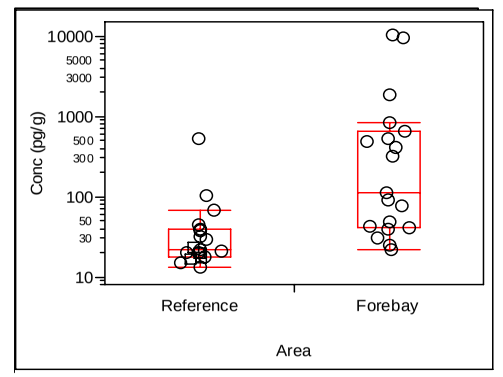
FOREBAY IS STATISTICALLY HIGHER

PCB 156+157



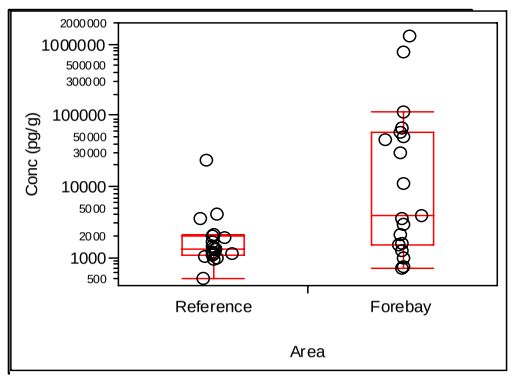
FOREBAY IS STATISTICALLY HIGHER

PCB 189



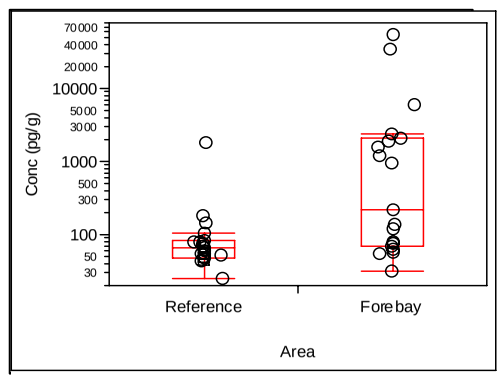
FOREBAY IS STATISTICALLY HIGHER

PCB 105



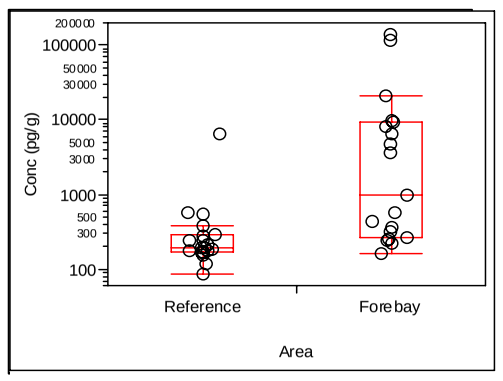
FOREBAY IS STATISTICALLY HIGHER

PCB 123



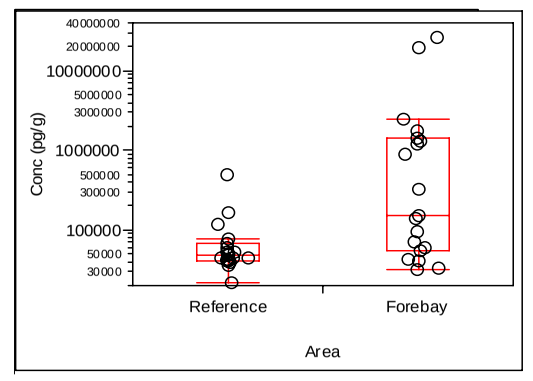
FOREBAY IS STATISTICALLY HIGHER

PCB 167



FOREBAY IS STATISTICALLY HIGHER

SUM 209 CONGENERS (KM-BASED)



FOREBAY IS STATISTICALLY HIGHER

LEGEND

- ○ Detected Result
- ⏢ Non-Detect, Censored at Reported Detection Limit (RDL)
- □ EMPC Result, Censored at Reported Value

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.

No.	DATE	BY	REVISION

JOB No.	DESIGNED:	PROJ. MANAGER:
25696946	LSM	MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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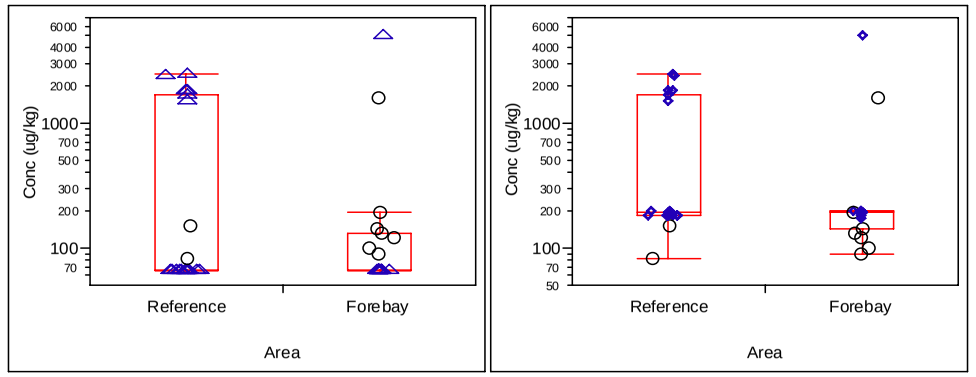
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PCB CONGENERS IN SMALLMOUTH BASS TISSUE

DRAWING NUMBER:	
FIG L-6f	
CAD FILE NUMBER:	
FIG L-6f	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-6f PCB Congeners in Smallmouth Boss Tissue.dwg Nov 12, 2010 - 2:52pm

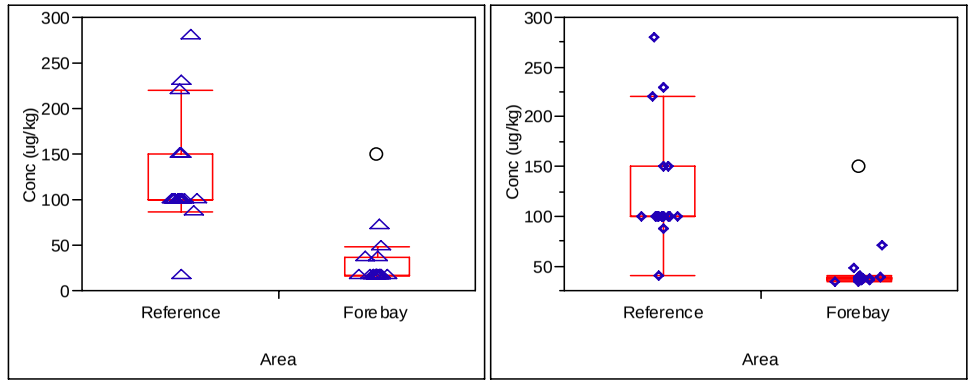
BIS(2-ETHYLHEXYL) PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS STATISTICALLY HIGHER

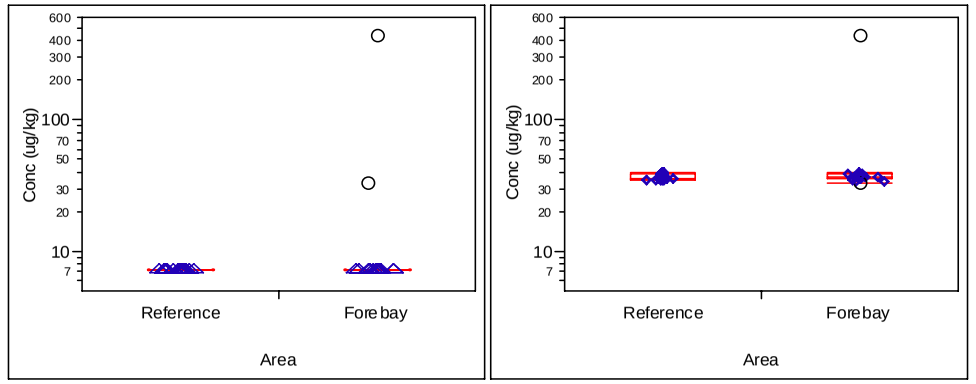
DI-N-BUTYL PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

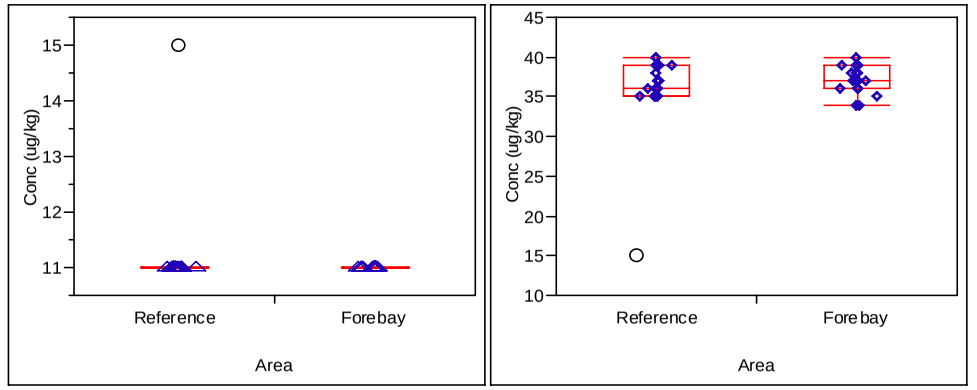
BUTYL BENZYL PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

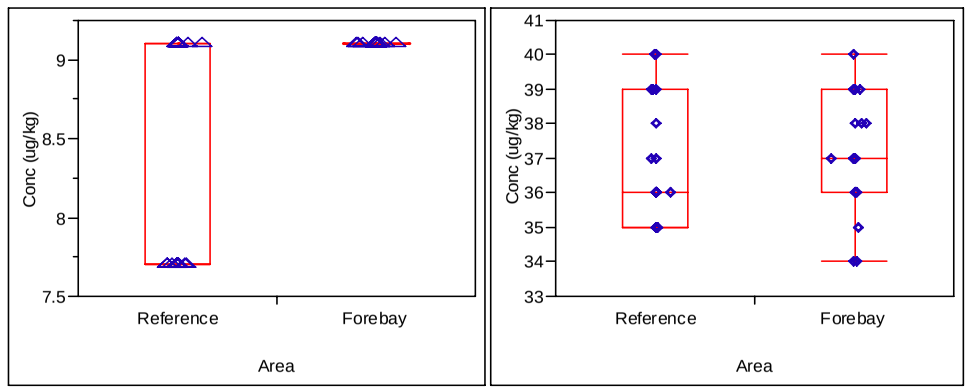
DI-N-OCTYL PHTHALATE



CENSORED AT MDL | CENSORED AT MRL

FOREBAY IS NOT STATISTICALLY HIGHER

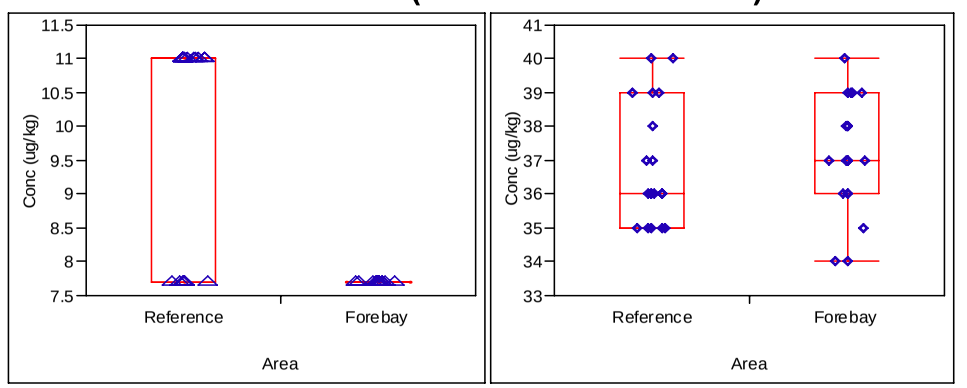
CARBAZOLE



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

P-CRESOL (4-METHYLPHENOL)



CENSORED AT MDL | CENSORED AT MRL

ALL SAMPLES ARE NON DETECTS

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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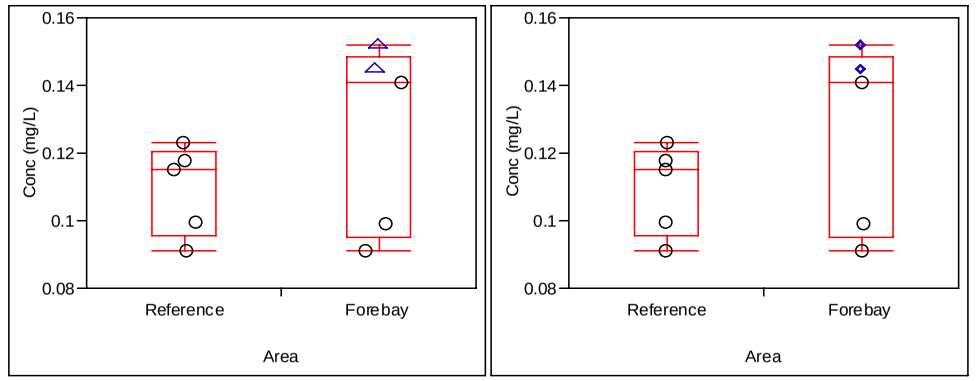
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
SVOCs IN SMALLMOUTH BASS TISSUE

DRAWING NUMBER: FIG L-6g
CAD FILE NUMBER: FIG L-6g
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-6g SVOCs in Smallmouth Bass Tissue.dwg Nov 17, 2010 - 8:46am

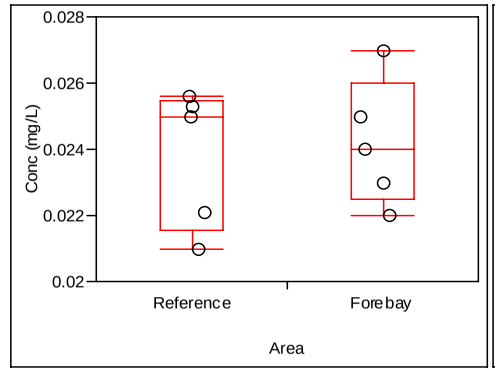
ALUMINUM



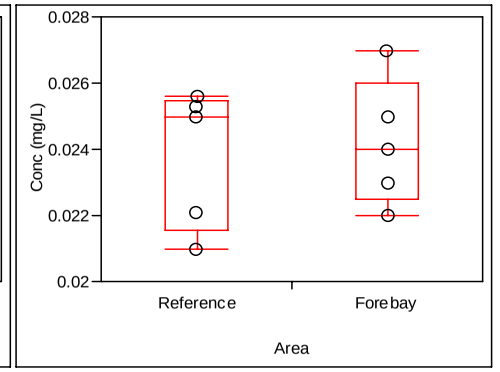
CENSORED AT MDL

CENSORED AT MRL

BARIUM

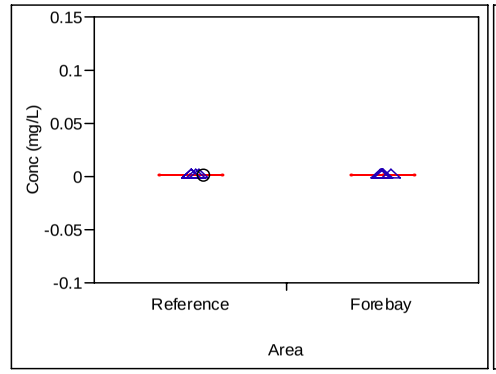


CENSORED AT MDL

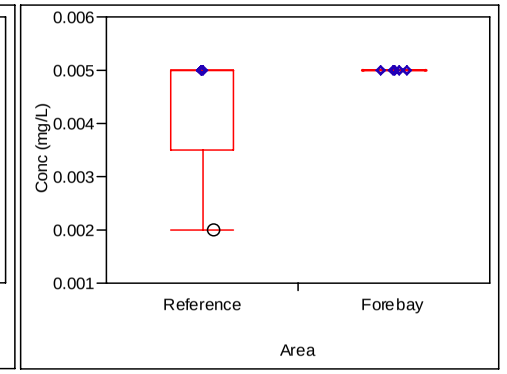


CENSORED AT MRL

CHROMIUM

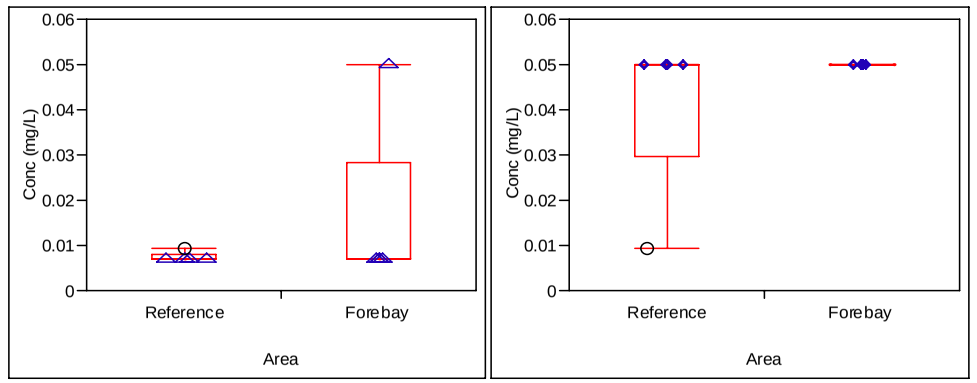


CENSORED AT MDL



CENSORED AT MRL

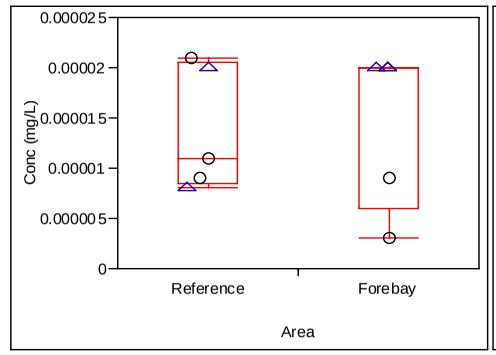
ANTIMONY



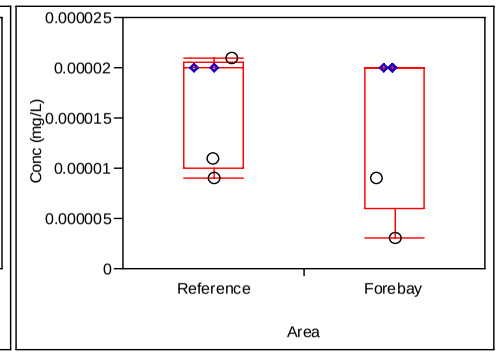
CENSORED AT MDL

CENSORED AT MRL

BERYLLIUM

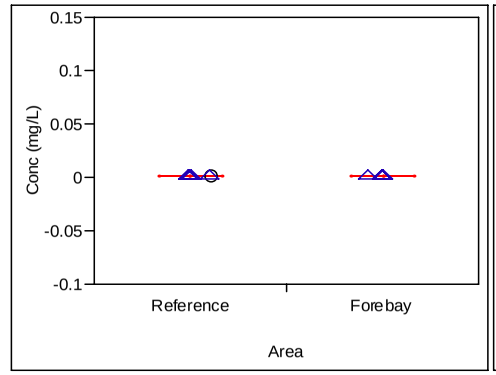


CENSORED AT MDL

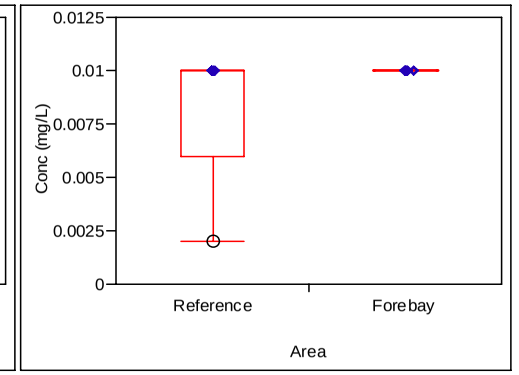


CENSORED AT MRL

COBALT

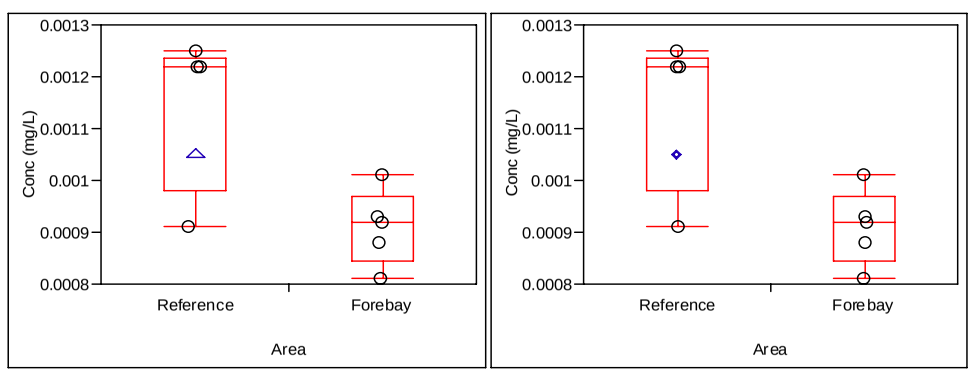


CENSORED AT MDL



CENSORED AT MRL

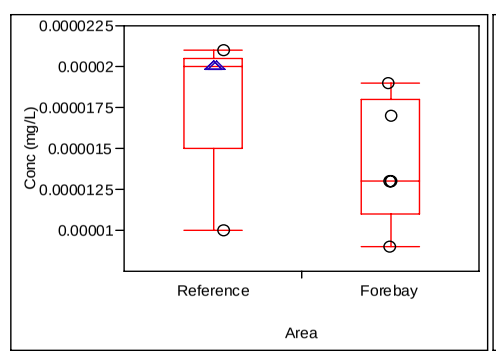
ARSENIC



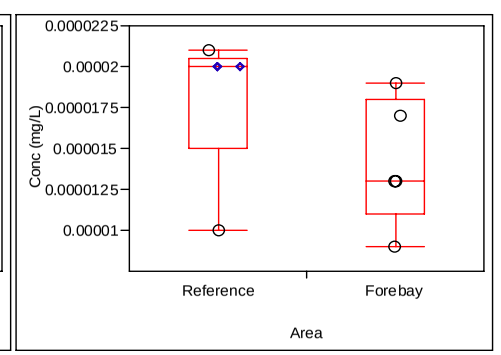
CENSORED AT MDL

CENSORED AT MRL

CADMIUM

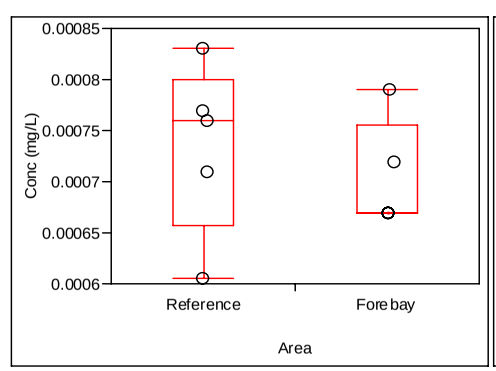


CENSORED AT MDL

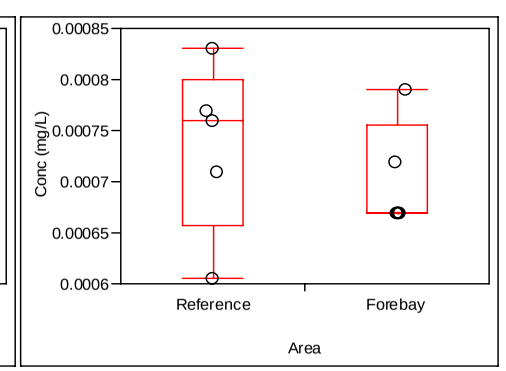


CENSORED AT MRL

COPPER



CENSORED AT MDL



CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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BRADFORD ISLAND

CASCADE LOCKS, OREGON

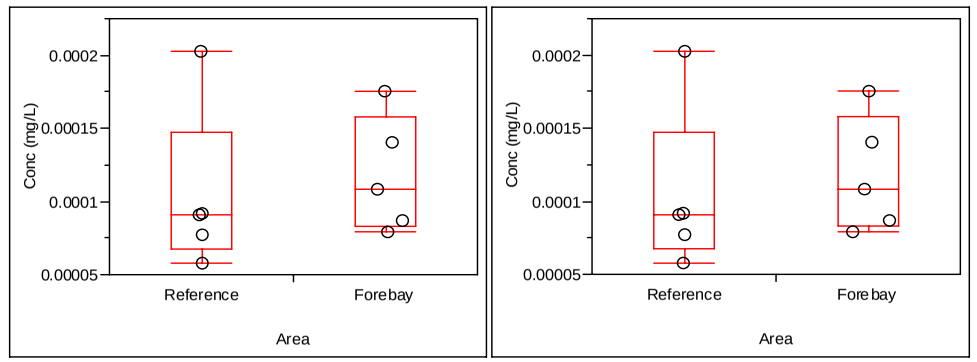
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
TOTAL METALS IN SURFACE WATER

DRAWING NUMBER: FIG L-7a
CAD FILE NUMBER: FIG L-7a
SHEET: OF
REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-7a Metals in Surface Water.dwg Nov 18, 2010 - 11:19am

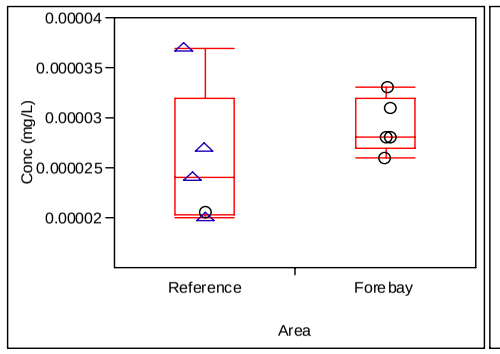
LEAD



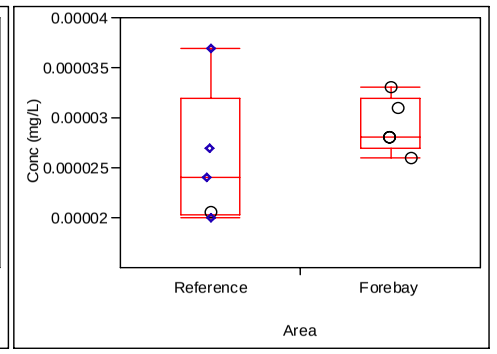
CENSORED AT MDL

CENSORED AT MRL

THALLIUM

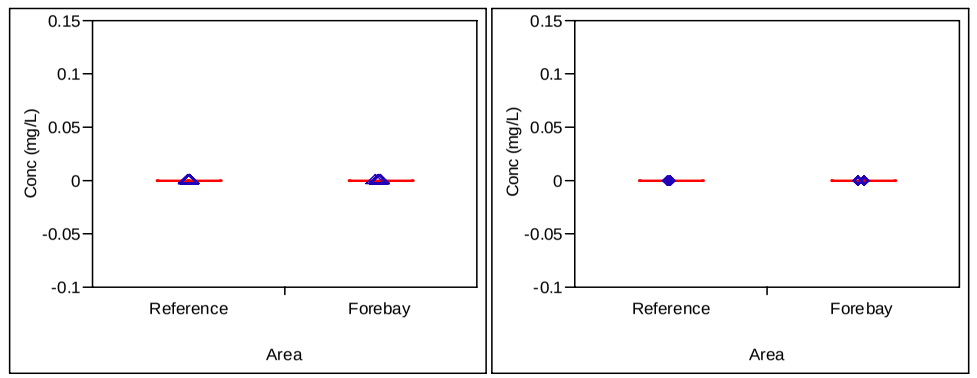


CENSORED AT MDL



CENSORED AT MRL

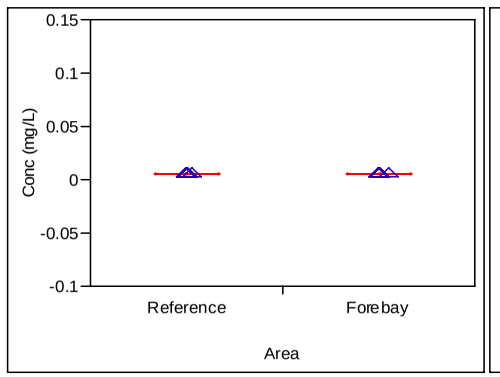
MERCURY



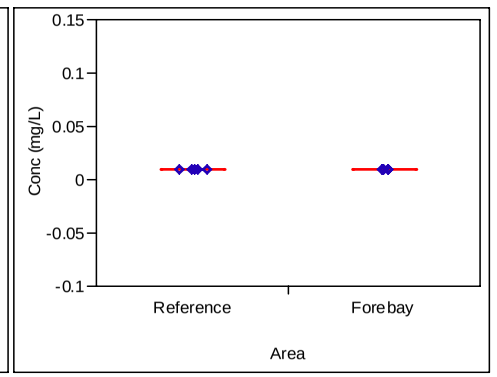
CENSORED AT MDL

CENSORED AT MRL

VANADIUM

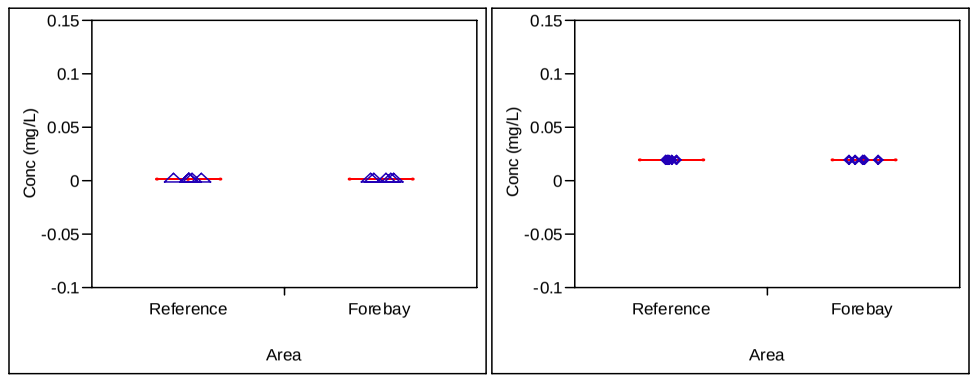


CENSORED AT MDL



CENSORED AT MRL

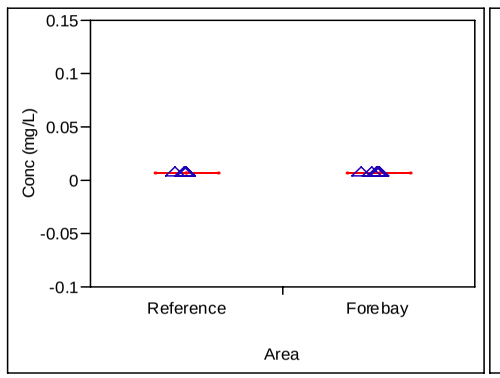
NICKEL



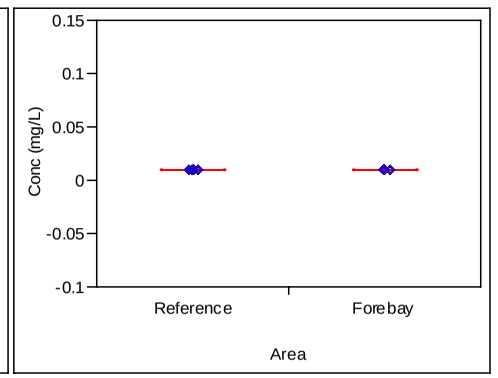
CENSORED AT MDL

CENSORED AT MRL

ZINC



CENSORED AT MDL



CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No. 25696946 | DESIGNED: LSM | PROJ. MANAGER: MP
SCALE: | DRAWN BY: HP | APPROVED BY: LSM
CHECKED BY: LSM | DATE: NOV 2010

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BRADFORD ISLAND

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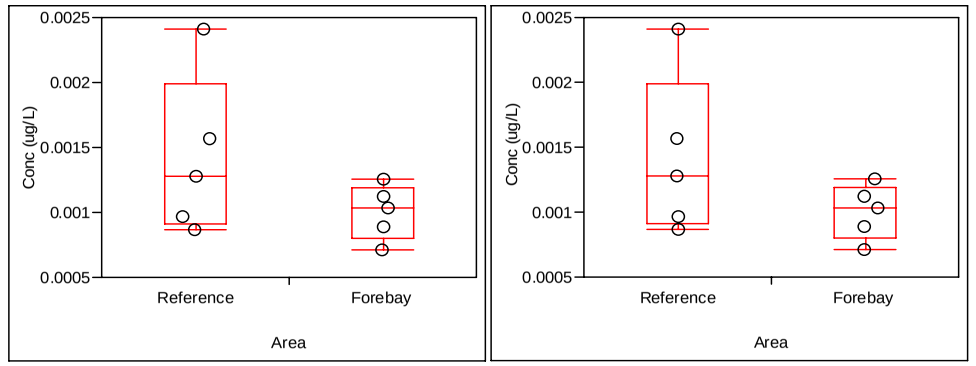
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
TOTAL METALS IN SURFACE WATER

DRAWING NUMBER: FIG L-7b
CAD FILE NUMBER: FIG L-7b
SHEET: OF | REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-7b Metals in Surface Water.dwg Nov 18, 2010 - 11:20am

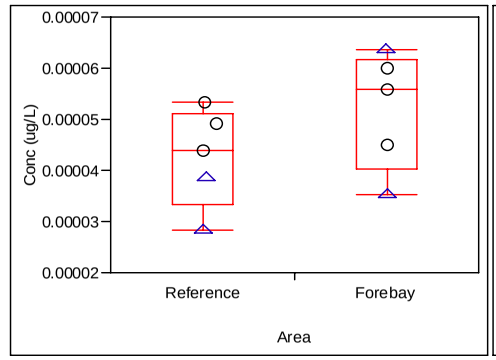
ACENAPHTHENE



CENSORED AT MDL

CENSORED AT MRL

BENZO(A)ANTHRACENE



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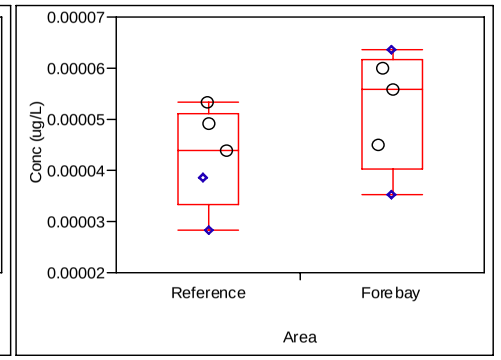
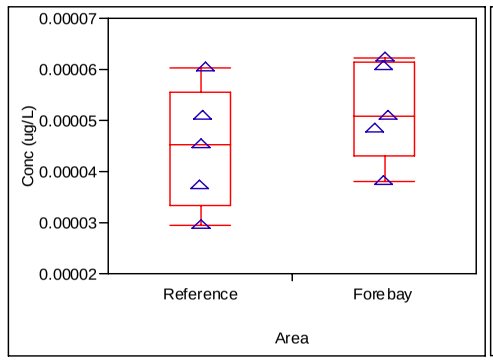


CENSORED AT MRL

BENZO(G,H,I)PERYLENE



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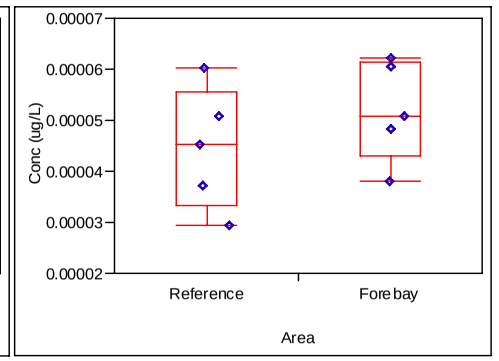
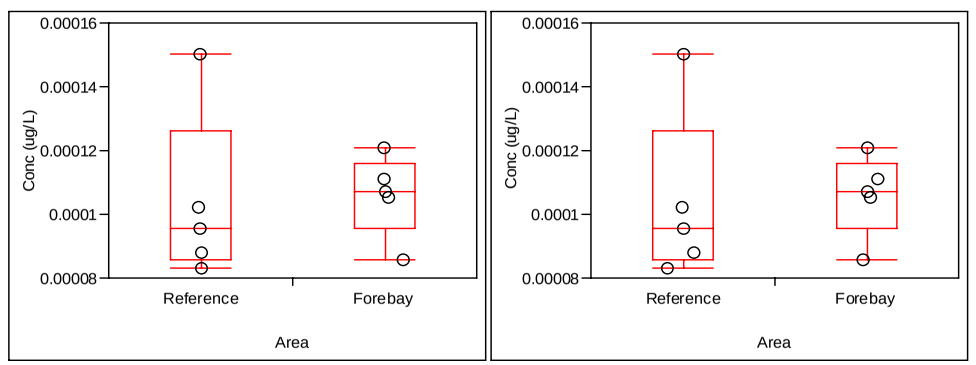


CENSORED AT MRL

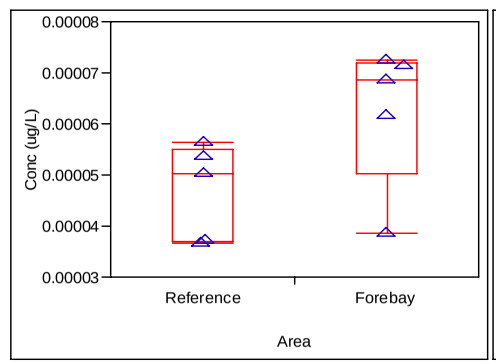
ANTHRACENE



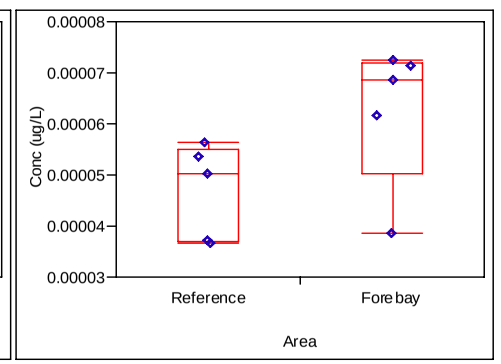
CENSORED AT MDL

CENSORED AT MRL

BENZO(A)PYRENE

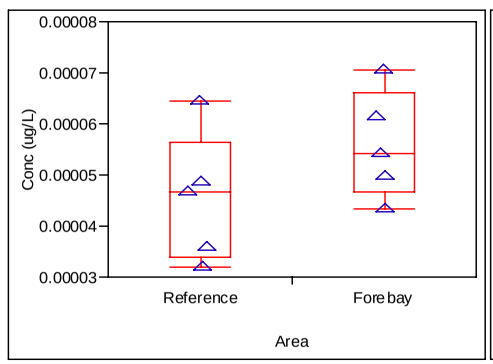


CENSORED AT MDL

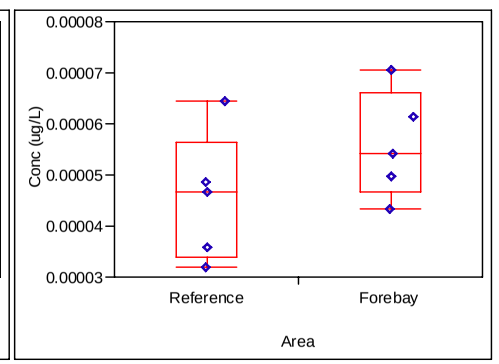


CENSORED AT MRL

BENZO(J,K)FLOURANTHENES

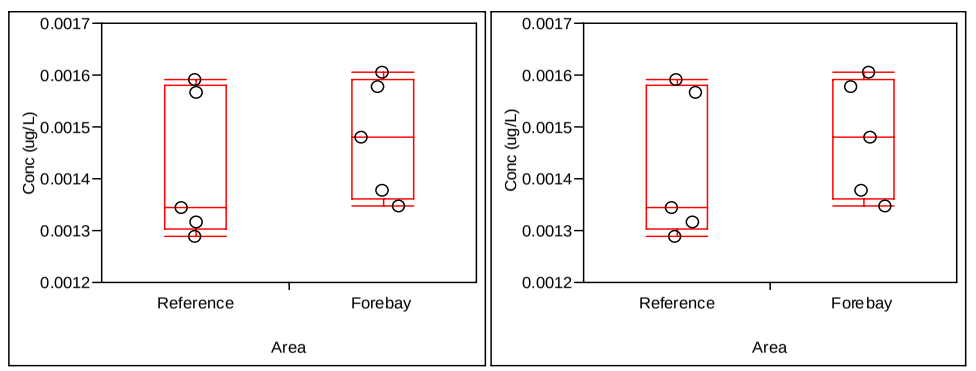


CENSORED AT MDL



CENSORED AT MRL

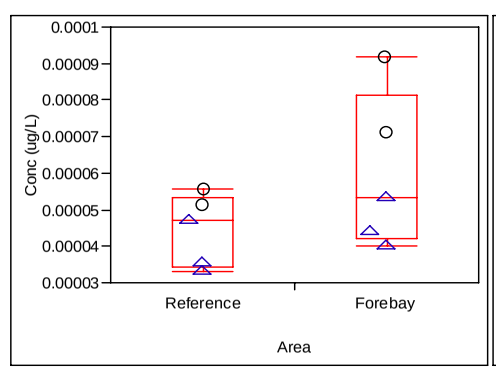
PHENANTHRENE



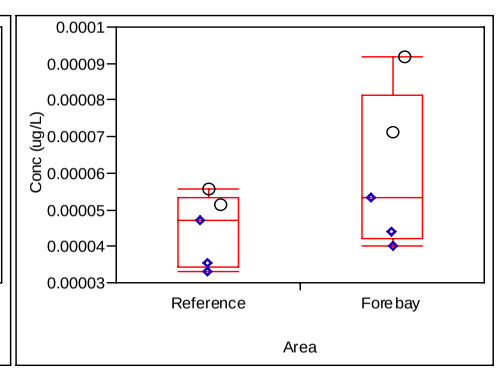
CENSORED AT MDL

CENSORED AT MRL

BENZO(B)FLUORANTHENE

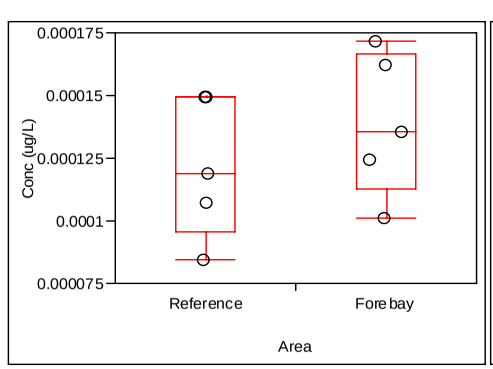


CENSORED AT MDL

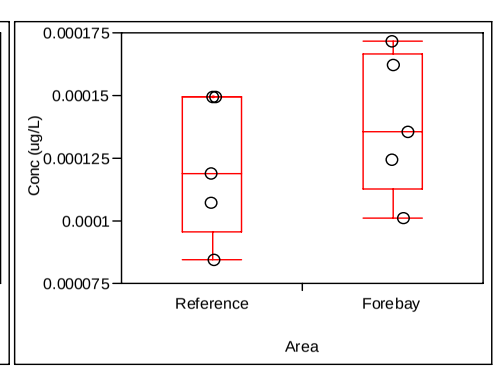


CENSORED AT MRL

CHRYSENE



CENSORED AT MDL



CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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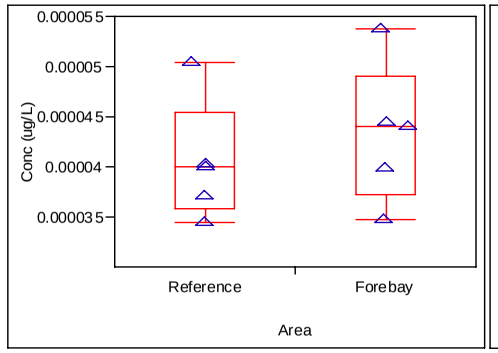
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN SURFACE WATER

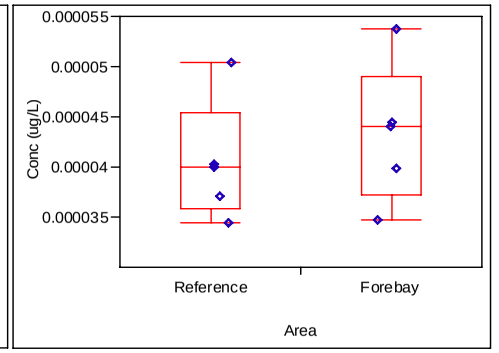
DRAWING NUMBER:	
FIG L-7c	
CAD FILE NUMBER:	
FIG L-7c	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-7c PAHs in Surface Water.dwg Nov 17, 2010 - 8:48am

DIBENZ(A,H)ANTHRACENE

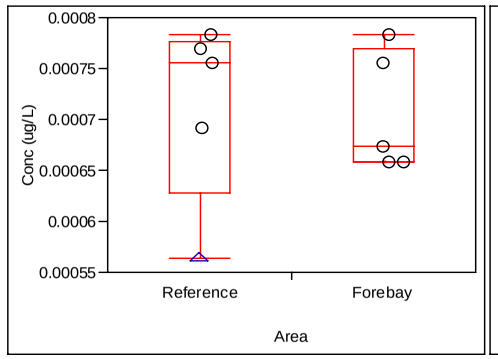


CENSORED AT MDL

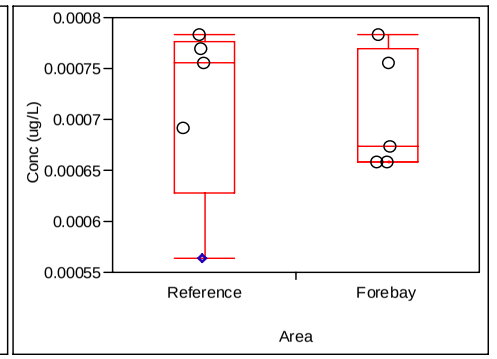


CENSORED AT MRL

FLUORANTHENE

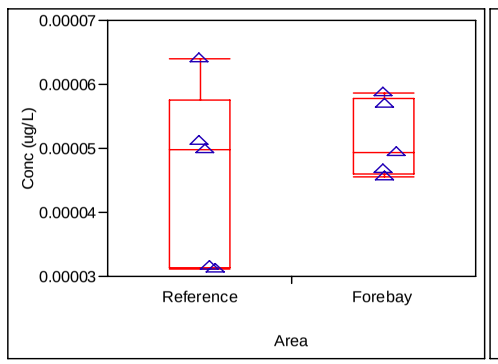


CENSORED AT MDL

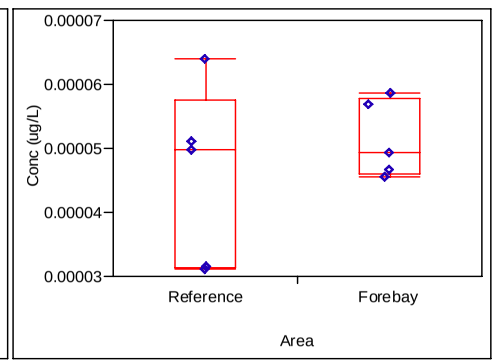


CENSORED AT MRL

INDENO(1,2,3-CD)PYRENE



CENSORED AT MDL



CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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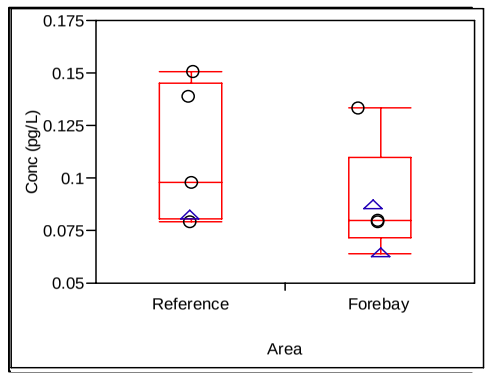
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN SURFACE WATER

DRAWING NUMBER:	
FIG L-7d	
CAD FILE NUMBER:	
FIG L-7d	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-7d PAHs in Surface Water.dwg Nov 17, 2010 - 8:49am

PCB 77



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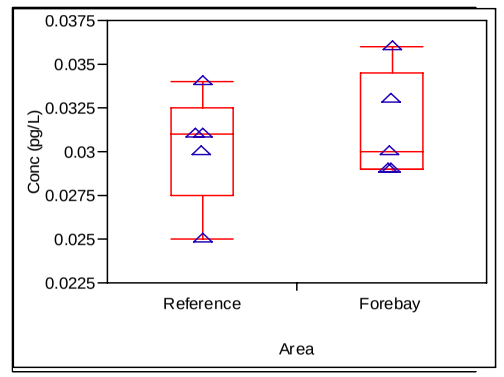

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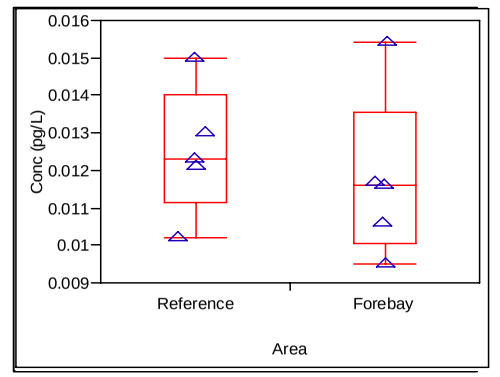
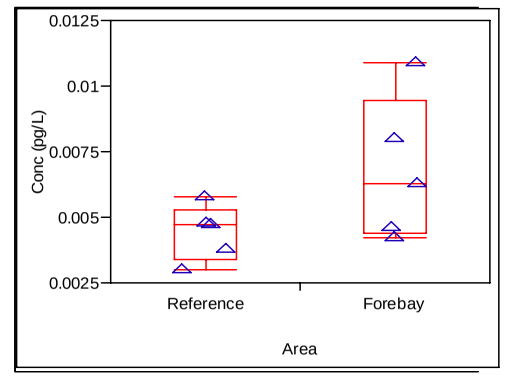
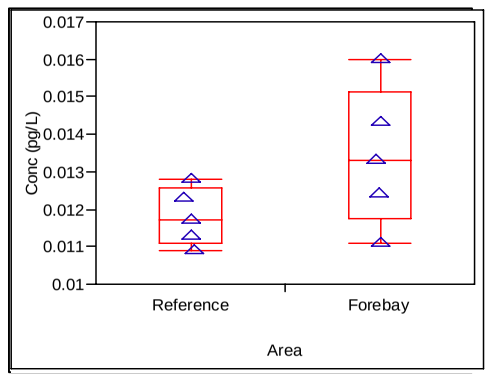


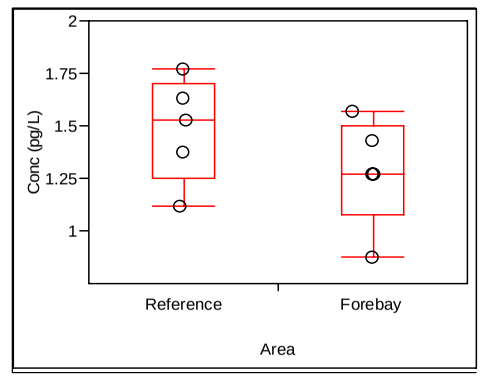
PCB 169



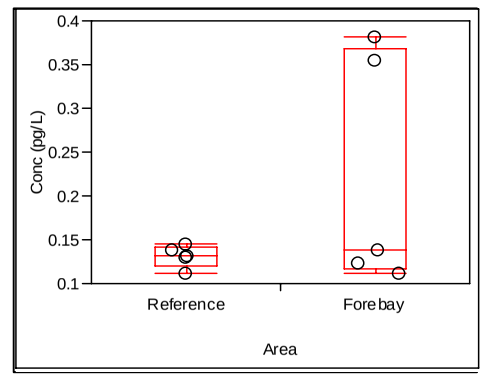
PCB 81



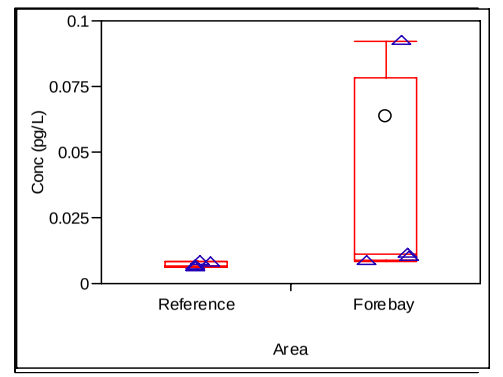
PCB 118



PCB 156+157



PCB 189



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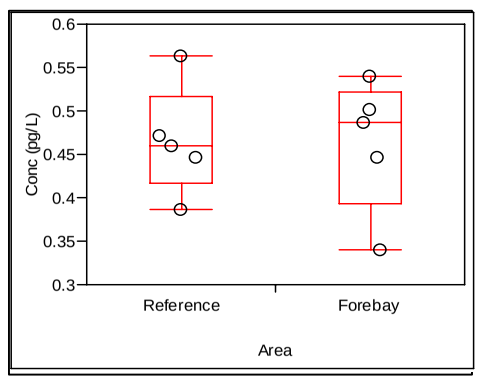

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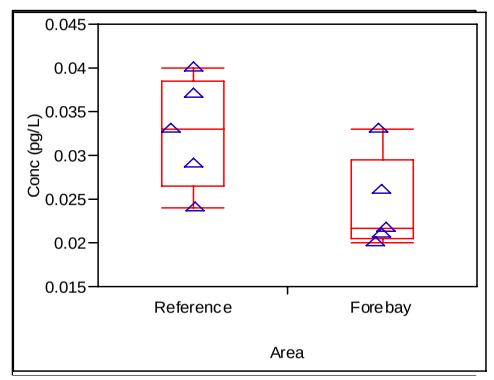
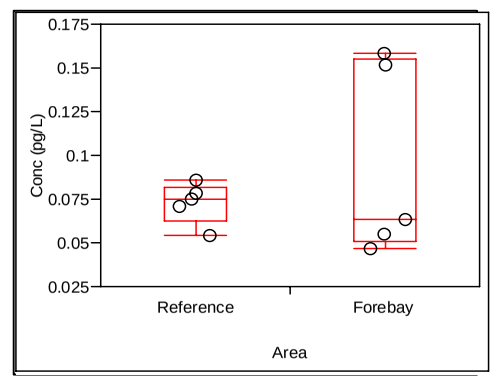
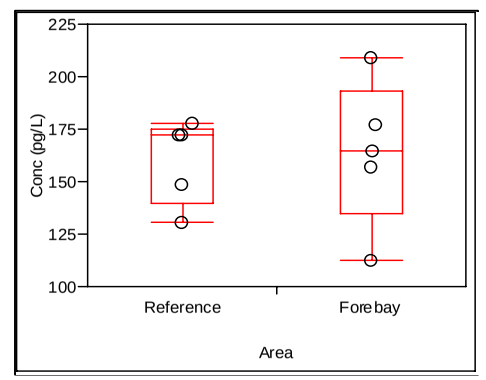


PCB 167



SUM 209 CONGENERS (KM-BASED)



LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Reported Detection Limit (RDL)
- □ EMPC Result, Censored at Reported Value

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.

No.	DATE	BY	REVISION

JOB No.	DESIGNED:	PROJ. MANAGER:
25696946	LSM	MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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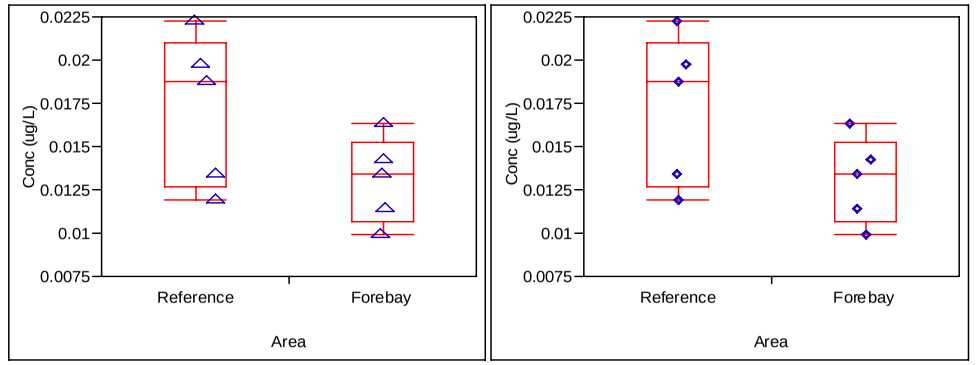
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PCB CONGENERS IN SURFACE WATER

DRAWING NUMBER:	
FIG L-7e	
CAD FILE NUMBER:	
FIG L-7e	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-7e PCB Congeners in Surface Water.dwg Nov 12, 2010 - 4:11pm

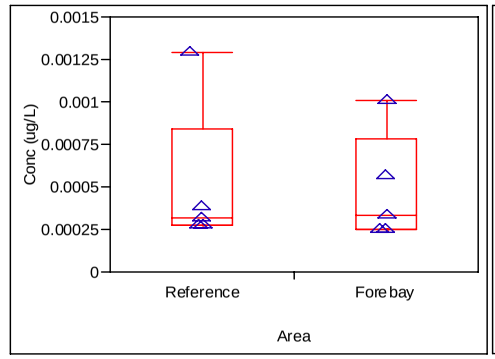
BIS(2-ETHYLHEXYL) PHTHALATE



CENSORED AT MDL

CENSORED AT MRL

DI-N-OCTYL PHTHALATE



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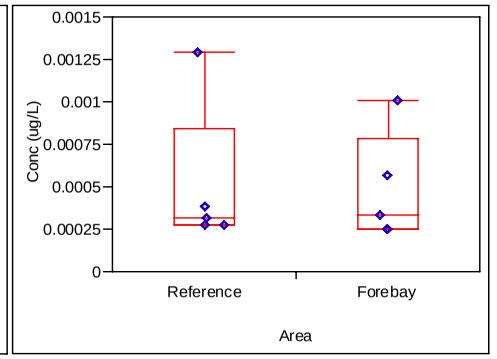
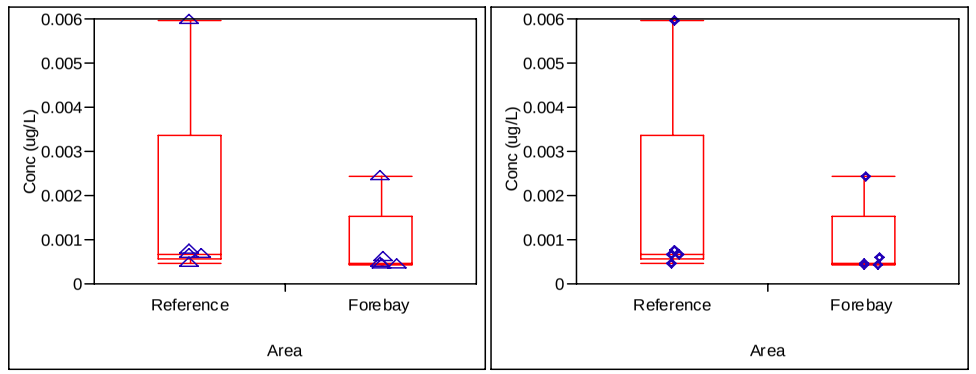


CENSORED AT MRL

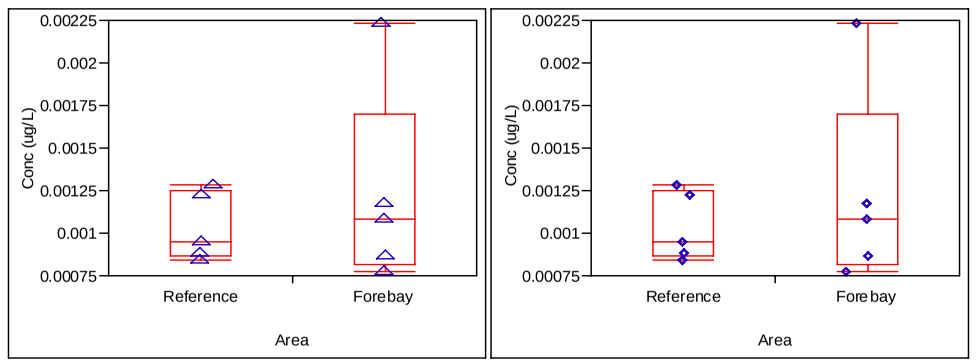
BUTYL BENZYL PHTHALATE



CENSORED AT MDL

CENSORED AT MRL

DI-N-BUTYL PHTHALATE



CENSORED AT MDL

CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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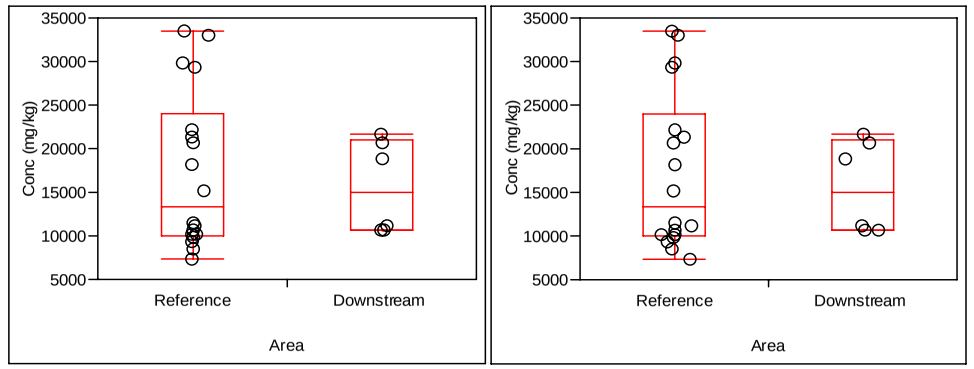
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
SVOCs IN SURFACE WATER

DRAWING NUMBER:	
FIG L-7f	
CAD FILE NUMBER:	
FIG L-7f	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-7f SVOCs in Surface Water.dwg Nov 17, 2010 - 8:49am

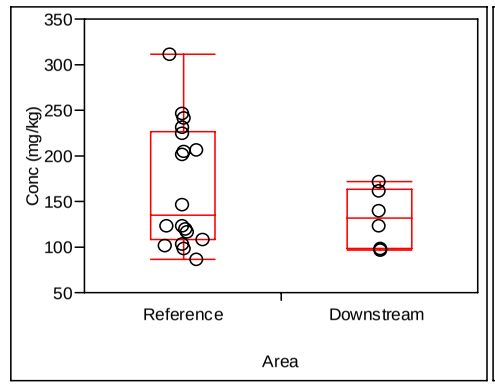
ALUMINUM



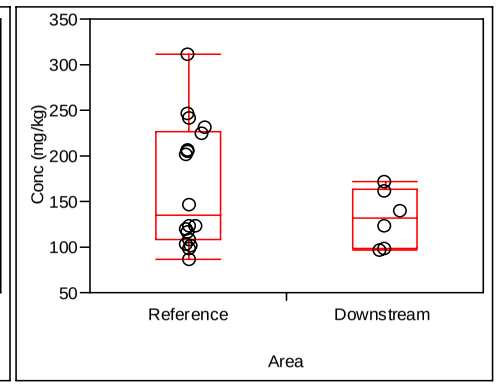
CENSORED AT MDL

CENSORED AT MRL

BARIUM



CENSORED AT MDL



CENSORED AT MRL

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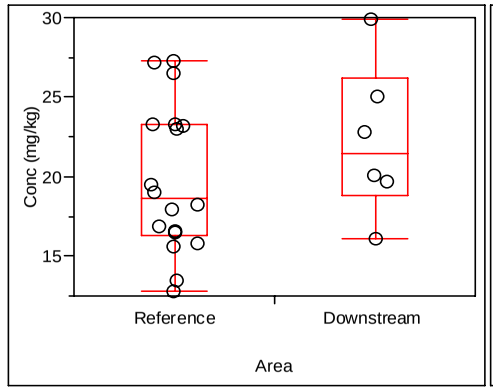

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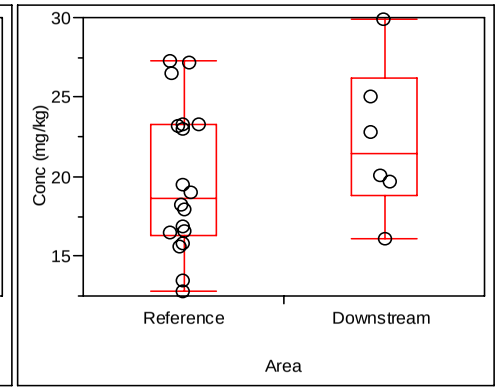

CENSORED AT MRL

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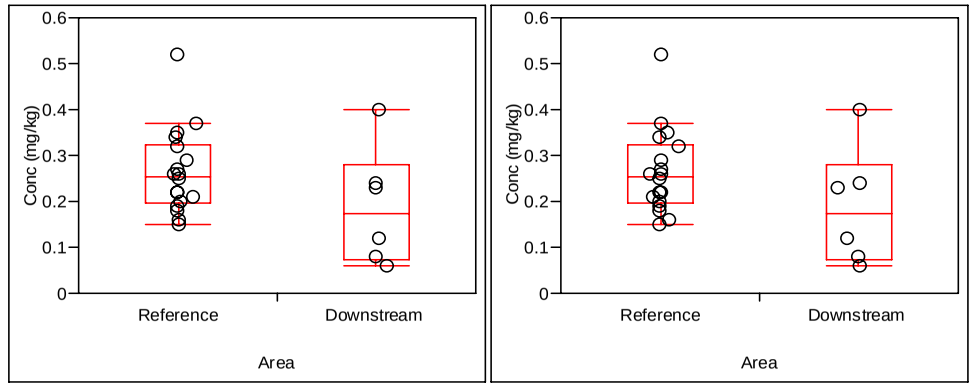
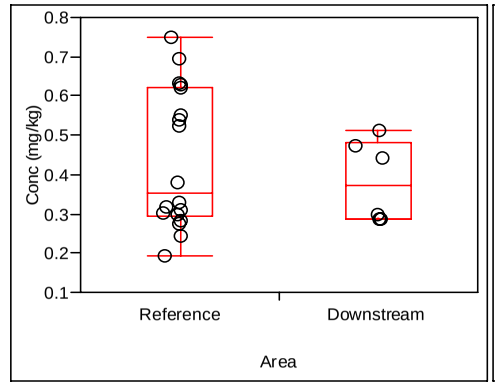


CENSORED AT MDL

CENSORED AT MRL

BERYLLIUM



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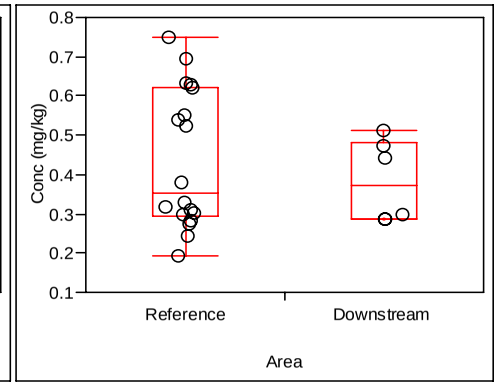

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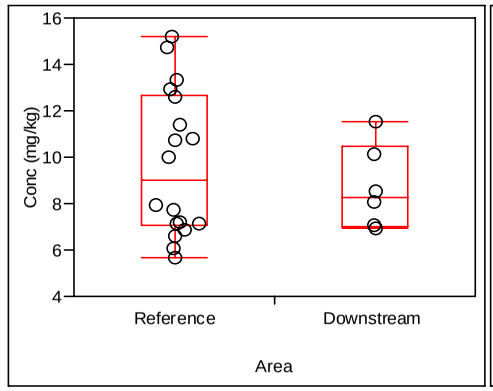

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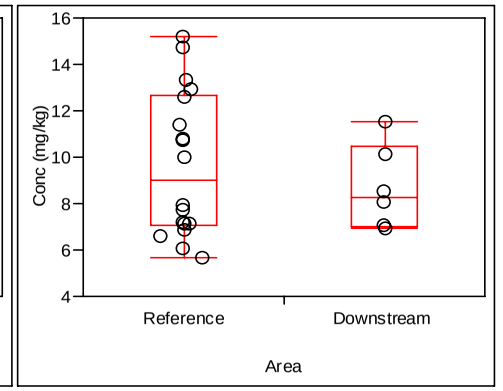

CENSORED AT MRL

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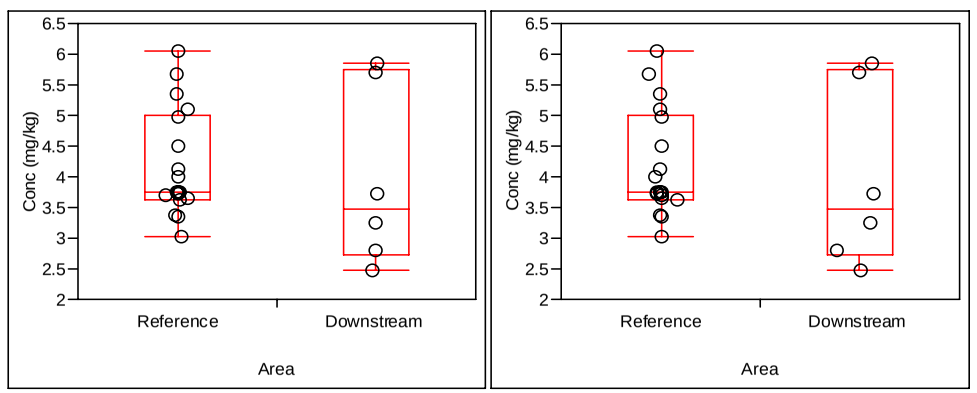
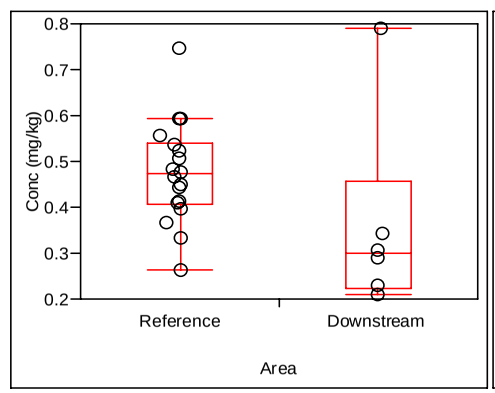


CENSORED AT MDL

CENSORED AT MRL

CADMIUM



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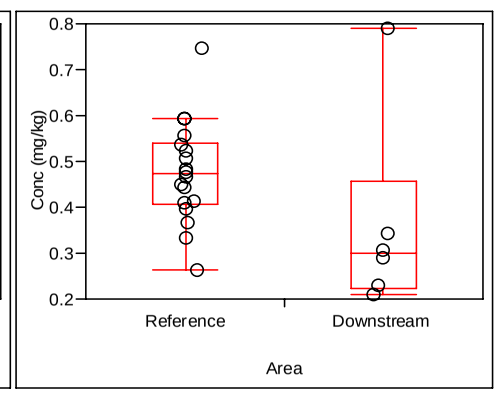

CENSORED AT MRL

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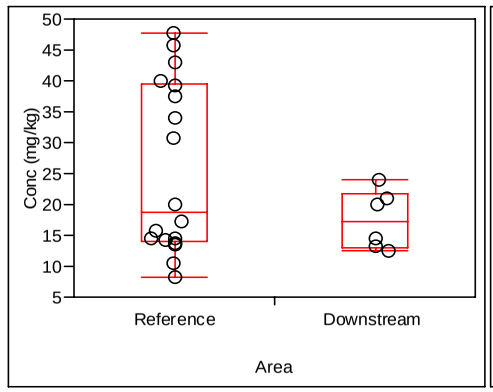

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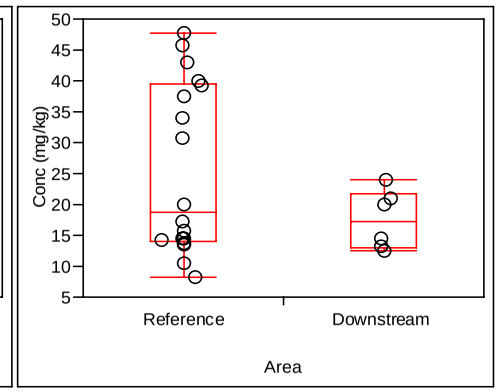

CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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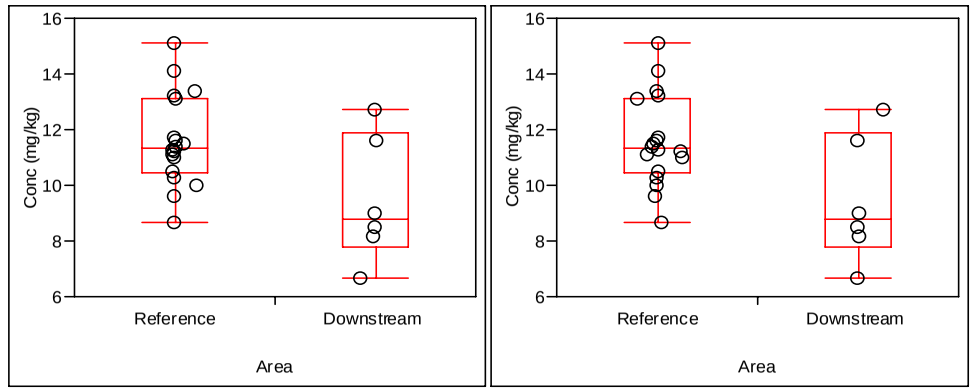
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN DOWNSTREAM SEDIMENT

DRAWING NUMBER:	
FIG L-8a	
CAD FILE NUMBER:	
FIG L-8a	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-8a Metals in Downstream Sediment.dwg Nov 17, 2010 - 8:50am

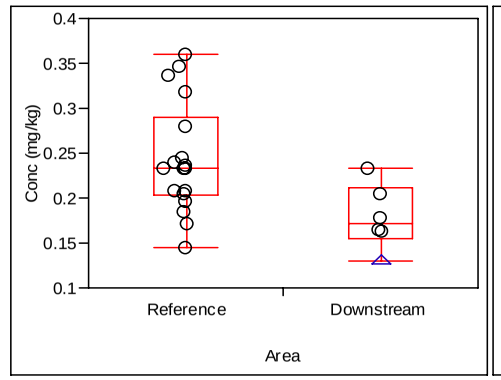
LEAD



CENSORED AT MDL

CENSORED AT MRL

THALLIUM



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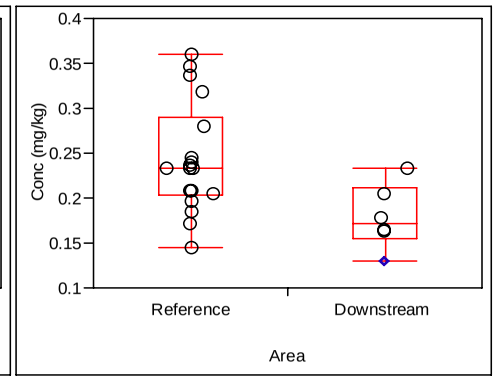
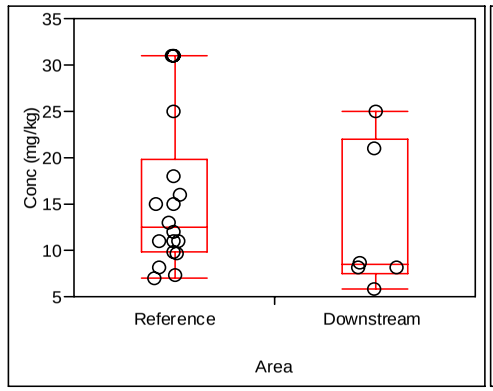


CENSORED AT MRL

DIESEL RANGE ORGANICS



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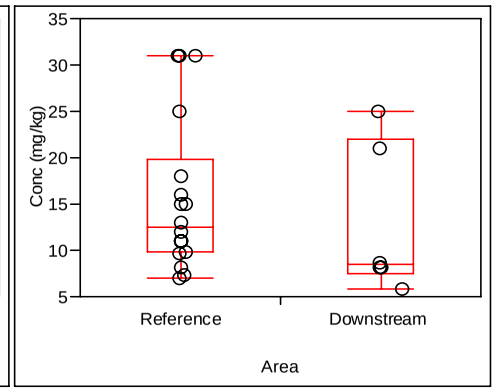
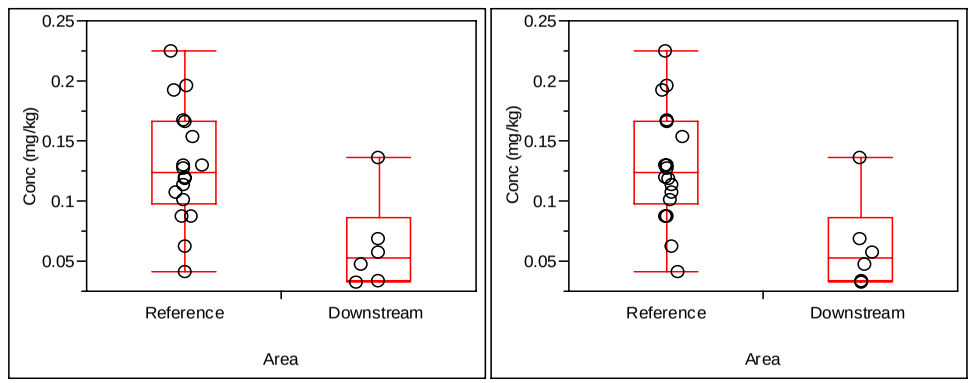


CENSORED AT MRL

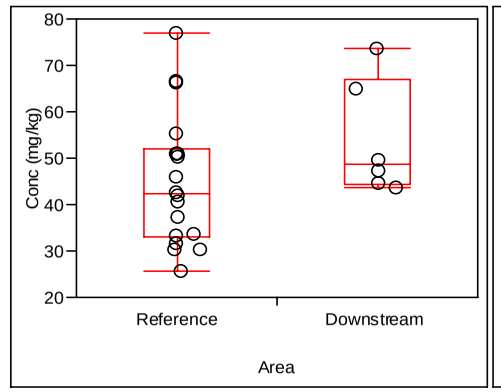
MERCURY



CENSORED AT MDL

CENSORED AT MRL

VANADIUM



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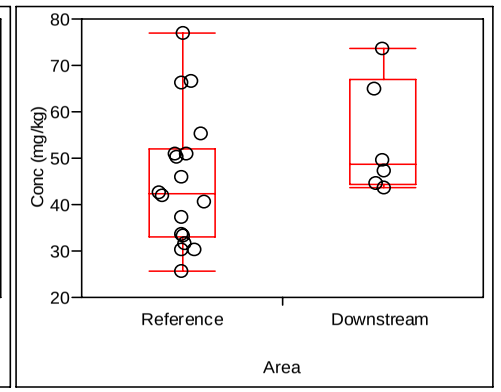
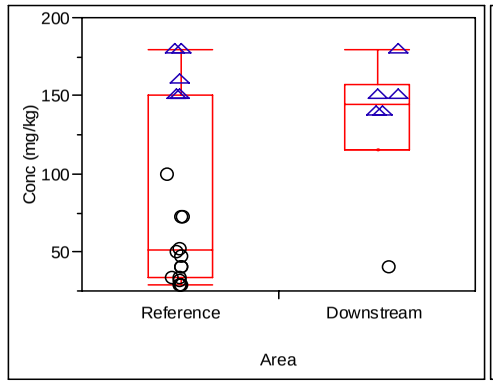


CENSORED AT MRL

RESIDUAL RANGE ORGANICS



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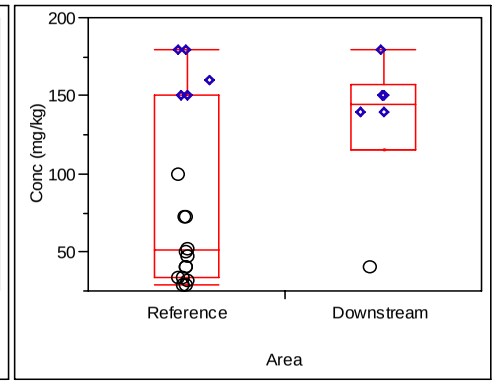
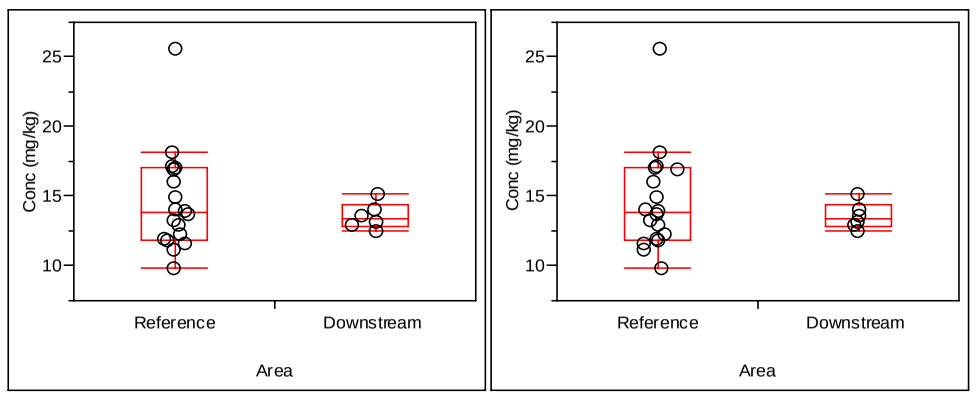


CENSORED AT MRL

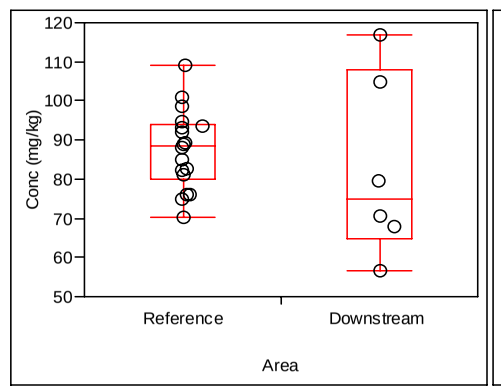
NICKEL



CENSORED AT MDL

CENSORED AT MRL

ZINC



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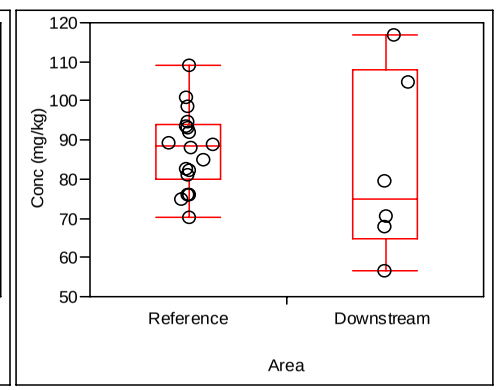
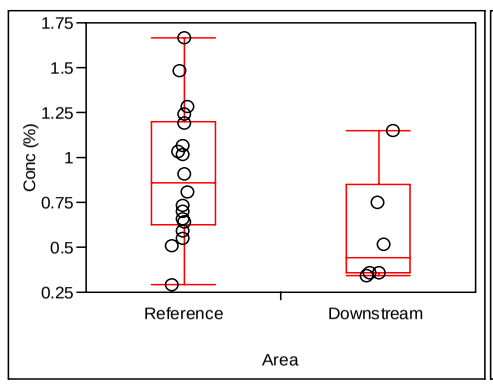


CENSORED AT MRL

TOTAL ORGANIC CARBON



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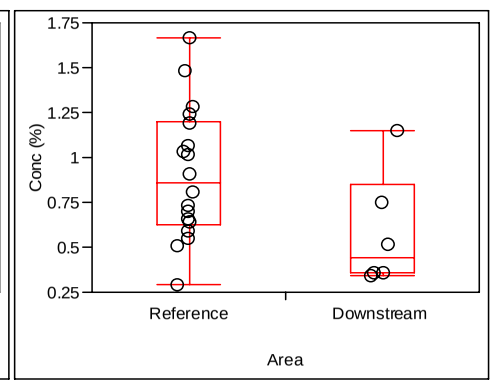

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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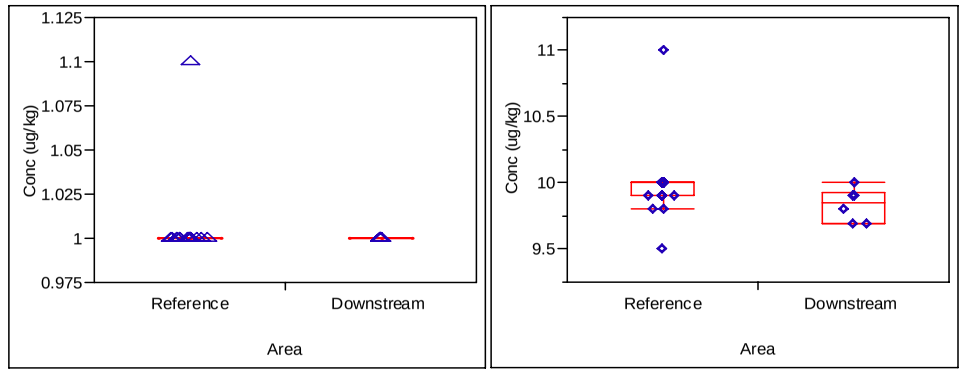
RIVER OPERABLE UNIT

BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
METALS IN DOWNSTREAM SEDIMENT

DRAWING NUMBER:	
FIG L-8b	
CAD FILE NUMBER:	
FIG L-8b	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-8b Metals in Downstream Sediment.dwg Nov 17, 2010 - 8:50am

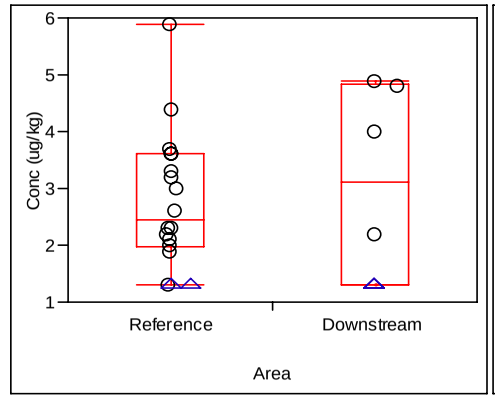
ACENAPHTHENE



CENSORED AT MDL

CENSORED AT MRL

PHENANTHRENE



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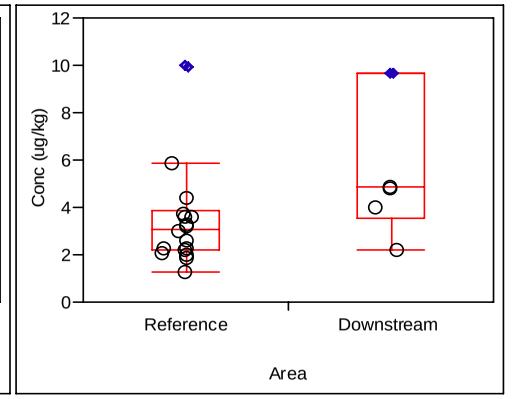
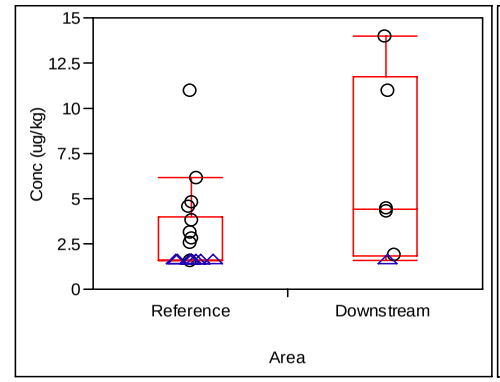


CENSORED AT MRL

BENZO(A)PYRENE



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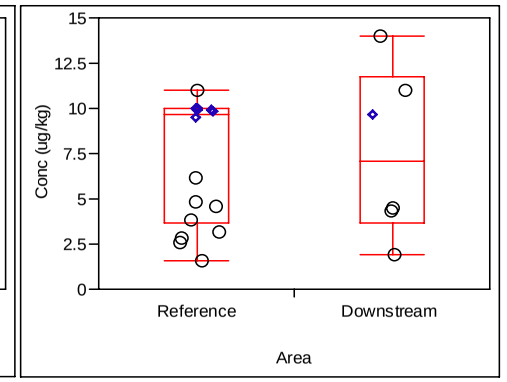
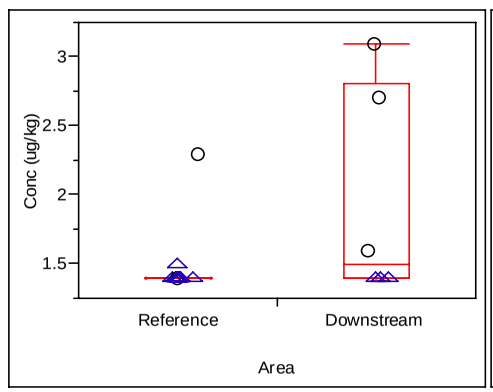


CENSORED AT MRL

ANTHRACENE



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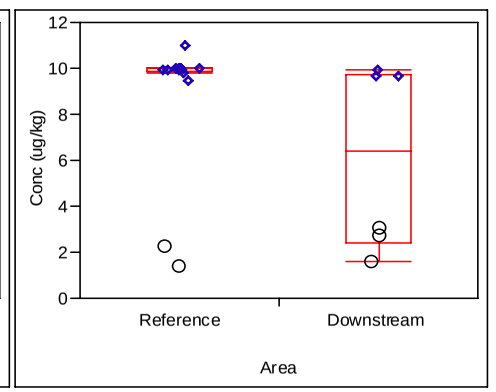
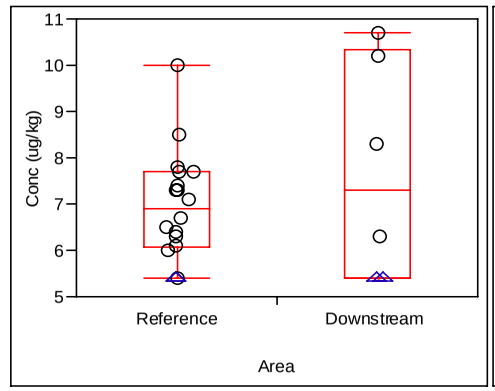


CENSORED AT MRL

LPAH



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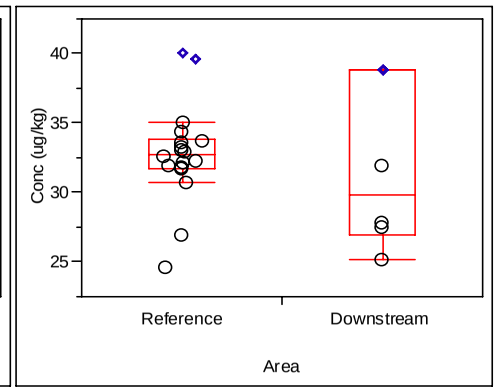
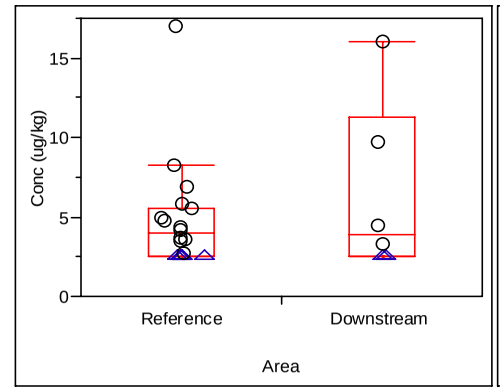


CENSORED AT MRL

BENZO(B)FLUORANTHENE



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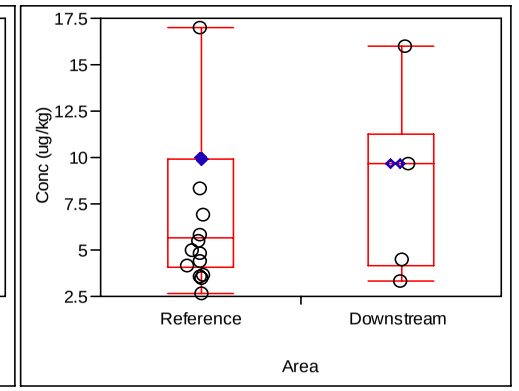
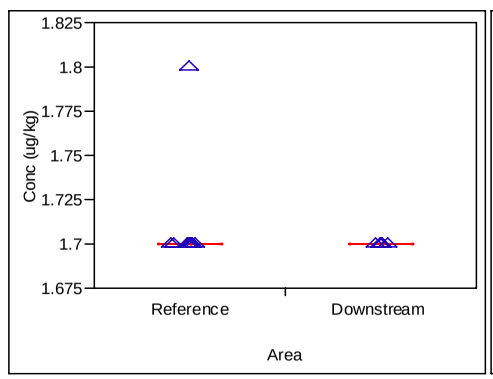


CENSORED AT MRL

FLUORENE



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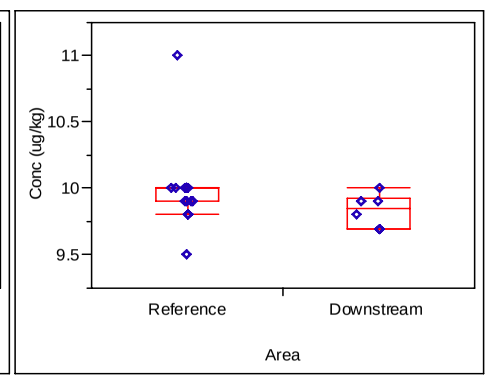
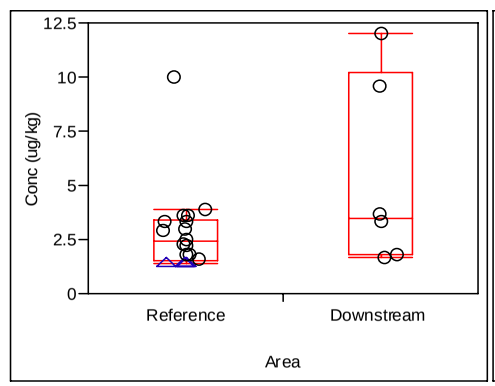


CENSORED AT MRL

BENZO(A)ANTHRACENE



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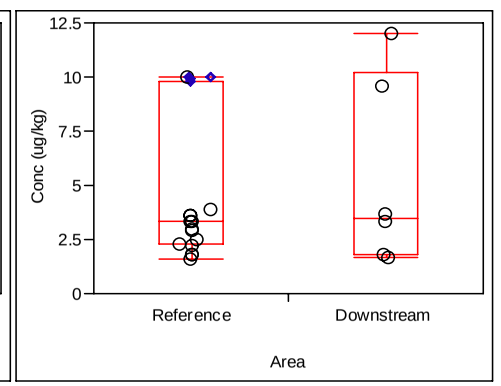
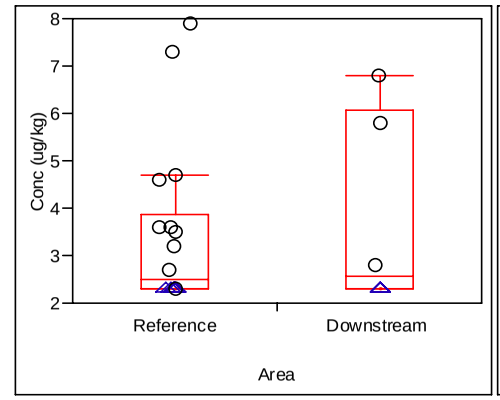


CENSORED AT MRL

BENZO(G,H,I)PERYLENE



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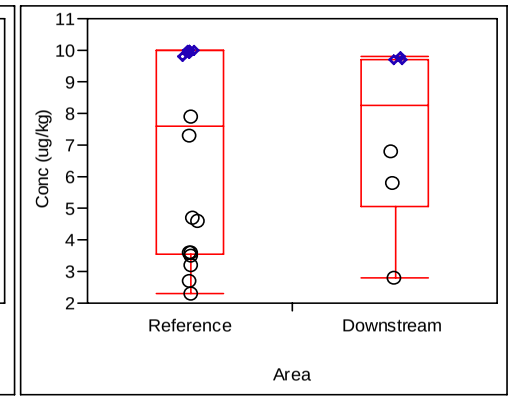

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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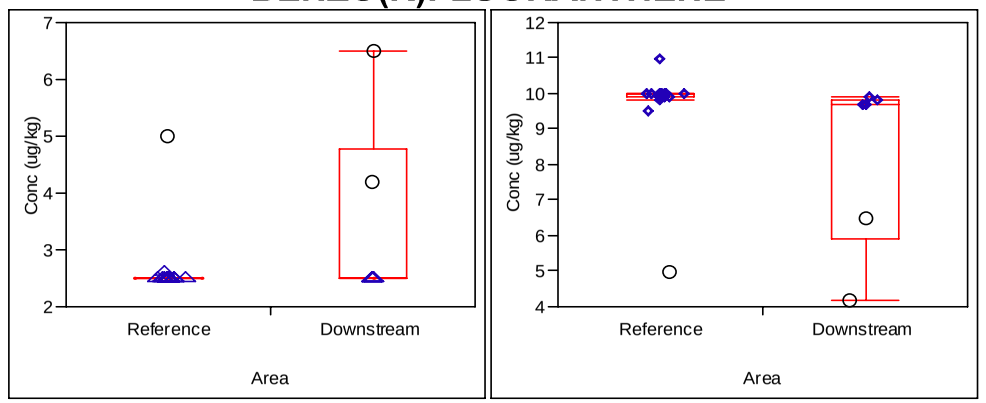
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PAHs IN DOWNSTREAM SEDIMENT

DRAWING NUMBER:	
FIG L-8c	
CAD FILE NUMBER:	
FIG L-8c	
SHEET: OF	REV.

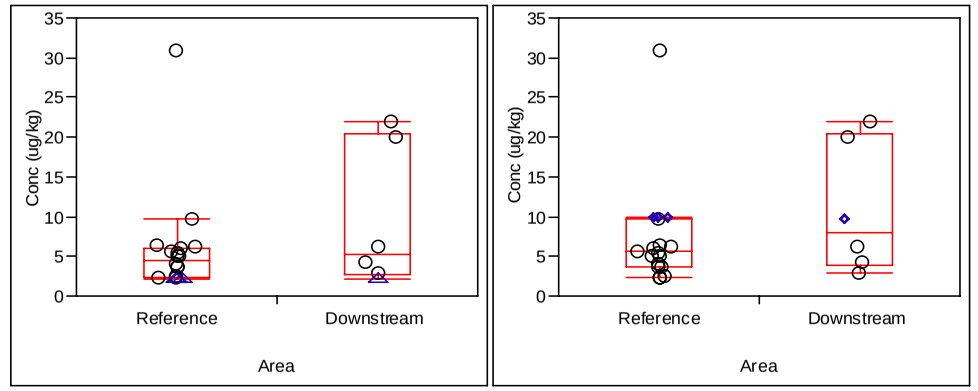
O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-8c PAHs in Downstream Sediment.dwg Nov 17, 2010 - 8:51am

BENZO(K)FLUORANTHENE



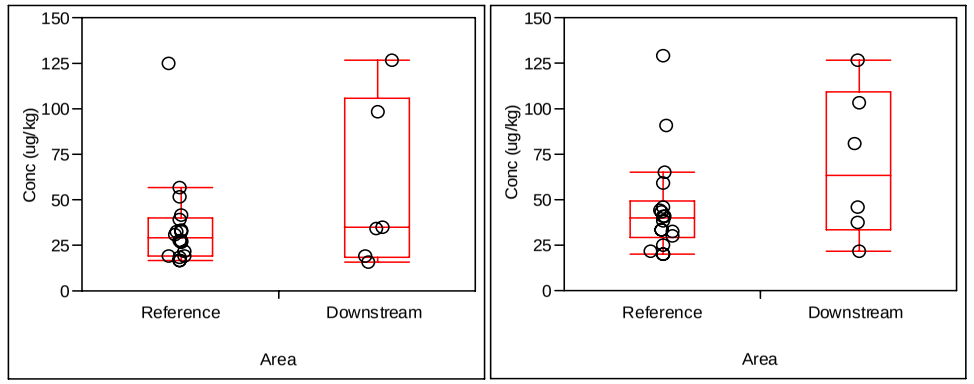
CENSORED AT MDL | CENSORED AT MRL

FLUORANTHENE



CENSORED AT MDL | CENSORED AT MRL

TOTAL HPAHs



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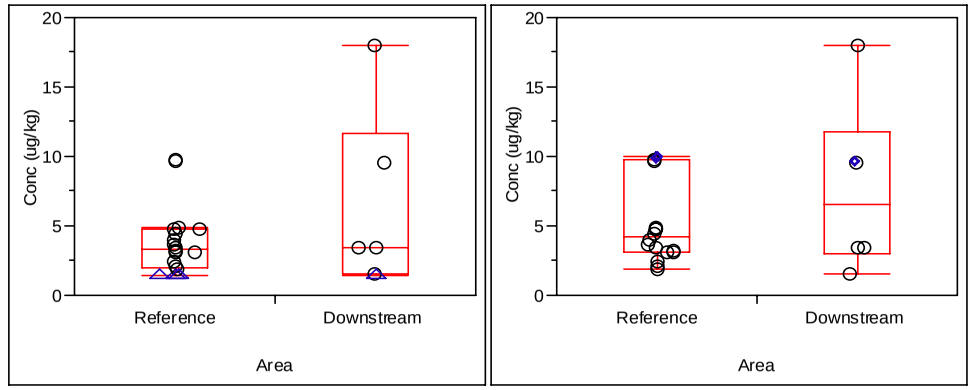
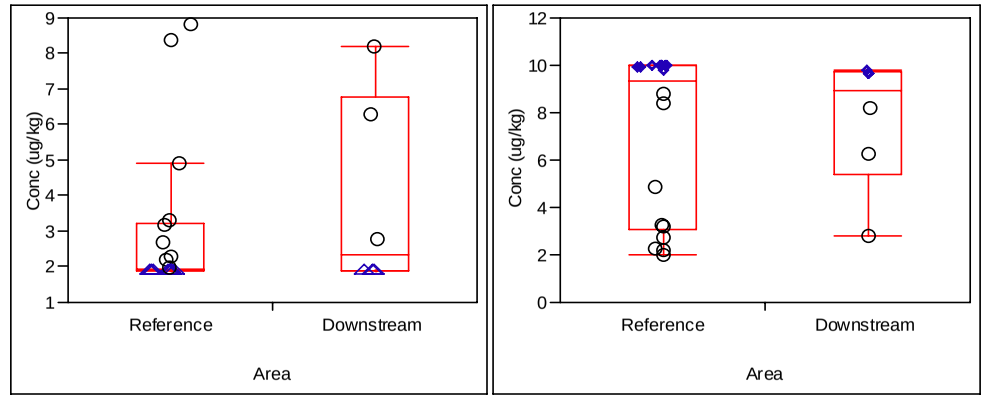
CHRYSENE



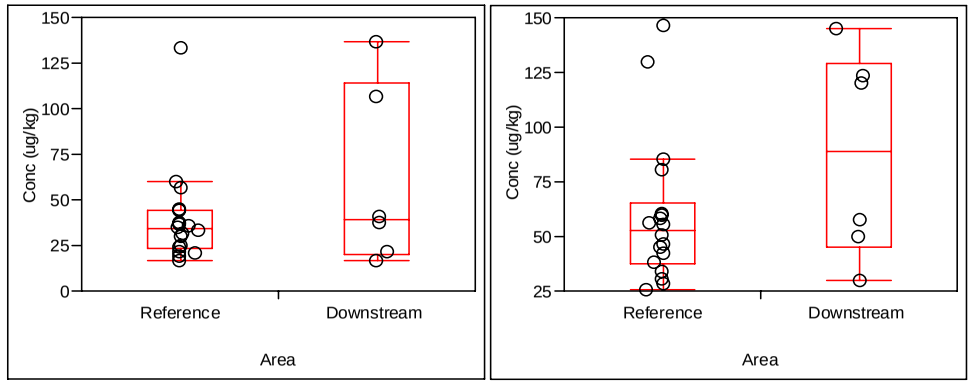
CENSORED AT MDL | CENSORED AT MRL

INDENO(1,2,3-CD)PYRENE



CENSORED AT MDL | CENSORED AT MRL

tPAH



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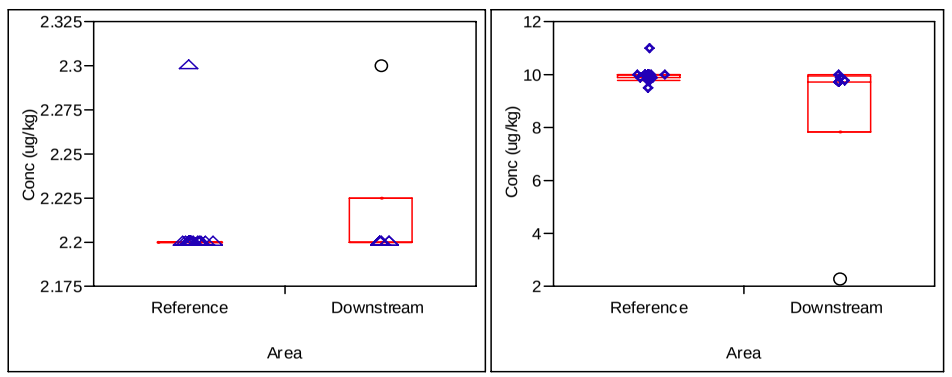
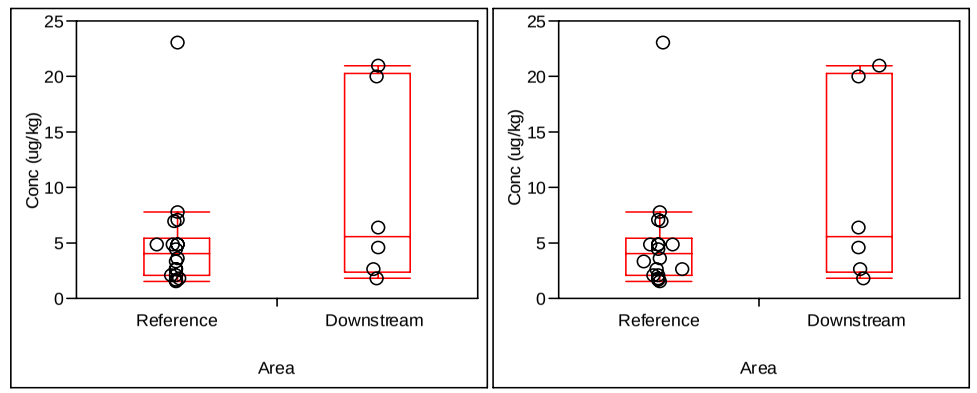
DIBENZ(A,H)ANTHRACENE



CENSORED AT MDL | CENSORED AT MRL

PYRENE



CENSORED AT MDL | CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No. 25696946 | SCALE: | DESIGNED: LSM | DRAWN BY: HP | CHECKED BY: LSM | PROJ. MANAGER: MP | APPROVED BY: LSM | DATE: NOV 2010

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PAHs IN DOWNSTREAM SEDIMENT

DRAWING NUMBER: FIG L-8d
CAD FILE NUMBER: FIG L-8d
SHEET: OF | REV.

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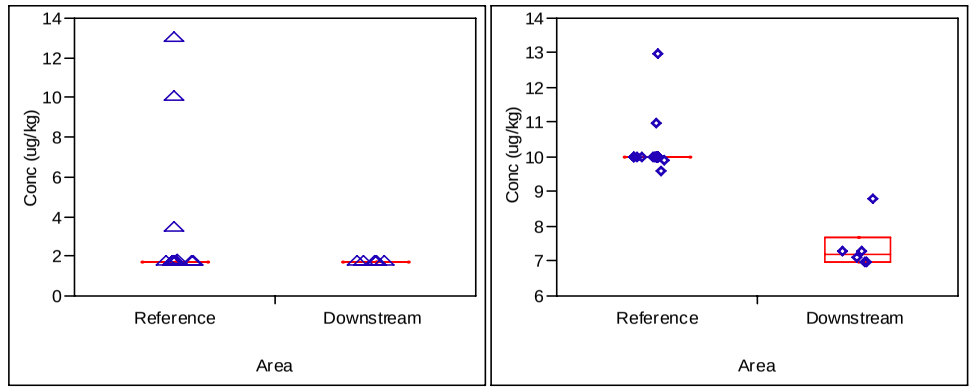

CENSORED AT MDL | CENSORED AT MRL

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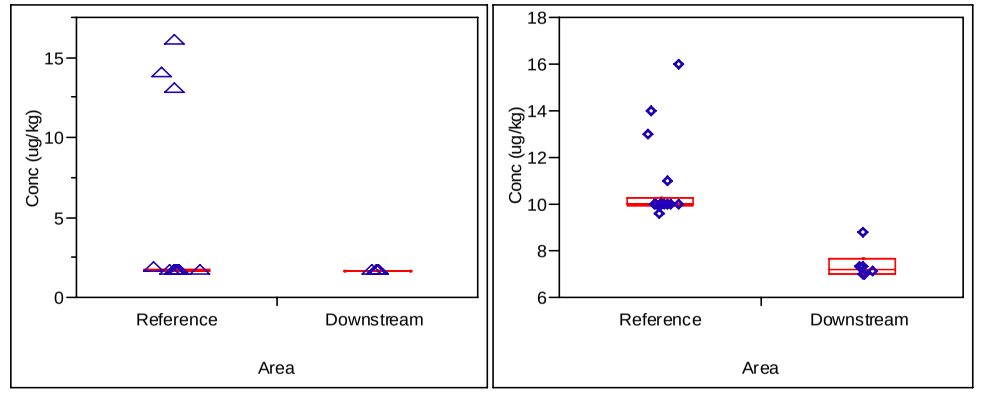

CENSORED AT MDL | CENSORED AT MRL

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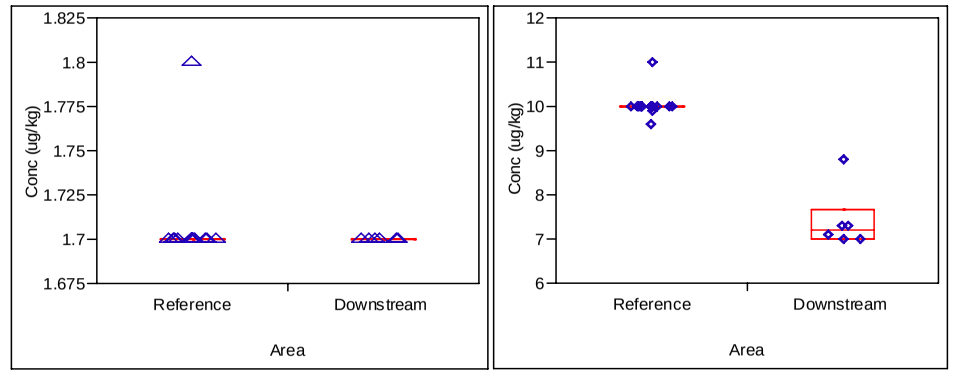

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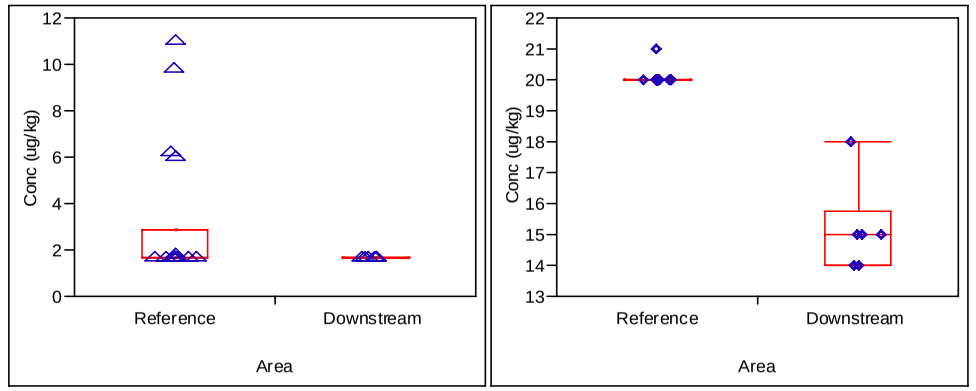

CENSORED AT MDL | CENSORED AT MRL

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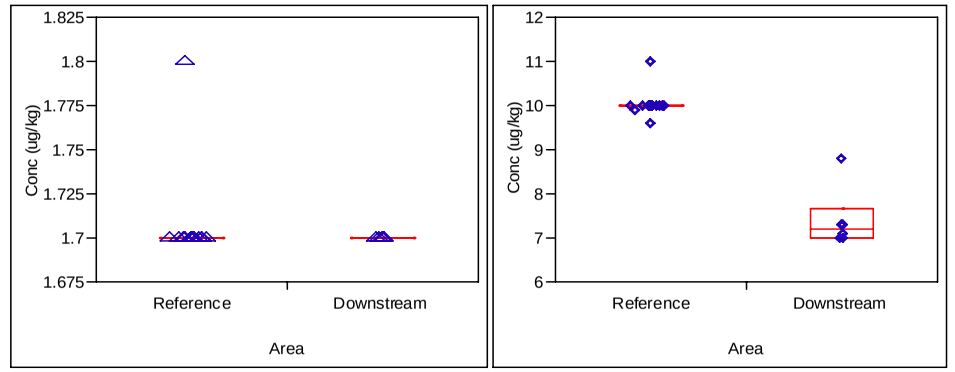

CENSORED AT MDL | CENSORED AT MRL

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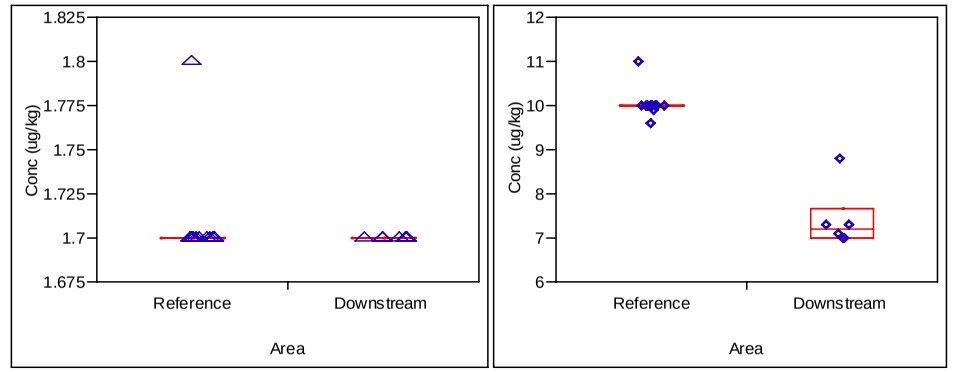

CENSORED AT MDL | CENSORED AT MRL

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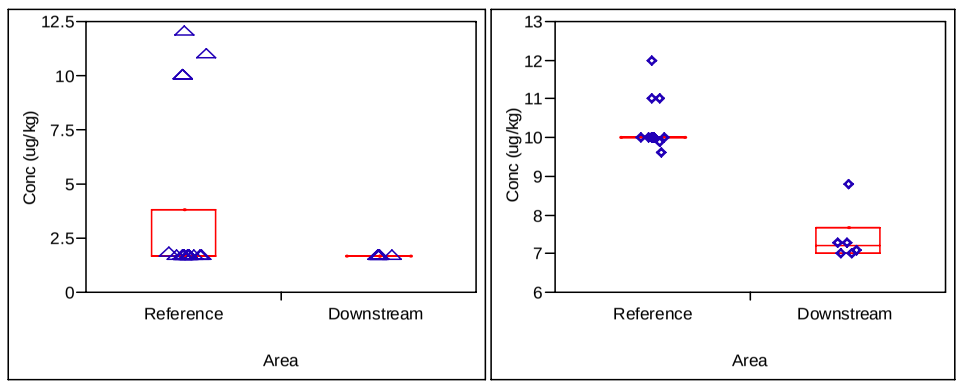

CENSORED AT MDL | CENSORED AT MRL

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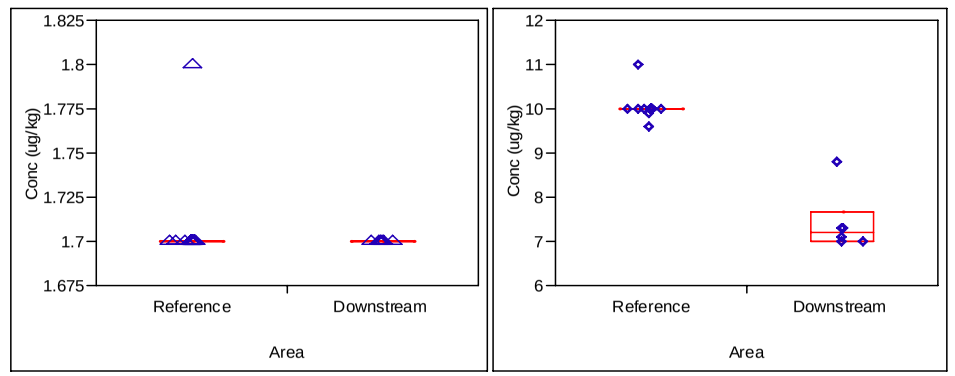

CENSORED AT MDL | CENSORED AT MRL

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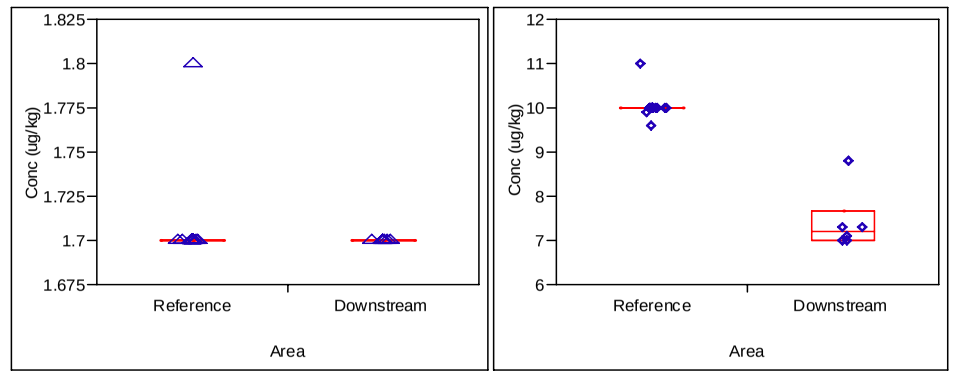

CENSORED AT MDL | CENSORED AT MRL

LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Method Detection Limit (MDL)
- ◇ Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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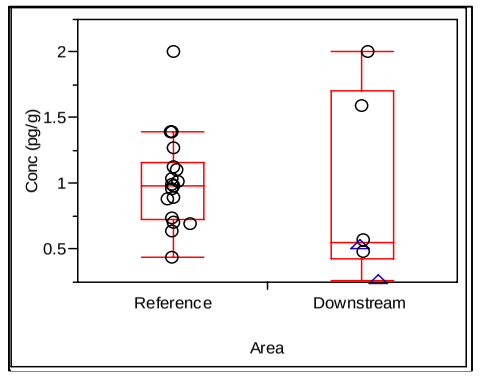
BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
PCB AROCLORS IN DOWNSTREAM SEDIMENT

DRAWING NUMBER:	
FIG L-8e	
CAD FILE NUMBER:	
FIG L-8e	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-8e PCB Aroclors in Downstream Sediment.dwg Nov 17, 2010 - 8:52am

PCB 77



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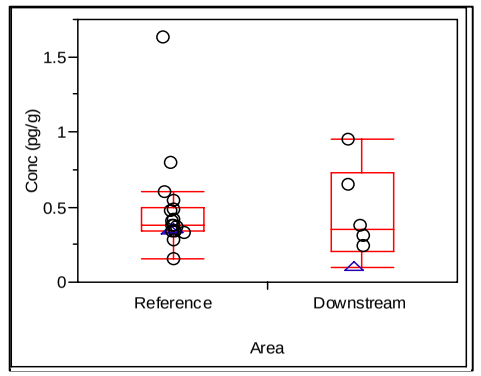

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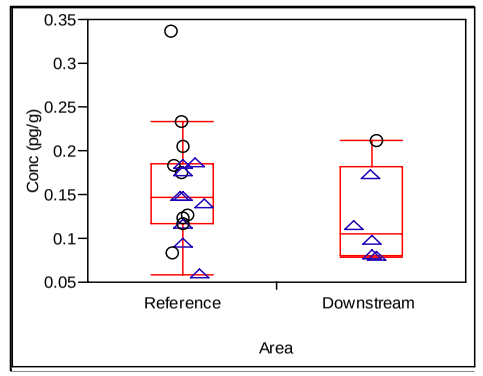

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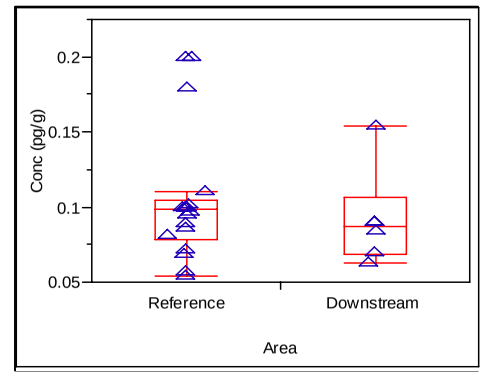

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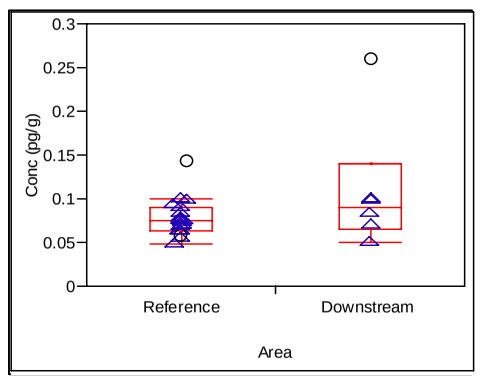

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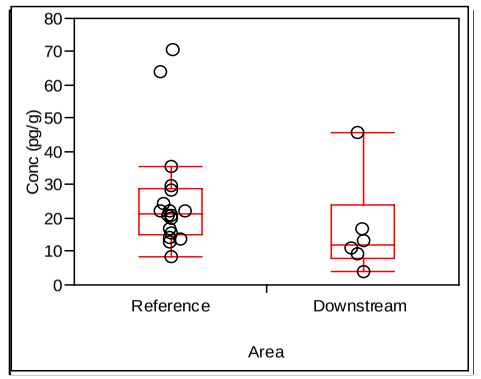

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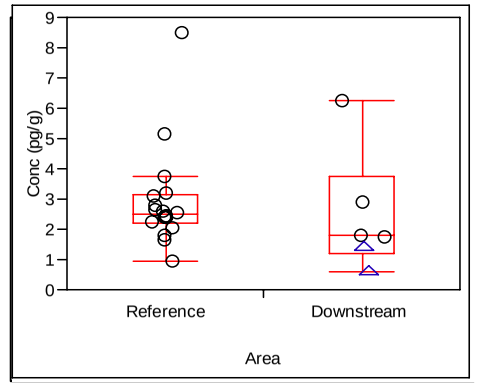

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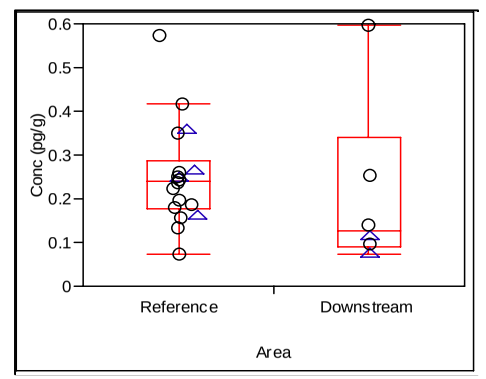

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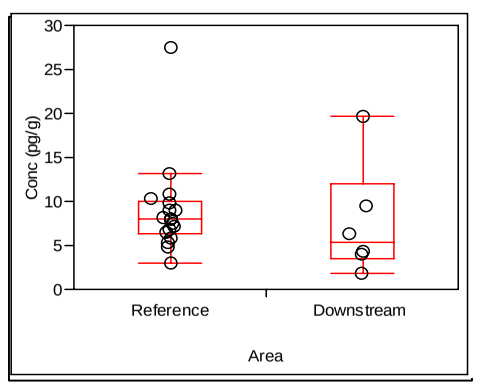

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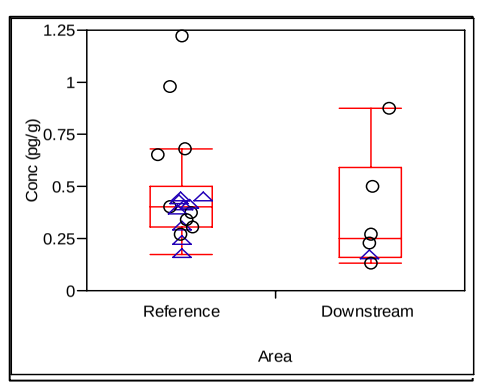

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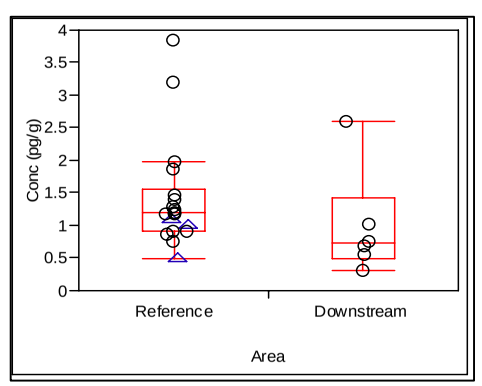
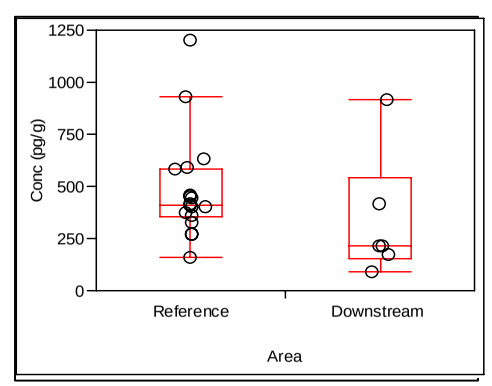


SUM 209 CONGENERS (KM-BASED)



LEGEND

- ○ Detected Result
- △ Non-Detect, Censored at Reported Detection Limit (RDL)
- □ EMPC Result, Censored at Reported Value

EMPC = The analyte was not positively identified; the associated numerical value is the Estimated Maximum Potential Concentration.

No.	DATE	BY	REVISION

JOB No.: 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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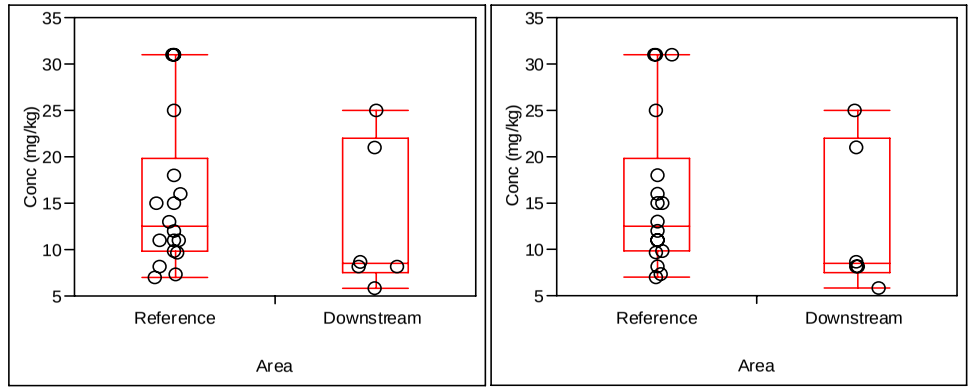
PCB CONGENERS IN DOWNSTREAM SEDIMENT

DRAWING NUMBER: FIG L-8f	
CAD FILE NUMBER: FIG L-8f	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-8f PCB Congeners in Downstream Sediment.dwg Nov 12, 2010 - 4:37pm

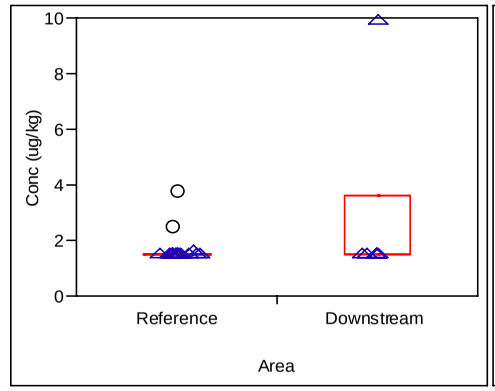
DIESEL RANGE ORGANICS



CENSORED AT MDL

CENSORED AT MRL

BUTYL BENZYL PHTHALATE



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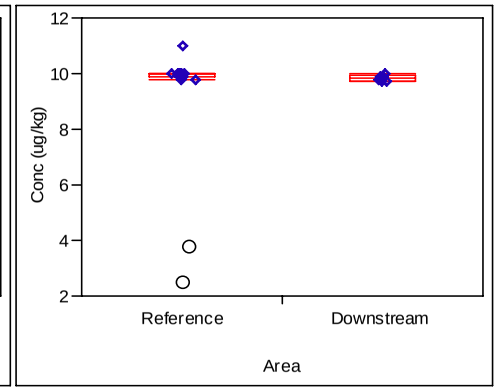
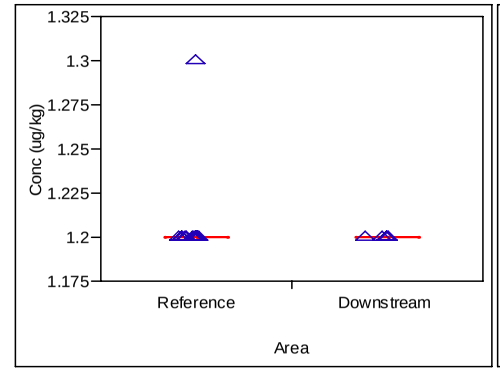


CENSORED AT MRL

DI-N-OCTYL PHTHALATE



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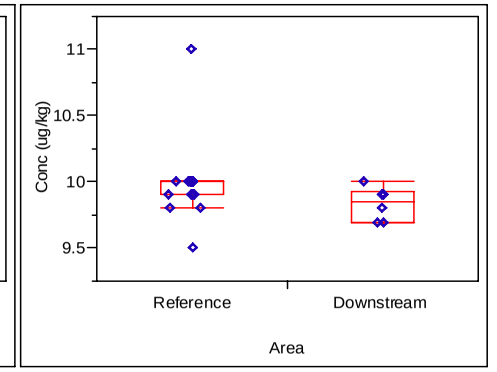
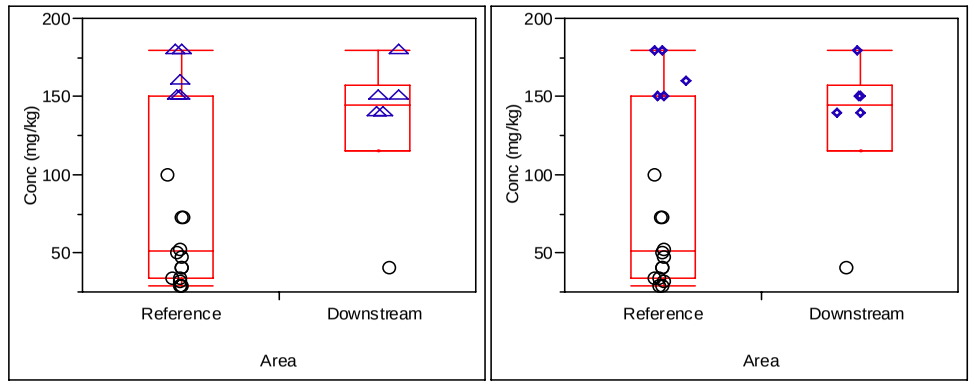


CENSORED AT MRL

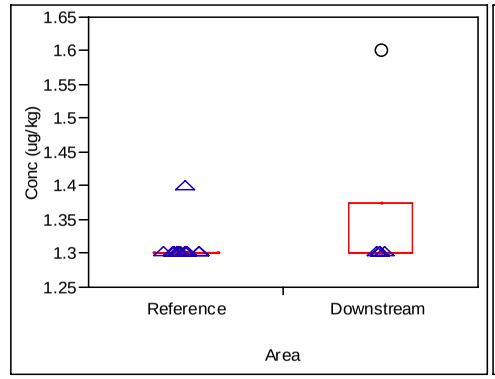
RESIDUAL RANGE ORGANICS



CENSORED AT MDL

CENSORED AT MRL

CARBAZOLE



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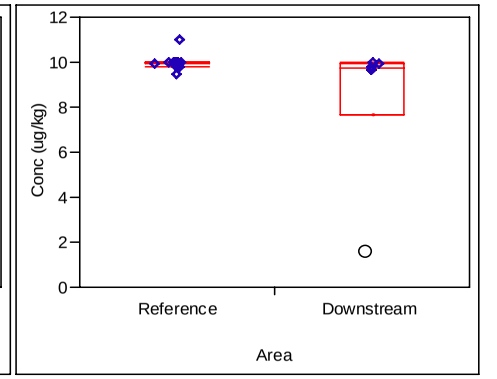
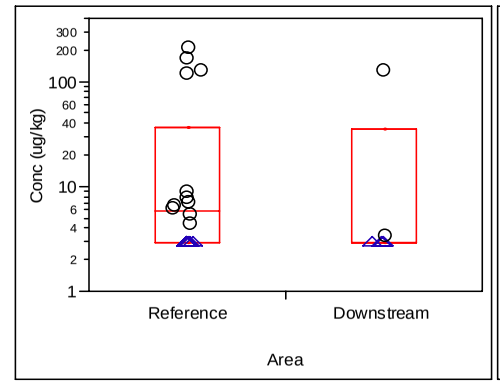


CENSORED AT MRL

P-CRESOL (4-METHYLPHENOL)



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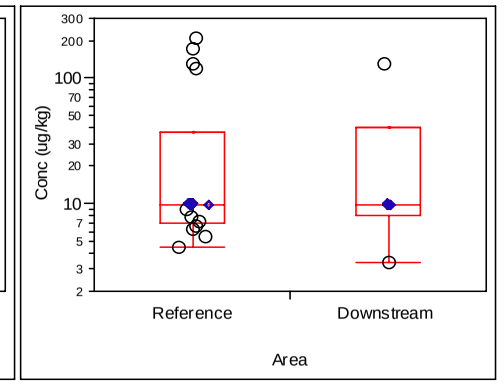
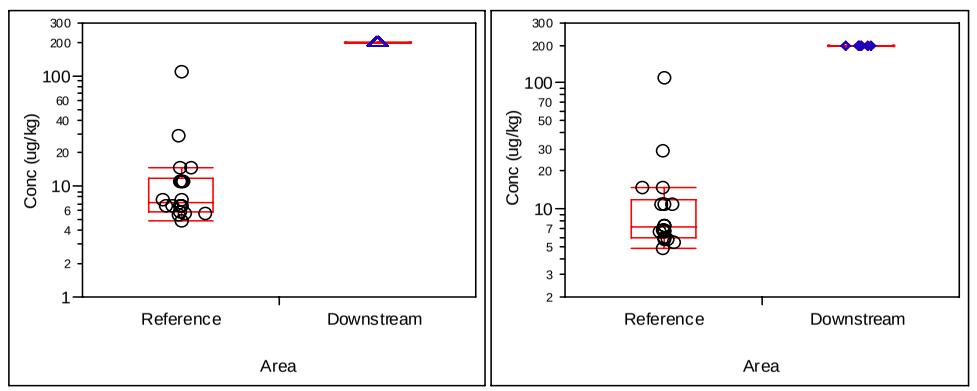


CENSORED AT MRL

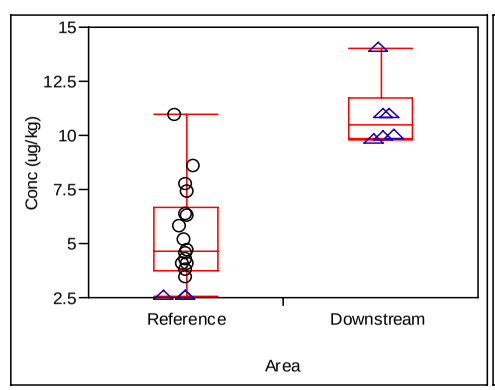
BIS(2-ETHYLHEXYL) PHTHALATE



CENSORED AT MDL

CENSORED AT MRL

DI-N-BUTYL PHTHALATE



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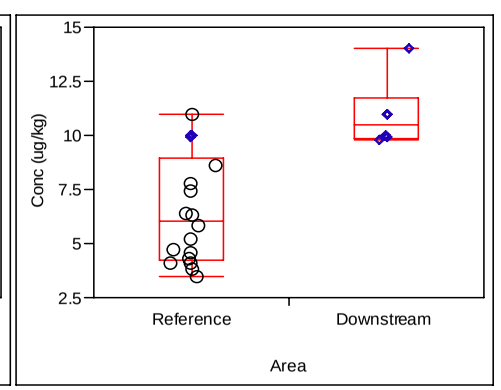

CENSORED AT MRL

LEGEND

- Detected Result
- Non-Detect, Censored at Method Detection Limit (MDL)
- Non-Detect, Censored at Method Reporting Limit (MRL)

No.	DATE	BY	REVISION

JOB No. 25696946	DESIGNED: LSM	PROJ. MANAGER: MP
SCALE:	DRAWN BY: HP	APPROVED BY: LSM
	CHECKED BY: LSM	DATE: NOV 2010

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BRADFORD ISLAND POST-REMOVAL COMPARISON RESULTS
SVOCs IN DOWNSTREAM SEDIMENT

DRAWING NUMBER:	
FIG L-8g	
CAD FILE NUMBER:	
FIG L-8g	
SHEET: OF	REV.

O:\25692709 USACE\53-F0072173.00 Brdford1\Ft.Worth DT-02\RI Report_Working Folder\RI Text\Figures\Appendix_L\FIG L-8g SVOCs in Downstream Sediment.dwg Nov 17, 2010 - 8:53am

APPENDIX M

HUMAN HEALTH RISK SCREENING ASSESSMENT

Table M-1
Identification of COPCs in Soil at Landfill AOPC - Adult Outdoor Worker
Bradford Island -Upland Operable Unit
(1 of 3)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-5)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-7)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
INORGANICS (mg/kg)											
Antimony	n	27%	1.48	410	0.00361	0.149	0.398	0.152	0.402	N	C/SLV <1
Arsenic	c	100%	10.5	5.4	1.94	274	578	276	580	Y	C/SLV >1
Cadmium	c	74%	1.17	500	0.00234	0.106	-	0.108	0.00234	N	C/SLV <1
Lead	n	100%	511	800	0.639	0.853	-	1.49	0.639	Y	mm C/SLV >1
Mercury	n	80%	1.45	310	0.00468	0.00699	-	0.0117	0.00468	N	C/SLV <1
Silver	n	39%	0.450	5,100	0.0000882	0.00153	-	0.00162	0.0000882	N	C/SLV <1
Zinc	n	100%	417	310,000	0.00135	0.188	0.280	0.190	0.281	N	C/SLV <1
BUTYLTINS (ug/kg)											
Dibutyltin	n	22%	20.1	180,000	0.000112	0.00533	-	0.00544	0.000112	N	C/SLV <1
Monobutyltin	n	22%	38.0	180,000	0.000211	0.00231	-	0.00252	0.000211	N	C/SLV <1
Tributyltin	n	44%	60.1	180,000	0.000334	0.00331	-	0.00364	0.000334	N	C/SLV <1
PESTICIDES (ug/kg)											
4,4'-DDT	c	30%	11.8	7,700	0.00153	-	-	0.00153	0.00153	N	C/SLV <1
Chlordane (technical)	c	100%	1,560	7,200	0.217	-	-	0.217	0.217	N	C/SLV <1
Heptachlor	c	9%	2.86	480	0.00596	-	-	0.00596	0.00596	N	C/SLV <1
PCBs (ug/kg)											
Aroclor 1248	c	7%	364	740	0.492	-	-	0.492	0.492	N	C/SLV <1
Aroclor 1254	c	38%	31.1	740	0.0420	-	-	0.0420	0.0420	N	C/SLV <1
Aroclor 1260	c	83%	190	740	0.257	-	-	0.257	0.257	N	C/SLV <1
Total PCBs (Aroclors)	c	55%	410	740	0.554	-	-	0.554	0.554	N	C/SLV <1
HERBICIDES (ug/kg)											
2,4,5-T	n	14%	70.3	6,200,000	0.0000113	-	-	0.0000113	0.0000113	N	C/SLV <1
Dichloroprop	n	14%	174	4,900,000	0.0000355	-	-	0.0000355	0.0000355	N	C/SLV <1
MCPP	n	14%	11,200	620,000	0.0181	-	-	0.0181	0.0181	N	C/SLV <1
VOCs (ug/kg)											
1,2,4-Trimethylbenzene	n	15%	2,790	980,000	0.00285	0.347	-	0.350	0.00285	N	C/SLV <1
1,3,5-Trimethylbenzene	n	15%	1,110	1,600,000	0.000694	-	-	0.000694	0.000694	N	C/SLV <1
Naphthalene	c	15%	3,830	23,000	0.167	-	-	0.167	0.167	N	C/SLV <1
Tetrachloroethene (PCE)	c	58%	16.5	5,100	0.00324	30.1	4.06	NE	NE	N	C/SLV <1
Toluene	n	42%	1.64	77,000,000	0.0000000213	-	-	0.0000000213	0.0000000213	N	C/SLV <1
SVOCs (ug/kg)											
Benzoic Acid	n	36%	218	2,500,000,000	0.0000000872	-	-	0.0000000872	0.0000000872	N	C/SLV <1
Bis(2-ethylhexyl) Phthalate	c	90%	6,380	150,000	0.0425	1.15	3.92	NE	NE	N	C/SLV <1
Butyl Benzyl Phthalate	c	11%	34.9	910,000	0.0000384	-	-	0.0000384	0.0000384	N	C/SLV <1
Carbazole	c	72%	964	1,000,000	0.000964	-	-	0.000964	0.000964	N	C/SLV <1
Dibenzofuran	n	45%	164	1,000,000	0.000164	-	-	0.000164	0.000164	N	C/SLV <1
Diethyl Phthalate	n	18%	38.9	490,000,000	0.0000000794	0.0000301	0.0000514	0.0000302	0.0000514	N	C/SLV <1
Di-n-butyl Phthalate	n	14%	217	62,000,000	0.00000350	-	-	0.00000350	0.00000350	N	C/SLV <1

Table M-1
Identification of COPCs in Soil at Landfill AOPC - Adult Outdoor Worker
Bradford Island -Upland Operable Unit
(2 of 3)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-5)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-7)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
Pentachlorophenol	c	7%	98.8	13,000	0.00760	0.238	0.415	0.246	0.422	N	C/SLV <1
PAHs (ug/kg)											
2-Methylnaphthalene	n	31%	199	4,100,000	0.0000485	0.00117	0.000261	0.00122	0.000310	N	C/SLV <1
Acenaphthene	n	76%	913	61,000,000	0.0000150	0.0000718	0.000236	0.0000868	0.000251	N	C/SLV <1
Acenaphthylene	n	39%	34.9	23,000	0.00152	-	-	0.00152	0.00152	N	C/SLV <1
Anthracene	n	88%	1,930	170,000,000	0.0000114	-	-	0.0000114	0.0000114	N	C/SLV <1
Benzo(a)anthracene	c	94%	9,960	2,700	3.69	-	-	3.69	3.69	Y	C/SLV >1
Benzo(a)pyrene	c	94%	11,200	270	41.5	-	-	41.5	41.5	Y	C/SLV >1
Benzo(b)fluoranthene	c	96%	15,200	2,700	5.63	-	-	5.63	5.63	Y	C/SLV >1
Benzo(g,h,i)perylene	c	91%	5,820	27,000	0.216	-	-	0.216	0.216	N	C/SLV <1
Benzo(k)fluoranthene	c	96%	26,300	27,000	0.974	-	-	0.974	0.974	N	C/SLV <1
Benzofluoranthenes, Total	c	100%	31,300	2,700	11.6	-	-	11.6	11.6	Y	C/SLV >1
Chrysene	c	97%	11,000	270,000	0.0407	-	-	0.0407	0.0407	N	C/SLV <1
Dibenz(a,h)anthracene	c	85%	2,060	270	7.63	-	-	7.63	7.63	Y	C/SLV >1
Fluoranthene	n	94%	17,500	29,000,000	0.000603	-	-	0.000603	0.000603	N	C/SLV <1
Fluorene	n	67%	324	41,000,000	0.00000790	-	-	0.00000790	0.00000790	N	C/SLV <1
Indeno(1,2,3-cd)pyrene	c	91%	6,800	2,700	2.52	-	-	2.52	2.52	Y	C/SLV >1
Naphthalene	c	52%	157	23,000	0.00683	0.624	0.000130	0.630	0.00696	N	C/SLV <1
Phenanthrene	n	97%	5,780	170,000,000	0.0000340	0.0000537	0.0000712	0.0000877	0.000105	N	C/SLV <1
Pyrene	n	97%	18,800	21,000,000	0.000895	-	-	0.000895	0.000895	N	C/SLV <1
TPH (mg/kg)											
Diesel Range Organics	n	95%	1,000	70,000	0.0143	4.31	-	NE	0.0143	N	C/SLV <1
Gasoline Range Organics	n	27%	157	22,000	0.00714	0.604	-	0.611	0.00714	N	C/SLV <1
Residual Range Organics	n	95%	9,450	40,000	0.236	1.19	-	NE	0.236	N	C/SLV <1
Sum cPAH C/RBC (ELCR)					**6.1E-05**						
Sum non-carcinogenic C/RBC (HI)					**0.293**						
Sum carcinogenic C/RBC (ELCR)					**6.3E-05**						

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on Csoil/SLVsoil only (i.e. single medium).
ft bgs = feet below surface
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/kg = milligrams per kilogram
mm = multimedia

Table M-1
Identification of COPCs in Soil at Landfill AOPC - Adult Outdoor Worker
Bradford Island -Upland Operable Unit
(3 of 3)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-5)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-7)	Multimedia (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$	Multimedia (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$		

n = non-carcinogen
NE = Multi-media was not evaluated since the chemical is already identified as a COPC.
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, and 4. Surrogates used as noted in Appendix J-4b.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.
For inorganics, the higher of the 95% Upper Prediction Limit (UPL) and lowest HH SLV was selected as the HH SLV. For all other analytes the heirarchy described above was used.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum cPAH C/RBC (ELCR) = includes only individual carcinogenic polyaromatic hydrocarbons selected as a COPC. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation.
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation. Total aroclors, rather than individual aroclors, was used in the summation.
Ratios for SLVs based on Reference Upper Prediction Limits (UPLs) are not included in sum totals.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-2
Identification of COPCs in Soil at Landfill AOPC - Construction Worker
Bradford Island -Upland Operable Unit
(1 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-4)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-7)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
INORGANICS (mg/kg)											
Antimony	n	56%	2.05	410	0.00500	0.149	0.398	0.154	0.403	N	C/SLV <1
Cadmium	c	84%	1.37	150	0.00913	0.0000335	-	0.00917	0.00913	N	C/SLV <1
Lead	n	100%	796	800	0.995	-	-	0.995	0.995	N	C/SLV <1
Mercury	n	87%	1.02	93	0.0110	0.135	-	0.146	0.0110	N	C/SLV <1
Nickel	c	100%	455	6,100	0.0746	0.00000975	0.192	0.0746	0.266	N	C/SLV <1
Selenium	n	30%	0.262	5,100	0.0000514	0.0473	0.0501	0.0474	0.0502	N	C/SLV <1
Silver	n	62%	0.506	1,500	0.000337	0.000000276	-	0.000338	0.000337	N	C/SLV <1
Zinc	n	100%	245	310,000	0.000790	0.188	0.280	0.189	0.281	N	C/SLV <1
BUTYLTINS (ug/kg)											
Dibutyltin	n	9%	20.0	180,000	0.000111	0.00533	-	0.00544	0.000111	N	C/SLV <1
Monobutyltin	n	9%	38.0	180,000	0.000211	0.00231	-	0.00252	0.000211	N	C/SLV <1
Tributyltin	n	18%	27.1	180,000	0.000151	0.00331	-	0.00346	0.000151	N	C/SLV <1
PESTICIDES (ug/kg)											
4,4'-DDT	c	23%	10.5	58,000	0.000181	-	-	0.000181	0.000181	N	C/SLV <1
Chlordane (technical)	c	60%	1,220	55,000	0.0222	-	-	0.0222	0.0222	N	C/SLV <1
Heptachlor	c	7%	2.86	3,700	0.000773	-	-	0.000773	0.000773	N	C/SLV <1
PCBs (ug/kg)											
Aroclor 1254	c	37%	60.4	740	0.0816	-	-	0.0816	0.0816	N	C/SLV <1
Aroclor 1260	c	84%	161	740	0.218	-	-	0.218	0.218	N	C/SLV <1
Total PCBs (Aroclors)	c	84%	283	740	0.382	-	-	0.382	0.382	N	C/SLV <1
HERBICIDES (ug/kg)											
2,4,5-T	n	10%	67.8	6,200,000	0.0000109	-	-	0.0000109	0.0000109	N	C/SLV <1
Dichloroprop	n	10%	172	4,900,000	0.0000351	-	-	0.0000351	0.0000351	N	C/SLV <1
MCPP	n	10%	10,400	620,000	0.0168	-	-	0.0168	0.0168	N	C/SLV <1
VOCs (ug/kg)											
1,1-Dichloroethene	n	0%	-	12,000,000	-	-	-	-	-	Y	PCE is a COPC (1)
1,2,4-Trimethylbenzene	n	15%	1,620	2,000,000	0.000810	0.00306	-	0.00387	0.000810	N	C/SLV <1
1,3,5-Trimethylbenzene	n	11%	906	1,500,000	0.000604	-	-	0.000604	0.000604	N	C/SLV <1
cis-1,2-Dichloroethene	n	0%	-	3,100,000	-	-	-	-	-	Y	PCE is a COPC (1)
Ethylbenzene	c	7%	1,480	1,600,000	0.000925	-	-	0.000925	0.000925	N	C/SLV <1
m,p-Xylenes	n	7%	5,380	19,000,000	0.000283	-	-	0.000283	0.000283	N	C/SLV <1
Naphthalene	c	11%	2,980	580,000	0.00514	-	-	0.00514	0.00514	N	C/SLV <1
o-Xylene	n	9%	1,580	19,000,000	0.0000832	-	-	0.0000832	0.0000832	N	C/SLV <1
Tetrachloroethene (PCE)	c	71%	127,000	40,000	3.18	0.0117	4.06	3.19	7.23	Y	C/SLV >1

Table M-2
Identification of COPCs in Soil at Landfill AOPC - Construction Worker
Bradford Island -Upland Operable Unit
(2 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-4)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-7)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
Toluene	n	54%	42,100	24,000,000	0.00175	-	-	0.00175	0.00175	N	C/SLV <1
trans-1,2-Dichloroethene	n	0%	-	4,500,000	-	-	-	-	-	Y	PCE is a COPC (1)
Trichloroethene (TCE)	c	0%	-	43,000	-	-	-	-	-	Y	PCE is a COPC (1)
Vinyl Chloride	c	0%	-	30,000	-	0.000256	12.3	0.000256	NE	Y	PCE is a COPC (1)
SVOCs (ug/kg)											
Benzoic Acid	n	31%	176	2,500,000,000	0.0000000704	-	-	0.0000000704	0.0000000704	N	C/SLV <1
Bis(2-ethylhexyl) Phthalate	c	92%	4,260	1,200,000	0.00355	0.979	3.92	0.983	NE	N	C/SLV <1
Butyl Benzyl Phthalate	c	14%	42.7	910,000	0.0000469	-	-	0.0000469	0.0000469	N	C/SLV <1
Carbazole	c	72%	909	1,000,000	0.000909	-	-	0.000909	0.000909	N	C/SLV <1
Dibenzofuran	n	50%	138	1,000,000	0.000138	-	-	0.000138	0.000138	N	C/SLV <1
Diethyl Phthalate	n	17%	36.1	490,000,000	0.0000000737	0.0000301	0.0000514	0.0000302	0.0000514	N	C/SLV <1
Di-n-butyl Phthalate	n	11%	180	62,000,000	0.00000290	-	-	0.00000290	0.00000290	N	C/SLV <1
Pentachlorophenol	c	6%	90.7	100,000	0.000907	0.00215	0.415	0.00306	0.416	N	C/SLV <1
PAHs (ug/kg)											
2-Methylnaphthalene	n	33%	170	4,100,000	0.0000415	0.00117	0.000261	0.00121	0.000303	N	C/SLV <1
Acenaphthene	n	77%	915	19,000,000	0.0000482	0.0000718	0.000236	0.000120	0.000284	N	C/SLV <1
Acenaphthylene	n	43%	31.7	580,000	0.0000547	-	-	0.0000547	0.0000547	N	C/SLV <1
Anthracene	n	89%	2,370	93,000,000	0.0000255	-	-	0.0000255	0.0000255	N	C/SLV <1
Benzo(a)anthracene	c	95%	11,100	21,000	0.529	-	-	0.529	0.529	N	C/SLV <1
Benzo(a)pyrene	c	95%	10,800	2,100	5.14	-	-	5.14	5.14	Y	C/SLV >1
Benzo(b)fluoranthene	c	96%	15,200	21,000	0.724	-	-	0.724	0.724	N	C/SLV <1
Benzo(g,h,i)perylene	c	93%	5,540	210,000	0.0264	-	-	0.0264	0.0264	N	C/SLV <1
Benzo(k)fluoranthene	c	96%	26,300	210,000	0.125	-	-	0.125	0.125	N	C/SLV <1
Benzofluoranthenes, Total	c	100%	13,100	21,000	0.624	-	-	0.624	0.624	N	C/SLV <1
Chrysene	c	98%	11,000	2,100,000	0.00524	-	-	0.00524	0.00524	N	C/SLV <1
Dibenz(a,h)anthracene	c	82%	2,080	2,100	0.990	-	-	0.990	0.990	N	C/SLV <1
Fluoranthene	n	95%	17,900	8,900,000	0.00201	-	-	0.00201	0.00201	N	C/SLV <1
Fluorene	n	73%	500	12,000,000	0.0000417	-	-	0.0000417	0.0000417	N	C/SLV <1
Indeno(1,2,3-cd)pyrene	c	93%	6,510	21,000	0.310	-	-	0.310	0.310	N	C/SLV <1
Naphthalene	c	55%	319	580,000	0.000550	0.000175	0.000130	0.000725	0.000680	N	C/SLV <1
Phenanthrene	n	95%	5,700	93,000,000	0.0000613	0.0000537	0.0000712	0.000115	0.000132	N	C/SLV <1
Pyrene	n	98%	19,800	6,700,000	0.00296	-	-	0.00296	0.00296	N	C/SLV <1
TPH (mg/kg)											
Diesel Range Organics	n	88%	5,270	23,000	0.229	-	-	0.229	0.229	N	C/SLV <1
Gasoline Range Organics	n	27%	105	13,000	0.00808	0.00465	-	0.0127	0.00808	N	C/SLV <1
Residual Range Organics	n	94%	24,700	40,000	0.618	-	-	0.618	0.618	N	C/SLV <1
Sum cPAH C/RBC (ELCR)					**5.1E-06**						

Table M-2
Identification of COPCs in Soil at Landfill AOPC - Construction Worker
Bradford Island -Upland Operable Unit
(3 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-4)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-7)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
Sum non-carcinogenic C/RBC (HI)					**0.898**						
Sum carcinogenic C/RBC (ELCR)					**1.2E-05**						

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on Csoil/SLVsoil only (i.e. single medium).
ft bgs = feet below surface
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/kg = milligrams per kilogram
mm = multimedia
n = non-carcinogen
NE = multi-media was not evaluated since the chemical is already identified as a COPC.
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table except for degradation products of PCE (see footnote 2). Reporting limits for non-detected chemicals are evaluated separately.
Construction Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Construction,. 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Screening Levels Values for Groundwater: 1. DEQ Groundwater in Excavation Construction/Excavation RBCs (Appendix J-4b), 2. USEPA Tapwater RSL, and 3. Surrogates used as noted in Appendix J-4b.

Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.
For inorganics, the higher of the 95% Upper Prediction Limit (UPL) and lowest HH SLV was selected as the HH SLV. For all other analytes the heirarchy described above was used.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a).

Table M-2
Identification of COPCs in Soil at Landfill AOPC - Construction Worker
Bradford Island -Upland Operable Unit
(4 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-4)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-7)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum cPAH C/RBC (ELCR) = includes only individual carcinogenic polyaromatic hydrocarbons selected as a COPC. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation.
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation. Total aroclors, rather than individual aroclors, was used in the summation.
Ratios for SLVs based on Reference Upper Prediction Limits (UPLs) are not included in sum totals.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-3
Identification of COPCs in Soil at Landfill AOPC - Excavation Worker
Bradford Island -Upland Operable Unit
(1 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-4)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-7)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
INORGANICS (mg/kg)											
Antimony	n	56%	2.05	410	0.00500	0.149	0.398	0.154	0.403	N	C/SLV <1
Cadmium	c	84%	1.37	4,300	0.000319	0.0000335	-	0.000352	0.000319	N	C/SLV <1
Lead	n	100%	796	800	0.995	-	-	0.995	0.995	N	C/SLV <1
Mercury	n	87%	1.02	2,600	0.000392	0.135	-	0.135	0.000392	N	C/SLV <1
Nickel	c	100%	455	20,000	0.0228	0.00000975	0.192	0.0228	0.215	N	C/SLV <1
Selenium	n	30%	0.262	5,100	0.0000514	0.0473	0.0501	0.0474	0.0502	N	C/SLV <1
Silver	n	62%	0.506	43,000	0.0000118	0.000000276	-	0.0000120	0.0000118	N	C/SLV <1
Zinc	n	100%	245	310,000	0.000790	0.188	0.280	0.189	0.281	N	C/SLV <1
BUTYLTINS (ug/kg)											
Dibutyltin	n	9%	20.0	180,000	0.000111	0.00533	-	0.00544	0.000111	N	C/SLV <1
Monobutyltin	n	9%	38.0	180,000	0.000211	0.00231	-	0.00252	0.000211	N	C/SLV <1
Tributyltin	n	18%	27	180,000	0.000151	0.00331	-	0.00346	0.000151	N	C/SLV <1
PESTICIDES (ug/kg)											
4,4'-DDT	c	23%	10.5	1,600,000	0.00000656	-	-	0.00000656	0.00000656	N	C/SLV <1
Chlordane (technical)	c	60%	1,220	1,500,000	0.000813	-	-	0.000813	0.000813	N	C/SLV <1
Heptachlor	c	7%	2.86	100,000	0.0000286	-	-	0.0000286	0.0000286	N	C/SLV <1
PCBs (ug/kg)											
Aroclor 1254	c	37%	60.4	740	0.0816	-	-	0.0816	0.0816	N	C/SLV <1
Aroclor 1260	c	84%	161	740	0.218	-	-	0.218	0.218	N	C/SLV <1
Total PCBs (Aroclors)	c	84%	283	740	0.382	-	-	0.382	0.382	N	C/SLV <1
HERBICIDES (ug/kg)											
2,4,5-T	n	10%	67.8	6,200,000	0.0000109	-	-	0.0000109	0.0000109	N	C/SLV <1
Dichloroprop	n	10%	172	4,900,000	0.0000351	-	-	0.0000351	0.0000351	N	C/SLV <1
MCPP	n	10%	10,400	620,000	0.0168	-	-	0.0168	0.0168	N	C/SLV <1
VOCs (ug/kg)											
1,2,4-Trimethylbenzene	n	15%	1,620	54,000,000	0.0000300	0.00306	-	0.00309	0.0000300	N	C/SLV <1
1,3,5-Trimethylbenzene	n	11%	906	42,000,000	0.0000216	-	-	0.0000216	0.0000216	N	C/SLV <1
Ethylbenzene	c	7%	1,480	44,000,000	0.0000336	-	-	0.0000336	0.0000336	N	C/SLV <1
m,p-Xylenes	n	7%	5,380	2,700,000	0.00199	-	-	0.00199	0.00199	N	C/SLV <1
Naphthalene	c	11%	2,980	16,000,000	0.000186	-	-	0.000186	0.000186	N	C/SLV <1
o-Xylene	n	9%	1,580	19,000,000	0.0000832	-	-	0.0000832	0.0000832	N	C/SLV <1
Tetrachloroethene (PCE)	c	71%	127,000	1,100,000	0.115	0.0117	4.06	0.127	NE	N	C/SLV <1
Toluene	n	54%	42,100	45,000,000	0.000936	-	-	0.000936	0.000936	N	C/SLV <1

Table M-3
Identification of COPCs in Soil at Landfill AOPC - Excavation Worker
Bradford Island -Upland Operable Unit
(2 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-4)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-7)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
SVOCs (ug/kg)											
Benzoic Acid	n	31%	176	2,500,000,000	0.0000000704	-	-	0.0000000704	0.0000000704	N	C/SLV <1
Bis(2-ethylhexyl) Phthalate	c	92%	4,260	33,000,000	0.000129	0.979	3.92	0.979	NE	N	C/SLV <1
Butyl Benzyl Phthalate	c	14%	42.7	910,000	0.0000469	-	-	0.0000469	0.0000469	N	C/SLV <1
Carbazole	c	72%	909	1,000,000	0.000909	-	-	0.000909	0.000909	N	C/SLV <1
Dibenzofuran	n	50%	138	1,000,000	0.000138	-	-	0.000138	0.000138	N	C/SLV <1
Diethyl Phthalate	n	17%	36.1	490,000,000	0.0000000737	0.0000301	0.0000514	0.0000302	0.0000514	N	C/SLV <1
Di-n-butyl Phthalate	n	11%	180	62,000,000	0.00000290	-	-	0.00000290	0.00000290	N	C/SLV <1
Pentachlorophenol	c	6%	90.7	2,900,000	0.0000313	0.00215	0.415	0.00219	0.415	N	C/SLV <1
PAHs (ug/kg)											
2-Methylnaphthalene	n	33%	170	4,100,000	0.0000415	0.00117	0.000261	0.00121	0.000303	N	C/SLV <1
Acenaphthene	n	77%	915	33,000,000	0.0000277	0.0000718	0.000236	0.000100	0.000264	N	C/SLV <1
Acenaphthylene	n	43%	31.7	16,000,000	0.00000198	-	-	0.00000198	0.00000198	N	C/SLV <1
Anthracene	n	89%	2,370	170,000,000	0.0000139	-	-	0.0000139	0.0000139	N	C/SLV <1
Benzo(a)anthracene	c	95%	11,100	590,000	0.0188	-	-	0.0188	0.0188	N	C/SLV <1
Benzo(a)pyrene	c	95%	10,800	59,000	0.183	-	-	0.183	0.183	N	C/SLV <1
Benzo(b)fluoranthene	c	96%	15,200	590,000	0.0258	-	-	0.0258	0.0258	N	C/SLV <1
Benzo(g,h,i)perylene	c	93%	5,540	5,900,000	0.000939	-	-	0.000939	0.000939	N	C/SLV <1
Benzo(k)fluoranthene	c	96%	26,300	5,900,000	0.00446	-	-	0.00446	0.00446	N	C/SLV <1
Benzofluoranthenes, Total	c	100%	13,100	590,000	0.0222	-	-	0.0222	0.0222	N	C/SLV <1
Chrysene	c	98%	11,000	59,000,000	0.000186	-	-	0.000186	0.000186	N	C/SLV <1
Dibenz(a,h)anthracene	c	82%	2,080	59,000	0.0353	-	-	0.0353	0.0353	N	C/SLV <1
Fluoranthene	n	95%	17,900	22,000,000	0.000814	-	-	0.000814	0.000814	N	C/SLV <1
Fluorene	n	73%	500	22,000,000	0.0000227	-	-	0.0000227	0.0000227	N	C/SLV <1
Indeno(1,2,3-cd)pyrene	c	93%	6,510	590,000	0.0110	-	-	0.0110	0.0110	N	C/SLV <1
Naphthalene	c	55%	319	16,000,000	0.0000199	0.000175	0.000130	0.000195	0.000150	N	C/SLV <1
Phenanthrene	n	95%	5,700	170,000,000	0.0000335	0.0000537	0.0000712	0.0000873	0.000105	N	C/SLV <1
Pyrene	n	98%	19,800	17,000,000	0.00116	-	-	0.00116	0.00116	N	C/SLV <1
TPH (mg/kg)											
Diesel Range Organics	n	88%	5,270	70,000	0.0753	-	-	0.0753	0.0753	N	C/SLV <1
Gasoline Range Organics	n	27%	105	22,000	0.00477	0.00465	-	0.00942	0.00477	N	C/SLV <1
Residual Range Organics	n	94%	24,700	40,000	0.618	-	-	0.618	0.618	N	C/SLV <1
Sum non-carcinogenic C/RBC (HI)					**0.726**						
Sum carcinogenic C/RBC (ELCR)					**8.0E-07**						

Green highlight = Retained as a COPC

Table M-3
Identification of COPCs in Soil at Landfill AOPC - Excavation Worker
Bradford Island -Upland Operable Unit
(3 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-4)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-7)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		

- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
ft bgs = feet below surface
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/kg = milligrams per kilogram
mm = multimedia
n = non-carcinogen
NE = multi-media was not evaluated since the chemical is already identified as a COPC.
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Excavation Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Excavation), 2. USEPA Soil Industrial RSL, 3. Outdoor Worker SLV, and 4. Surrogate used as noted in Appendix J-4a.
Screening Levels Values for Groundwater: 1. DEQ Groundwater in Excavation Construction/Excavation RBCs (Appendix J-4b), 2. USEPA Tapwater RSL, and 3. Surrogates used as noted in Appendix J-4b.

Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.
For inorganics, the higher of the 95% Upper Prediction Limit (UPL) and lowest HH SLV was selected as the HH SLV. For all other analytes the heirarchy described above was used.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation. Total aroclors, rather than individual aroclors, was used in the summation.
Ratios for SLVs based on Reference Upper Prediction Limits (UPLs) are not included in sum totals.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:

Table M-3
Identification of COPCs in Soil at Landfill AOPC - Excavation Worker
Bradford Island -Upland Operable Unit
(4 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-4)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-7)	Multimedia (direct contact) sum($C/SLV_{soil} + C/SLV_{gw}$)	Multimedia (bioaccumulation) sum($C/SLV_{soil} + C/SLV_{gw}$)		

[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-4
Identification of COPCs in Groundwater at Landfill AOPC - Construction and Excavation Workers
Bradford Island -Upland Operable Unit
(1 of 3)

Chemicals of Interest	Note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (direct contact)	$\frac{C_{soil}}{SLV_{soil}}$ (Construction Worker Table M-2)	Multimedia (1) (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})		
INORGANICS (mg/L)									
Antimony	n	42%	0.00223	0.015	0.149	0.00500	0.154	Y	C/SLV >0.1
Arsenic	c	81%	0.0104	5.8	0.00179	-	0.00179	N	carc C/SLV <1
Barium	n	100%	0.165	25,000	0.00000660	-	0.00000660	N	C/SLV <0.1
Beryllium	c	37%	0.000351	250	0.00000140	-	0.00000140	N	carc C/SLV <1
Cadmium	c	32%	0.00191	57	0.0000335	0.00913	0.00917	N	carc C/SLV <1
Chromium	c	37%	0.008	- (2)	-	-	-	N	C/SLV <1 (2)
Copper	n	58%	0.0454	5,000	0.00000908	-	0.00000908	N	C/SLV <0.1
Iron	n	94%	29.1	26	1.12	-	1.12	Y	C/SLV >0.1
Lead	n	60%	0.0128	- (2)	-	0.995	0.995	N	C/SLV <1 (2)
Manganese	n	98%	1.91	3,000	0.000637	-	0.000637	N	C/SLV <0.1
Mercury	n	17%	0.0000769	0.00057	0.135	0.0110	0.146	Y	C/SLV >0.1
Nickel	c	58%	0.117	12,000	0.00000975	0.0746	0.0746	N	carc C/SLV <1
Selenium	n	37%	0.00852	0.18	0.0473	0.0000514	0.0474	N	C/SLV <0.1
Silver	n	26%	0.000276	1,000	0.000000276	0.000337	0.000338	N	C/SLV <0.1
Thallium	n	47%	0.000238	0.002 (3)	0.119	-	0.119	Y	C/SLV >0.1
Zinc	n	79%	2.07	11	0.188	0.000790	0.189	Y	C/SLV >0.1
BUTYLTINS (ug/L)									
Dibutyltin	n	28%	0.0586	11	0.00533	0.000111	0.00544	N	C/SLV <0.1
Monobutyltin	n	18%	0.0254	11	0.00231	0.000211	0.00252	N	C/SLV <0.1
Tributyltin	n	75%	0.0364	11	0.00331	0.000151	0.00346	N	C/SLV <0.1
HERBICIDES (ug/L)									
4-Nitrophenol	n	13%	0.84	11,000	0.0000764	-	0.0000764	N	C/SLV <0.1
Pentachlorophenol	c	13%	0.112	52	0.00215	-	0.00215	N	carc C/SLV <1
VOCs (ug/L)									
1,2,4-Trimethylbenzene	n	9%	5.2	1,700	0.00306	0.000810	0.00387	N	C/SLV <0.1
Acetone	n	18%	10.2	22,000	0.000464	-	0.000464	N	C/SLV <0.1
Chloroform	c	14%	0.498	720	0.000692	-	0.000692	N	carc C/SLV <1
Isopropylbenzene	n	9%	3.42	680	0.00503	-	0.00503	N	C/SLV <0.1
n-Propylbenzene	n	9%	1.32	1,300	0.00102	-	0.00102	N	C/SLV <0.1
Tetrachloroethene (PCE)	c	23%	2.8	240	0.0117	3.18	NE	N	carc C/SLV <1
Vinyl Chloride	c	29%	0.307	1,200	0.000256	-	0.000256	N	carc C/SLV <1
SVOCs (ug/L)									
Bis(2-ethylhexyl) Phthalate	c	26%	4.7	4.8	0.979	0.00355	0.983	N	carc C/SLV <1
Diethyl Phthalate	n	13%	0.873	29,000	0.0000301	0.0000000737	0.0000302	N	C/SLV <0.1

Table M-4
Identification of COPCs in Groundwater at Landfill AOPC - Construction and Excavation Workers
Bradford Island -Upland Operable Unit
(2 of 3)

Chemicals of Interest	Note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (direct contact)	$\frac{C_{soil}}{SLV_{soil}}$ (Construction Worker Table M-2)	Multimedia (1) (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})		
Di-n-octyl Phthalate	n	13%	4.61	4.8	0.960	-	0.960	Y	C/SLV >0.1
Isophorone	c	9%	0.177	71	0.00249	-	0.00249	N	carc C/SLV <1
PAHs (ug/L)									
2-Methylnaphthalene	n	17%	0.175	150	0.00117	0.0000415	0.00121	N	C/SLV <0.1
Acenaphthene	n	9%	0.158	2,200	0.0000718	0.0000482	0.000120	N	C/SLV <0.1
Naphthalene	c	13%	0.0873	500	0.000175	0.000550	0.000725	N	carc C/SLV <1
Phenanthrene	n	9%	0.591	11,000	0.0000537	0.0000613	0.000115	N	C/SLV <0.1
TPH (mg/L)									
Gasoline Range Organics	n	30%	0.0604	13	0.00465	0.00808	0.0127	N	C/SLV <0.1
Residual Range Organics	n	49%	0.344	- (2)	-	0.618	0.618	N	C/SLV <1 (2)
Sum non-carcinogenic C/RBC (HI)					**2.74**				
Sum carcinogenic C/RBC (ELCR)					**1.0E-06**				

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
max =maximum
mg/L = milligrams per liter
n = non-carcinogen
NE = Multi-media was not evaluated since the chemical is already identified as a COPC.
PAHs = polyaromatic hydrocarbons
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
Total metal results are reported.

Table M-4
Identification of COPCs in Groundwater at Landfill AOPC - Construction and Excavation Workers
Bradford Island -Upland Operable Unit
(3 of 3)

Chemicals of Interest	Note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (direct contact)	$\frac{C_{soil}}{SLV_{soil}}$ (Construction Worker Table M-2)	Multimedia (1) (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$		

Construction Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Construction,. 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Screening Levels Values for Groundwater: 1. DEQ Groundwater in Excavation Construction/Excavation RBCs (Appendix J-4b), 2. USEPA Tapwater RSL, and 3. Surrogates used as noted in Appendix J-4b.

Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) At the request of DEQ, COPC selection for groundwater is done separately for the on-site groundwater ingestion pathway and the groundwater discharge to surface water pathway. Therefore, this screening accounts only for on-site upland exposure to groundwater.
(2) The SLV for these chemcials are not available due to exceeding the solubility point in water.
(3) DEQ Maximum Contaminant Level (MCL) was used as a surrogate.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:

[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-5
Identification of COPCs in Groundwater at Landfill AOPC - Potable Water User
Bradford Island -Upland Operable Unit
(1 of 3)

Chemicals of Interest	Note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Multimedia (1) (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})		
INORGANICS (mg/L)									
Antimony	n	42%	0.00223	0.015	0.149	0.00361	0.152	Y	C/SLV >0.1
Arsenic	c	81%	0.0104	0.000038	274	1.94	276	Y	carc C/SLV >1
Barium	n	100%	0.165	7.3	0.0226	-	0.0226	N	C/SLV <0.1
Beryllium	c	37%	0.000351	0.073	0.00481	-	0.00481	N	carc C/SLV <1
Cadmium	c	32%	0.00191	0.018	0.106	0.00234	0.108	N	carc C/SLV <1
Chromium	c	37%	0.008	55 (2)	0.000145	-	0.000145	N	carc C/SLV <1
Copper	n	58%	0.0454	1.5	0.0303	-	0.0303	N	C/SLV <0.1
Iron	n	94%	29.1	26	1.12	-	1.12	Y	C/SLV >0.1
Lead	n	60%	0.0128	0.015	0.853	0.639	1.49	Y	C/SLV >0.1
Manganese	n	98%	1.91	0.88	2.17	-	2.17	Y	C/SLV >0.1
Mercury	n	17%	0.0000769	0.011	0.00699	0.00468	0.0117	N	C/SLV <0.1
Nickel	c	58%	0.117	0.73	0.160	-	0.160	N	carc C/SLV <1
Selenium	n	37%	0.00852	0.18	0.0473	-	0.0473	N	C/SLV <0.1
Silver	n	26%	0.000276	0.18	0.00153	0.0000882	0.00162	N	C/SLV <0.1
Thallium	n	47%	0.000238	0.002	0.119	-	0.119	N	C/SLV >0.1
Zinc	n	79%	2.07	11	0.188	0.00135	0.190	Y	C/SLV >0.1
BUTYLTINS (ug/L)									
Dibutyltin	n	28%	0.0586	11	0.00533	0.000112	0.00544	N	C/SLV <0.1
Monobutyltin	n	18%	0.0254	11	0.00231	0.000211	0.00252	N	C/SLV <0.1
Tributyltin	n	75%	0.0364	11	0.00331	0.000334	0.00364	N	C/SLV <0.1
HERBICIDES (ug/L)									
4-Nitrophenol	n	13%	0.840	11,000	0.0000764	-	0.0000764	N	C/SLV <0.1
Pentachlorophenol	c	13%	0.112	0.47	0.238	-	0.238	N	carc C/SLV <1
VOCs (ug/L)									
1,1-Dichloroethene	n	0%	-	340	-	-	-	Y	PCE is a COPC (3)
1,2,4-Trimethylbenzene	n	9%	5.20	15	0.347	0.00285	0.350	Y	C/SLV >0.1
Acetone	n	18%	10.2	22,000	0.000464	-	0.000464	N	C/SLV <0.1
Chloroform	c	14%	0.498	0.19	2.62	-	2.62	Y	carc C/SLV >1
cis-1,2-Dichloroethene	n	4.6%	0.791	360	0.00220	-	0.00220	Y	PCE is a COPC (3)
Isopropylbenzene	n	9%	3.42	680	0.00503	-	0.00503	N	C/SLV <0.1
n-Propylbenzene	n	9%	1.32	1,300	0.00102	-	0.00102	N	C/SLV <0.1
Tetrachloroethene (PCE)	c	23%	2.80	0.093	30.1	0.00324	30.1	Y	carc C/SLV >1
trans-1,2-Dichloroethene	n	0%	-	110	-	-	-	Y	PCE is a COPC (3)

Table M-5
Identification of COPCs in Groundwater at Landfill AOPC - Potable Water User
Bradford Island -Upland Operable Unit
(2 of 3)

Chemicals of Interest	Note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Multimedia (1) (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})		
Trichloroethene (TCE)	c	0%	-	0.039	-	-	-	Y	PCE is a COPC (3)
Vinyl Chloride	c	29%	0.307	0.025	12.3	-	12.3	Y	carc C/SLV >1
SVOCs (ug/L)									
Bis(2-ethylhexyl) Phthalate	c	26%	4.70	4.1	1.15	0.0425	1.19	Y	carc C/SLV >1
Diethyl Phthalate	n	13%	0.873	29,000	0.0000301	0.0000000794	0.0000302	N	C/SLV <0.1
Di-n-octyl Phthalate	n	13%	4.61	4.1	1.12	-	1.12	Y	C/SLV >0.1
Isophorone	c	9%	0.177	71	0.00249	-	0.00249	N	carc C/SLV <1
PAHs (ug/L)									
2-Methylnaphthalene	n	17%	0.175	150	0.00117	0.0000485	0.00122	N	C/SLV <0.1
Acenaphthene	n	9%	0.158	2,200	0.0000718	0.0000150	0.0000868	N	C/SLV <0.1
Naphthalene	c	13%	0.0873	0.14	0.624	0.00683	0.630	N	carc C/SLV <1
Phenanthrene	n	9%	0.591	11,000	0.0000537	0.0000340	0.0000877	N	C/SLV <0.1
TPH (mg/L)									
Diesel Range Organics	n	67%	0.388	0.09	4.31	0.0143	4.33	Y	C/SLV >0.1
Gasoline Range Organics	n	30%	0.0604	0.1	0.604	0.00714	0.611	Y	C/SLV >0.1
Residual Range Organics	n	49%	0.344	0.29	1.19	0.236	1.42	Y	C/SLV >0.1
Sum non-carcinogenic C/RBC (HI)					**11.4**				
Sum carcinogenic C/RBC (ELCR)					**3.2E-04**				

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/L = milligrams per liter
mm = multimedia
n = non-carcinogen
PAHs = polyaromatic hydrocarbons
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
TPH = total petroleum hydrocarbon

Table M-5
Identification of COPCs in Groundwater at Landfill AOPC - Potable Water User
Bradford Island -Upland Operable Unit
(3 of 3)

Chemicals of Interest	Note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Multimedia (1) (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$		

ug/L = micrograms per liter
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table except for degradation products of PCE (see footnote 4). Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
Total metal results are reported.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, 3. Surrogate used as noted in Appendix J-4a.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4b.

Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) At the request of DEQ, COPC selection for groundwater is done separately for the on-site groundwater ingestion pathway and the groundwater discharge to surface water pathway. Therefore, this screening accounts only for on-site upland exposure to groundwater.
(2) There is no SLV for chromium, but it is likely to exist in the trivalent form in the aerobic surface water environment
(3) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a).

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum cPAH C/RBC (ELCR) = includes only individual carcinogenic polyaromatic hydrocarbons selected as a COPC.
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:

[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-6
Evaluation of Groundwater Discharge to Surface Water - Landfill AOPC
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	Note	Groundwater		Seep Water		Surface Water		Reference Groundwater		Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Significant GW to SW Pathway ?
		Max Detected Value	Detection Rate	Min Detected Value	Max Detected Value	Min Detected Value	Max Detected Value	Min Detected Value	Max Detected Value		$\frac{C_{gw}}{SLV_{gw}}$ (Groundwater)	$\frac{C_{gw}}{SLV_{gw}}$ (Seep water)	$\frac{C_{gw}}{SLV_{gw}}$ (Surface water)	
INORGANICS (mg/L)														
Arsenic	c	0.0213	88%	0.000500	0.0128	0.000800	0.00117	0.00123	0.00168	0.000038	561	337	30.8	Moderate
Iron	n	36.6	91%	0.271	121	0.167	0.446	0.116	0.451	26	1.41	4.65	0.0172	No
Lead	n	0.0269	74%	0.000113	0.0257	0.000105	0.000407	0.000102	0.000248	0.015	1.79	1.71	0.0271	No
Manganese	n	5.38	100%	0.00890	3.24	0.00590	0.0136	0.204	0.259	0.88	6.11	3.68	0.0155	No
Mercury	n	0.0000300	40%	0.0000300	0.0000300	-	-	-	-	0.011	0.00273	0.00273	-	No
BUTYLTINS (ug/L)														
Dibutyltin	n	0.130	16%	-	-	-	-	-	-	11	0.0118	-	-	No
VOCs (ug/L)														
Chloroform	c	3.70	15%	0.740	2.80	-	-	-	-	0.19	19.5	14.7	-	No
Tetrachloroethene (PCE)	c	7.20	24%	0.150	4.40	-	-	-	-	0.093	77.4	47.3	-	No
PAHs (ug/L)														
Phenanthrene	n	3.90	10%	-	-	-	-	-	-	11,000	0.000355	-	-	No
TPH (mg/L)														
Diesel Range Organics	n	0.980	72%	0.0290	0.130	0.0260	0.0300	-	-	0.09	10.9	1.44	0.333	No
Gasoline Range Organics	n	0.120	38%	-	-	-	-	-	-	0.1				
Residual Range Organics	n	0.370	50%	0.130	0.130	-	-	-	-	0.29	1.28	0.448	-	No

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium
AOPC = area of potential concern
C = concentration
c = carcinogen
DEQ = Oregon Department of Environmental Quality
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C/SLV only (i.e. single medium).
Max =maximum
mg/L = milligrams per liter
MCL = maximum contaminant level
Min = Minimum
n = non-carcinogen
PAHs = polyaromatic hydrocarbons
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately
Total metal results are reported.
Hierarchy was developed to determine Screening Levels Values for Direct contact pathway to surface water; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential and Ingest), 2. USEPA tapwater RSL and 3. DEQ MCL.
Surrogates were assigned if an SLV was not available (see Appendix J-4).
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009

Table M-6
Evaluation of Groundwater Discharge to Surface Water - Landfill AOPC
Bradford Island -Upland Operable Unit
(2 of 2)

Chemicals of Interest	Note	Groundwater		Seep Water		Surface Water		Reference Groundwater		Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Significant GW to SW Pathway ?
		Max Detected Value	Detection Rate	Min Detected Value	Max Detected Value	Min Detected Value	Max Detected Value	Min Detected Value	Max Detected Value		$\frac{C_{gw}}{SLV_{gw}}$ (Groundwater)	$\frac{C_{gw}}{SLV_{gw}}$ (Seep water)	$\frac{C_{gw}}{SLV_{gw}}$ (Surface water)	

DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV

Table M-7
Identification of COPCs in Groundwater at Landfill AOPC - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(1 of 3)

Chemicals of Interest	Note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV			Bioaccumulative Potential? (Y/N) (Table J-6)	Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Multimedia (1) (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})			
INORGANICS (mg/L)										
Antimony	n	42%	0.00223	0.0056	0.398	0.00361	0.402	N	Y	C/SLV >0.1
Arsenic	c	81%	0.0104	0.000018	578	1.94	580	Y	Y	carc C/SLV>1
Barium	n	100%	0.165	1	0.165	-	0.165	N	Y	C/SLV >0.1
Beryllium	c	37%	0.000351	-	-	-	-	N	N	Not Bioaccumulative
Cadmium	c	32%	0.00191	-	-	0.00234	0.00234	N	N	Not Bioaccumulative
Chromium	c	37%	0.00800	- (2)	-	-	-	N	N	Not Bioaccumulative
Copper	n	58%	0.045	1.3	0.0349	-	0.0349	N	N	C/SLV <0.1
Iron	n	94%	29.1	0.3	97.0	-	97.0	N	N	See footnote (3)
Lead	n	60%	0.0128	-	-	0.639	0.639	Y	Y	No SLV
Manganese	n	98%	1.91	0.05	38.2	-	38.2	Y	N	See footnote (3)
Mercury	n	17%	0.000077	-	-	0.00468	0.00468	Y	Y	No SLV
Nickel	c	58%	0.117	0.61	0.192	-	0.192	N	N	carc C/SLV <1
Selenium	n	37%	0.0085	0.17	0.0501	-	0.0501	N	N	C/SLV <0.1
Silver	n	26%	0.000276	-	-	0.0000882	0.0000882	N	N	Not Bioaccumulative
Thallium	n	47%	0.000238	0.00024	0.992	-	0.992	Y	Y	C/SLV >0.1
Zinc	n	79%	2.07	7.4	0.280	0.00135	0.281	Y	Y	C/SLV >0.1
BUTYLTINS (ug/L)										
Dibutyltin	n	28%	0.0586	-	-	0.000112	0.000112	N	N	Not Bioaccumulative
Monobutyltin	n	18%	0.0254	-	-	0.000211	0.000211	N	N	Not Bioaccumulative
Tributyltin	n	75%	0.0364	-	-	0.000334	0.000334	Y	Y	No SLV
HERBICIDES (ug/L)										
4-Nitrophenol	n	13%	0.840	10,000	0.0000840	-	0.0000840	N	N	C/SLV <0.1
Pentachlorophenol	c	13%	0.112	0.27	0.415	-	0.415	Y	N	carc C/SLV <1
VOCs (ug/L)										
1,1-Dichloroethene	n	0%	-	330	-	-	-	N	Y	PCE is a COPC (4)
1,2,4-Trimethylbenzene	n	9%	5.20	-	-	0.00285	0.00285	Y	Y	No SLV
Acetone	n	18%	10.2	-	-	-	-	N	N	Not Bioaccumulative
Chloroform	c	14%	0.498	5.7	0.0874	-	0.0874	N	N	carc C/SLV <1
cis-1,2-Dichloroethene	n	4.6%	0.791	-	-	-	-	N	N	Not Bioaccumulative
Isopropylbenzene	n	9%	3.42	-	-	-	-	Y	Y	No SLV
n-Propylbenzene	n	9%	1.32	-	-	-	-	Y	Y	No SLV
Tetrachloroethene (PCE)	c	23%	2.80	0.69	4.06	0.00324	4.06	N	Y	carc C/SLV>1
trans-1,2-Dichloroethene	n	0%	-	140	-	-	-	N	Y	PCE is a COPC (4)
Trichloroethene (TCE)	c	0%	-	2.5	-	-	-	N	Y	PCE is a COPC (4)
Vinyl Chloride	c	29%	0.307	0.025	12.3	-	12.3	N	Y	carc C/SLV>1

Table M-7
Identification of COPCs in Groundwater at Landfill AOPC - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(2 of 3)

Chemicals of Interest	Note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV			Bioaccumulative Potential? (Y/N) (Table J-6)	Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Multimedia (1) (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})			
SVOCs (ug/L)										
Bis(2-ethylhexyl) Phthalate	c	26%	4.7	1.2	3.92	0.0425	3.96	Y	Y	carc C/SLV>1
Diethyl Phthalate	n	13%	0.873	17,000	0.0000514	0.0000000794	0.0000514	N	N	C/SLV <0.1
Di-n-octyl Phthalate	n	13%	4.61	1.2	3.84	-	3.84	Y	Y	C/SLV >0.1
Isophorone	c	9%	0.177	35	0.00506	-	0.00506	N	N	carc C/SLV <1
PAHs (ug/L)										
2-Methylnaphthalene	n	17%	0.175	670	0.000261	0.0000485	0.000310	Y	N	C/SLV <0.1
Acenaphthene	n	9%	0.158	670	0.000236	0.0000150	0.000251	Y	N	C/SLV <0.1
Naphthalene	c	13%	0.0873	670	0.000130	0.00683	0.00696	N	N	carc C/SLV <1
Phenanthrene	n	9%	0.591	8,300	0.0000712	0.0000340	0.000105	Y	N	C/SLV <0.1
TPH (mg/L)										
Diesel Range Organics	n	67%	0.388	-	-	0.0143	0.0143	NA	N	Evaluated as PAHs
Gasoline Range Organics	n	30%	0.0604	-	-	0.00714	0.00714	NA	N	Evaluated as VOCs
Residual Range Organics	n	49%	0.344	-	-	0.236	0.236	NA	N	Evaluated as PAHs
Sum non-carcinogenic C/RBC (HI)					**5.76**					
Sum carcinogenic C/RBC (ELCR)					**6.0E-04**					

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
max =maximum
mg/L = milligrams per liter
n = non-carcinogen
NA = not analyzed
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Table M-7
Identification of COPCs in Groundwater at Landfill AOPC - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(3 of 3)

Chemicals of Interest	Note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV			Bioaccumulative Potential? (Y/N) (Table J-6)	Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Multimedia (1) (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$			

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately
Total metal results are reported.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A, 33B, and 33C. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) At the request of DEQ, groundwater COPCs are selected separately for each pathway. This table provides COPCs selected for the pathway of groundwater discharge to surface water and subsequent use of surface water (river water) for ingestions plus fish consumption (bioaccumulation).
(2) There is no SLV for chromium, but it is likely to exist in the trivalent form in the aerobic surface water environment
(3) SLVs are based on aesthetic considerations and are not included in summations or as a COPCs.
(4) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a). If the chemcial lacks a Bioaccumulation based SLV and is not considered bioaccumulative, then it is not selected as a COPC.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately. Iron and manganese not included in summation, see footnote (3).
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-8
Identification of COPCs in Seepwater at Landfill AOPC - Potable Water User
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	Note	Total / Dissolved	Max Detected Value	Detection Rate	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
						$\frac{C_{sp}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Multimedia (1) (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})		
INORGANICS (mg/L)										
Antimony	n	Dissolved	0.00228	100%	0.015	0.152	0.00361	0.156	Y	C/SLV >0.1
Zinc	n	Dissolved	0.0856	100%	11	0.00778	0.00135	0.00913	N	C/SLV <0.1
Arsenic	c	Total	0.0128	80%	0.000038	337	1.94	339	Y	C/SLV >1
Barium	n	Total	0.0742	100%	7.3	0.0102	-	0.0102	N	C/SLV <0.1
Chromium	c	Total	0.00105	100%	55 (2)	0.0000191	-	0.0000191	N	carc C/SLV <1
Copper	n	Total	0.00272	100%	1.5	0.00181	-	0.00181	N	C/SLV <0.1
Iron	n	Total	121	100%	26	4.65	-	4.65	Y	C/SLV >0.1
Lead	n	Total	0.0257	80%	0.015	1.71	0.639	2.35	Y	C/SLV >0.1
Manganese	n	Total	3.24	100%	0.88	3.68	-	3.68	Y	C/SLV >0.1
Mercury	n	Total	0.0000300	50%	0.011	0.00273	0.00468	0.00740	N	C/SLV <0.1
Nickel	c	Total	0.00232	100%	0.73	0.00318	-	0.00318	N	carc C/SLV <1
Selenium	n	Total	0.00111	100%	0.18	0.00617	-	0.00617	N	C/SLV <0.1
VOCs (ug/L)										
1,1-Dichloroethene	n	Total	-	0%	340	-	-	-	Y	PCE is a COPC (3)
Chloroform	c	Total	2.80	40%	0.190	14.7	-	14.7	Y	C/SLV >1
cis-1,2-Dichloroethene	n	Total	-	0%	360	-	-	-	Y	PCE is a COPC (3)
Tetrachloroethene (PCE)	c	Total	4.40	60%	0.0930	47.3	0.00324	47.3	Y	C/SLV >1
trans-1,2-Dichloroethene	n	Total	-	0%	110	-	-	-	Y	PCE is a COPC (3)
Trichloroethene (TCE)	c	Total	-	0%	0.0390	-	-	-	Y	PCE is a COPC (3)
Vinyl Chloride	c	Total	-	0%	0.0250	-	-	-	Y	PCE is a COPC (3)
SVOCs (ug/L)										
Benzoic Acid	n	Total	5.90	100%	150,000	0.0000393	0.0000000872	0.0000394	N	C/SLV <0.1
TPH (mg/L)										
Diesel Range Organics	n	Total	0.130	40%	0.09	1.44	0.0143	1.46	Y	C/SLV >0.1
Residual Range Organics	n	Total	0.130	20%	0.290	0.448	0.236	0.685	Y	C/SLV >0.1
Sum non-carcinogenic C/RBC (HI)						**10.4**				
Sum carcinogenic C/RBC (ELCR)						**4.0E-04**				

Green highlight = Retained as a COPC
- = Not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality

Table M-8
Identification of COPCs in Seepwater at Landfill AOPC - Potable Water User
Bradford Island -Upland Operable Unit
(2 of 2)

Chemicals of Interest	Note	Total / Dissolved	Max Detected Value	Detection Rate	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
						$\frac{C_{sp}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Multimedia (1) (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})		

ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{sp}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{sp}/SLV_{gw} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/L = milligrams per liter
mm = multimedia
n = non-carcinogen
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
sp = seep water
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table except for degradation products of PCE (see footnote 3). Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
Dissolved metals were shown if total metals were non-detect.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, and 4. Surrogates used as noted in Appendix J-4b.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Seep water is evaluated as part of the groundwater discharge to surface water pathway.
(2) There is no SLV for chromium, but it is likely to exist in the trivalent form in the aerobic surface water environment
(3) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a).

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens

COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:

[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-9
Identification of COPCs in Seepwater at Landfill AOPC - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	Note	Total / Dissolved	Max Detected Value	Detection Rate	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV: $\frac{C_{sp}}{SLV_{gw}}$ (Bioaccumulation)	Site concentration(C) / SLV: $\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Site concentration(C) / SLV: Multimedia (1) (bioaccumulation) sum($C/SLV_{soil} + C/SLV_{gw}$)	Bioaccumulative Potential? (Y/N) (Table J-7)	Retain as a COPC, Y/N?	Rationale
INORGANICS (mg/L)											
Antimony	n	Dissolved	0.00228	100%	0.0056	0.407	0.00361	0.411	N	N	C/SLV <1
Zinc	n	Dissolved	0.0856	100%	7.4	0.0116	0.00135	0.0129	Y	N	C/SLV <1
Arsenic	c	Total	0.0128	80%	0.000018	711	1.94	713	Y	Y	C/SLV >1
Barium	n	Total	0.0742	100%	1	0.0742	-	0.0742	N	N	C/SLV <1
Chromium	c	Total	0.00105	100%	- (2)	-	-	-	N	N	Not Bioaccumulative
Copper	n	Total	0.00272	100%	1.3	0.00209	-	0.00209	N	N	C/SLV <1
Iron	n	Total	121	100%	0.3	403	-	403	N	N	See footnote (3)
Lead	n	Total	0.0257	80%	-	-	0.639	0.639	Y	Y	No SLV
Manganese	n	Total	3.24	100%	0.05	64.8	-	64.8	Y	N	See footnote (3)
Mercury	n	Total	0.0000300	50%	-	-	0.00468	0.00468	Y	Y	No SLV
Nickel	c	Total	0.00232	100%	0.61	0.00380	-	0.00380	N	N	C/SLV <1
Selenium	n	Total	0.00111	100%	0.17	0.00653	-	0.00653	N	N	C/SLV <1
VOCs (ug/L)											
1,1-Dichloroethene	n	Total	-	0%	330	-	-	-	N	Y	PCE is a COPC (4)
Chloroform	c	Total	2.80	40%	5.7	0.491	-	0.491	No	N	C/SLV <1
cis-1,2-Dichloroethene	n	Total	-	0%	-	-	-	-	N	N	Not Bioaccumulative
Tetrachloroethene (PCE)	c	Total	4.40	60%	0.69	6.38	0.00324	6.38	No	Y	C/SLV >1
trans-1,2-Dichloroethene	n	Total	-	0%	140	-	-	-	N	Y	PCE is a COPC (4)
Trichloroethene (TCE)	c	Total	-	0%	2.5	-	-	-	N	Y	PCE is a COPC (4)
Vinyl Chloride	c	Total	-	0%	0.025	-	-	-	N	Y	PCE is a COPC (4)
SVOCs (ug/L)											
Benzoic Acid	n	Total	5.90	100%	-	-	0.0000000872	0.0000000872	N	N	Not Bioaccumulative
TPH (mg/L)											
Diesel Range Organics	n	Total	0.130	40%	-	-	0.0143	0.0143	NA	N	Evaluated as PAHs
Residual Range Organics	n	Total	0.130	20%	-	-	0.236	0.236	NA	N	Evaluated as PAHs
Sum non-carcinogenic C/RBC (HI)						**0.502**					
Sum carcinogenic C/RBC (ELCR)						**7.2E-04**					

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{sp}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health

Table M-9
Identification of COPCs in Seepwater at Landfill AOPC - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(2 of 2)

Chemicals of Interest	Note	Total / Dissolved	Max Detected Value	Detection Rate	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV			Bioaccumulative Potential? (Y/N) (Table J-7)	Retain as a COPC, Y/N?	Rationale
						$\frac{C_{sp}}{SLV_{gw}}$ (Bioaccumulation)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Multimedia (1) (bioaccumulation) sum($C/SLV_{soil} + C/SLV_{gw}$)			

HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{sp}/SLV_{gw} only (i.e. single medium).
max =maximum
mg/L = milligrams per liter
n = carcinogen
NRWQC = national recommended water quality criteria
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
sp = seep water
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately
Dissolved metals were shown if total metals were non-detect.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
US Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Seep water is evaluated as part of the groundwater discharge to surface water pathway.
(2) There is no SLV for chromium, but it is likely to exist in the trivalent form in the aerobic surface water environment
(3) SLVs are based on aesthetic considerations and are not included in summations or as a COPCs.
(4) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a). If the chemcial lacks a Buioaccumulation based SLV and is not considered bioaccumulative, then it is not selected as a COPC.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately. Iron and manganese not included in summation, see footnote (3).
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-10
Identification of COPCs in Shoreline Surface Water at Landfill AOPC - Potable Water User
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	Note	Max Detected Value	Detection Rate	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
					$\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Multimedia (1) (direct contact) sum($C/SLV_{soil} + C/SLV_{sw}$)		
INORGANICS (mg/L)									
Arsenic	c	0.00117	75%	0.000038	30.8	1.94	32.7	Y	C/SLV >1
Iron	n	0.446	100%	26	0.0172	-	0.0172	N	C/SLV <1
Lead	n	0.000407	100%	0.015	0.0271	0.639	0.666	N	C/SLV <1
Manganese	n	0.0136	100%	0.88	0.0155	-	0.0155	N	C/SLV <1
TPH (mg/L)									
Diesel Range Organics	n	0.0300	50%	0.09	0.333	0.0143	0.348	N	C/SLV <1
Sum non-carcinogenic C/RBC (HI)					**0.366**				
Sum carcinogenic C/RBC (ELCR)					**3.1E-05**				

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{sw}/SLV_{sw} only (i.e. single medium).
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{sw}/SLV_{sw} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/L = milligrams per liter
n = non-carcinogen
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
sw = surface water
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
Total metal results are reported.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4b.
Sum nC/SLV = summation of C/SLV of all non-carcinogens

Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009

Table M-10
Identification of COPCs in Shoreline Surface Water at Landfill AOPC - Potable Water User
Bradford Island -Upland Operable Unit
(2 of 2)

Chemicals of Interest	Note	Max Detected Value	Detection Rate	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
					$\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Multimedia (1) (direct contact) sum($C/SLV_{soil} + C/SLV_{sw}$)		

DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Surface water associated with the landfill AOPC refers to data from the two shoreline locations (S2, S4) and is evaluated as part of groundwater discharge to surface water pathway.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:

[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-11
Identification of COPCs in Shoreline Surface Water at Landfill AOPC - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	Note	Max Detected Value	Detection Rate	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV: $\frac{C_{sw}}{SLV_{sw}}$ (Bioaccumulation)	Site concentration(C) / SLV: $\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Site concentration(C) / SLV: Multimedia (1) (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{sw})$	Bioaccumulative Potential? (Y/N)	Retain as a COPC, Y/N?	Rationale
INORGANICS (mg/L)										
Arsenic	c	0.00117	75%	0.000018	65.0	1.94	66.9	Y	Y	C/SLV >1
Iron	n	0.446	100%	0.3	1.49	-	1.49	N	N	See footnote (2)
Lead	n	0.000407	100%	-	-	0.639	0.639	Y	Y	No SLV
Manganese	n	0.0136	100%	0.05	0.272	-	0.272	Y	N	See footnote (2)
TPH (mg/L)										
Diesel Range Organics	n	0.0300	50%	-	-	0.0143	0.0143	NA	N	Evaluated as PAHs
Sum non-carcinogenic C/RBC (HI)					**0**					
Sum carcinogenic C/RBC (ELCR)					**6.5E-05**					

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{sw}/SLV_{sw} only (i.e. single medium).
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{sw}/SLV_{sw} only (i.e. single medium).
max =maximum
mg/L = milligrams per liter
n = non-carcinogen
NRWQC = national recommended water quality criteria
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
sw = surface water
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
Total metal results are reported.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.

Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.

Table M-11
Identification of COPCs in Shoreline Surface Water at Landfill AOPC - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(2 of 2)

Chemicals of Interest	Note	Max Detected Value	Detection Rate	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV			Bioaccumulative Potential? (Y/N)	Retain as a COPC, Y/N?	Rationale
					$\frac{C_{sw}}{SLV_{sw}}$ (Bioaccumulation)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-1)	Multimedia (1) (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{sw})			

USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Surface water associated with the landfill AOPC refers to data from the two shoreline locations (S2, S4) and is evaluated as part of groundwater discharge to surface water pathway.
(2) SLVs are based on aesthetic considerations and are not included in summations or as COPCs.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately. Iron and manganese not included in summation, see footnote (2).
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens

COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-12
Summary of COPCs - Landfill AOPC
Bradford Island -Upland Operable Unit
(1 of 1)

Media	Receptor	HI	ELCR	COPCs
Soil	Adult Outdoor Worker	0.293	6.32E-05	Arsenic Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzofluoranthenes, Total Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene Lead #
	Construction Worker	0.898	1.2E-05	Benzo(a)pyrene Tetrachloroethene (PCE) 1,1-Dichloroethene # cis-1,2-Dichloroethene # trans-1,2-Dichloroethene # Trichloroethene (TCE) Vinyl Chloride
	Excavation Worker	0.726	8.0E-07	No COPCs
Groundwater	Construction/Excavation Worker	2.74	1.0E-06	Antimony Iron Mercury Thallium # Zinc Di-n-octyl Phthalate
	Onsite Worker (Potable Water User)	11.4	**3.2E-04**	Arsenic Bis(2-ethylhexyl) Phthalate Chloroform Diesel Range Organics # Di-n-octyl Phthalate Manganese # Residual Range Organics # Tetrachloroethene (PCE) 1,2,4-Trimethylbenzene # Antimony # Gasoline Range Organics # Zinc # Lead # 1,1-Dichloroethene # cis-1,2-Dichloroethene # trans-1,2-Dichloroethene # Trichloroethene (TCE) Vinyl Chloride
	Subsistence Fisher and Recreational Fisher (Discharge and Bioaccumulation)	5.76	6.0E-04	Arsenic Bis(2-ethylhexyl) Phthalate Di-n-octyl Phthalate Tetrachloroethene (PCE) Vinyl Chloride Antimony # Barium # Thallium # Zinc # 1,2,4-Trimethylbenzene # Isopropylbenzene Lead # Mercury # n-Propylbenzene # Tributyltin 1,1-Dichloroethene # trans-1,2-Dichloroethene # Trichloroethene (TCE)
Seepwater	Onsite Worker (Potable Water User)	NE	NE	Arsenic Chloroform Diesel Range Organics # Lead # Manganese # Tetrachloroethene (PCE) Antimony # Residual Range Organics # 1,1-Dichloroethene # cis-1,2-Dichloroethene # trans-1,2-Dichloroethene # Trichloroethene (TCE) Vinyl Chloride
	Subsistence Fisher and Recreational Fisher (Discharge and Bioaccumulation)	NE	NE	Arsenic Tetrachloroethene (PCE) 1,1-Dichloroethene # trans-1,2-Dichloroethene # Trichloroethene (TCE) Vinyl Chloride Lead # Mercury #
Shoreline Surface Water	Onsite Worker (Potable Water User)	NE	NE	Arsenic
	Subsistence Fisher and Recreational Fisher (Discharge and Bioaccumulation)	NE	NE	Arsenic Lead #

Bold = COPCs ELCR >1E-04
# = non-carcinogenic COPC
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
COPC = chemicals of potential concern
ELCR = excess lifetime cancer risk
HI = hazard index
NE = Cumulative HI and ELCR not evaluated. These pathways were evaluated only to see if additional COPCs were identified for Landfill.
PCBs = polychlorinated biphenyls

Shaded indicates COPC rationales not based on C/SLV>1 (i.e., multi-media, C/SLV>0.1, degradation product, or No SLV) or the SLV was not available for the specific exposure pathways.

Table M-13
Identification of COPCs in Soil at Sandblast Area AOPC - Adult Outdoor Worker
Bradford Island -Upland Operable Unit
(1 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-18)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$	Multimedia (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$		
INORGANICS (mg/kg)											
Antimony	n	73%	2.42	410	0.00590	-	-	0.00590	0.00590	N	C/SLV <1
Arsenic	c	99%	9.71	5.4	1.80	98.4	208	100	210	Y	C/SLV >1
Cadmium	c	89%	2.63	500	0.00526	-	-	0.00526	0.00526	N	C/SLV <1
Chromium	c	100%	579	190 (1)	3.05	-	-	3.05	3.05	Y	C/SLV >1
Lead - sieved <250um, 0-3 ft bgs	n	100%	418	800	0.523	-	-	0.523	0.523	N	C/SLV <1
Lead - sieved <2mm, 0-3 ft bgs	n	100%	303	800	0.379	-	-	0.379	0.379	N	C/SLV <1
Lead - unsieved, 0-3 ft bgs	n	100%	529	800	0.661	-	-	0.661	0.661	N	C/SLV <1
Lead - sieved <250um, 0-1 ft bgs	n	100%	921	800	1.15	-	-	1.15	1.15	Y	C/SLV >1
Lead - sieved <2mm, 0-1 ft bgs	n	100%	768	800	0.960	-	-	0.960	0.960	N	C/SLV <1
Lead - unsieved, 0-1 ft bgs	n	100%	3,260	800	4.08	-	-	4.08	4.08	Y	C/SLV >1
Nickel	c	100%	251	20,000	0.0126	-	-	0.0126	0.0126	N	C/SLV <1
Selenium	n	57%	0.479	5,100	0.0000939	-	-	0.0000939	0.0000939	N	C/SLV <1
Silver	n	96%	0.152	5,100	0.0000298	-	-	0.0000298	0.0000298	N	C/SLV <1
Zinc	n	100%	237	310,000	0.000765	-	-	0.000765	0.000765	N	C/SLV <1
BUTYLTINS (ug/kg)											
Dibutyltin	n	29%	26.6	180,000	0.000148	-	-	0.000148	0.000148	N	C/SLV <1
Monobutyltin	n	36%	8.62	180,000	0.0000479	0.00196	-	0.00201	0.0000479	N	C/SLV <1
Tributyltin	n	26%	248	180,000	0.00138	-	-	0.00138	0.00138	N	C/SLV <1
PESTICIDES (ug/kg)											
4,4'-DDD	c	5.4%	0.721	11,000	0.0000655	-	-	0.0000655	0.0000655	N	C/SLV <1
4,4'-DDE	c	19%	0.567	7,700	0.0000736	-	-	0.0000736	0.0000736	N	C/SLV <1
4,4'-DDT	c	60%	79.4	7,700	0.0103	-	-	0.0103	0.0103	N	C/SLV <1
BHC (delta)	n	5.4%	1.30	340	0.00382	-	-	0.00382	0.00382	N	C/SLV <1
BHC (gamma) Lindane	c	8%	1.06	2,000	0.000530	-	-	0.000530	0.000530	N	C/SLV <1
Chlordane (alpha)	c	12%	0.776	7,200	0.000108	-	-	0.000108	0.000108	N	C/SLV <1
Chlordane (gamma)	c	40%	20.4	7,200	0.00283	-	-	0.00283	0.00283	N	C/SLV <1
Dieldrin	c	5.4%	0.483	130	0.00372	-	-	0.00372	0.00372	N	C/SLV <1
Endosulfan I	n	14%	0.809	4,600,000	0.000000176	-	-	0.000000176	0.000000176	N	C/SLV <1
Endosulfan II	n	8%	0.447	4,600,000	0.0000000972	-	-	0.0000000972	0.0000000972	N	C/SLV <1
Endosulfan Sulfate	n	16%	0.889	4,600,000	0.000000193	-	-	0.000000193	0.000000193	N	C/SLV <1
Endrin	n	11%	3.89	230,000	0.0000169	-	-	0.0000169	0.0000169	N	C/SLV <1
Endrin Aldehyde	n	14%	3.44	230,000	0.0000150	-	-	0.0000150	0.0000150	N	C/SLV <1
Endrin Ketone	n	11%	2.88	230,000	0.0000125	-	-	0.0000125	0.0000125	N	C/SLV <1
Heptachlor	c	11%	0.415	480	0.000865	-	-	0.000865	0.000865	N	C/SLV <1
Methoxychlor	n	5.4%	1.04	3,100,000	0.000000335	-	-	0.000000335	0.000000335	N	C/SLV <1
PCBs (ug/kg)											
Aroclor 1254	c	14%	136	740	0.184	-	-	0.184	0.184	N	C/SLV <1
Aroclor 1260	c	84%	167	740	0.226	-	-	0.226	0.226	N	C/SLV <1
Total PCBs (Aroclors)	c	84%	419	740	0.566	-	-	0.566	0.566	N	C/SLV <1

Table M-13
Identification of COPCs in Soil at Sandblast Area AOPC - Adult Outdoor Worker
Bradford Island -Upland Operable Unit
(2 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-18)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
VOCs (ug/kg)											
1,1-Dichloroethene	n	0%	-	27,000,000	-	0.00618	0.00636	0.00618	0.00636	Y	PCE is a COPC (2)
1,2,4-Trimethylbenzene	n	46%	4,620	980,000	0.00471	-	-	0.00471	0.00471	N	C/SLV <1
1,3,5-Trimethylbenzene	n	17%	1,630	1,600,000	0.00102	-	-	0.00102	0.00102	N	C/SLV <1
2-Butanone (MEK)	n	41%	13.3	200,000,000	0.0000000665	-	-	0.0000000665	0.0000000665	N	C/SLV <1
2-Hexanone	n	7%	5.12	1,400,000	0.00000366	-	-	0.00000366	0.00000366	N	C/SLV <1
4-Isopropyltoluene	n	37%	20.1	53,000,000	0.000000379	-	-	0.000000379	0.000000379	N	C/SLV <1
4-Methyl-2-pentanone (MIBK)	n	20%	0.525	53,000,000	0.00000000991	-	-	0.00000000991	0.00000000991	N	C/SLV <1
Acetone	n	50%	122	630,000,000	0.000000194	-	-	0.000000194	0.000000194	N	C/SLV <1
Benzene	c	37%	0.463	34,000	0.0000136	-	-	0.0000136	0.0000136	N	C/SLV <1
Bromomethane	n	17%	1.11	700,000	0.00000159	-	-	0.00000159	0.00000159	N	C/SLV <1
Carbon Disulfide	n	52%	1.12	3,700,000	0.000000303	0.000255	-	0.000255	0.000000303	N	C/SLV <1
Chloroform	c	7%	5.70	17,000	0.000335	-	-	0.000335	0.000335	N	C/SLV <1
cis-1,2-Dichloroethene	n	4%	120	10,000,000	0.0000120	1.83	-	1.83	0.0000120	Y	PCE is a COPC (2)
Dichlorodifluoromethane	n	9%	6.74	780,000	0.00000864	-	-	0.00000864	0.00000864	N	C/SLV <1
Dichloromethane (Methylene Chloride)	c	37%	56.0	310,000	0.000181	0.0398	0.0380	0.0400	0.0382	N	C/SLV <1
Ethylbenzene	c	22%	4.69	140,000	0.0000335	-	-	0.0000335	0.0000335	N	C/SLV <1
m,p-Xylenes	n	24%	1,820	2,700,000	0.000674	-	-	0.000674	0.000674	N	C/SLV <1
Naphthalene	c	24%	1.94	23,000	0.0000843	-	-	0.0000843	0.0000843	N	C/SLV <1
n-Propylbenzene	n	7%	35.5	21,000,000	0.00000169	-	-	0.00000169	0.00000169	N	C/SLV <1
o-Xylene	n	11%	200	19,000,000	0.0000105	-	-	0.0000105	0.0000105	N	C/SLV <1
Tetrachloroethene (PCE)	c	11%	26,300	5,100	5.16	28.6	3.86	33.8	9.01	Y	C/SLV >1
Toluene	n	57%	9,360	77,000,000	0.000122	0.000278	0.000492	0.000400	0.000614	N	C/SLV <1
trans-1,2-Dichloroethene	n	2%	2.28	9,200,000	0.000000248	0.0155	0.0121	0.0155	0.0121	Y	PCE is a COPC (2)
Trichloroethene (TCE)	c	15%	1,780	3,900	0.456	85.9	1.34	NE	NE	Y	PCE is a COPC (2)
Vinyl Chloride	c	0%	-	3,900	-	44.0	44.0	44.0	44.0	Y	PCE is a COPC (2)
SVOCs (ug/kg)											
Benzoic Acid	n	31%	132	2,500,000,000	0.0000000528	-	-	0.0000000528	0.0000000528	N	C/SLV <1
Bis(2-ethylhexyl) Phthalate	c	73%	77,100	150,000	0.514	-	-	0.514	0.514	N	C/SLV <1
Butyl Benzyl Phthalate	c	15%	15.2	910,000	0.0000167	-	-	0.0000167	0.0000167	N	C/SLV <1
Carbazole	c	62%	112	1,000,000	0.000112	-	-	0.000112	0.000112	N	C/SLV <1
Dibenzofuran	n	60%	122	1,000,000	0.000122	-	-	0.000122	0.000122	N	C/SLV <1
Dimethyl Phthalate	n	8%	31.0	150,000	0.000207	-	-	0.000207	0.000207	N	C/SLV <1
Di-n-butyl Phthalate	n	36%	54.3	62,000,000	0.000000876	-	-	0.000000876	0.000000876	N	C/SLV <1
Di-n-octyl Phthalate	n	15%	22.5	150,000	0.000150	-	-	0.000150	0.000150	N	C/SLV <1
Pentachlorophenol	c	5.1%	13.3	13,000	0.00102	-	-	0.00102	0.00102	N	C/SLV <1
Phenol	n	13%	35.0	180,000,000	0.000000194	-	-	0.000000194	0.000000194	N	C/SLV <1
PAHs (ug/kg)											
2-Methylnaphthalene	n	45%	23.9	4,100,000	0.00000583	0.000555	0.000124	0.000561	0.000130	N	C/SLV <1
Acenaphthene	n	78%	652	61,000,000	0.0000107	0.00000614	0.0000201	0.0000168	0.0000308	N	C/SLV <1

Table M-13
Identification of COPCs in Soil at Sandblast Area AOPC - Adult Outdoor Worker
Bradford Island -Upland Operable Unit
(3 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-18)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
Acenaphthylene	n	40%	29.6	23,000	0.00129	-	-	0.00129	0.00129	N	C/SLV <1
Anthracene	n	88%	772	170,000,000	0.00000454	0.00000115	0.00000152	0.00000569	0.00000606	N	C/SLV <1
Benzo(a)anthracene	c	88%	2,450	2,700	0.907	-	-	0.907	0.907	N	C/SLV <1
Benzo(a)pyrene	c	90%	2,390	270	8.85	3.09	2.36	11.9	11.2	Y	C/SLV >1
Benzo(b)fluoranthene	c	94%	2,210	2,700	0.819	-	-	0.819	0.819	N	C/SLV <1
Benzo(g,h,i)perylene	c	83%	1,050	27,000	0.0389	-	-	0.0389	0.0389	N	C/SLV <1
Benzo(k)fluoranthene	c	94%	764	27,000	0.0283	-	-	0.0283	0.0283	N	C/SLV <1
Benzofluoranthenes, Total	c	91%	10,600	2,700	3.93	-	-	3.93	3.93	Y	C/SLV >1
Chrysene	c	93%	4,590	270,000	0.0170	-	-	0.0170	0.0170	N	C/SLV <1
Dibenz(a,h)anthracene	c	65%	238	270	0.881	2.31	0.373	NE	1.25	Y	mm C/SLV >1
Fluoranthene	n	93%	10,800	29,000,000	0.000372	0.0000207	0.000239	0.000393	0.000612	N	C/SLV <1
Fluorene	n	70%	227	41,000,000	0.00000554	0.0000127	0.0000173	0.0000182	0.0000228	N	C/SLV <1
Indeno(1,2,3-cd)pyrene	c	88%	1,160	2,700	0.430	0.275	2.10	0.704	NE	N	C/SLV <1
Naphthalene	c	60%	81.4	23,000	0.00354	-	-	0.00354	0.00354	N	C/SLV <1
Phenanthrene	n	95%	2,910	170,000,000	0.0000171	-	-	0.0000171	0.0000171	N	C/SLV <1
Pyrene	n	95%	11,700	21,000,000	0.000557	0.0000237	0.0000314	0.000581	0.000589	N	C/SLV <1
TPH (mg/kg)											
Diesel Range Organics	n	85%	266	70,000	0.00380	0.192	-	0.196	0.00380	N	C/SLV <1
Gasoline Range Organics	n	23%	1,030	22,000	0.0468	0.151	-	0.198	0.0468	N	C/SLV <1
Residual Range Organics	n	89%	577	40,000	0.0144	-	-	0.0144	0.0144	N	C/SLV <1
Sum cPAH C/RBC (ELCR)					**9.7E-06**						
Sum non-carcinogenic C/RBC (HI)					**0.0866**						
Sum carcinogenic C/RBC (ELCR)					**2.2E-05**						

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
ft bgs = feet below surface
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/kg = milligrams per kilogram
n = non-carcinogen
NE = Multi-media was not evaluated since the chemical is already identified as a COPC.
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value

Table M-13
Identification of COPCs in Soil at Sandblast Area AOPC - Adult Outdoor Worker
Bradford Island -Upland Operable Unit
(4 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV: $\frac{C_{soil}}{SLV_{soil}}$	Site concentration(C) / SLV: $\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-18)	Site concentration(C) / SLV: $\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Site concentration(C) / SLV: Multimedia (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$	Site concentration(C) / SLV: Multimedia (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$	Retain as a COPC, Y/N?	Rationale

SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table except for degradation products of PCE (see footnote 5). Reporting limits for non-detected chemicals are evaluated separately.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, and 4. Surrogates used as noted in Appendix J-4b.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.
For inorganics, the higher of the 95% Upper Prediction Limit (UPL) and lowest HH SLV was selected as the HH SLV. For all other analytes the heirarchy described above was used.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Due to the lack of speciation data, the chromium in soil were compared to the more conservative hexavalent chromium SLVs.
(2) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a).

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum cPAH C/RBC (ELCR) = includes only individual carcinogenic polyaromatic hydrocarbons selected as a COPC. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation.
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation. Total aroclors, rather than individual aroclors, was used in the summation.
Ratios for SLVs based on Reference Upper Prediction Limits (UPLs) are not included in sum totals.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-14
Identification of COPCs in Soil at Sandblast Area AOPC - Construction Worker
Bradford Island -Upland Operable Unit
(1 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-17)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$	Multimedia (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$		
INORGANICS (mg/kg)											
Antimony	n	74%	2.36	410	0.00576	-	-	0.00576	0.00576	N	C/SLV <1
Arsenic	c	99%	9.86	13	0.758	0.000645	208	0.759	NE	N	C/SLV <1
Cadmium	c	86%	2.54	150	0.0169	-	-	0.0169	0.0169	N	C/SLV <1
Chromium	c	100%	560	920 (1)	0.609	-	-	0.609	0.609	N	C/SLV <1
Lead - sieved <250um	n	100%	418	800	0.523	-	-	0.523	0.523	N	C/SLV <1
Lead - sieved <2mm	n	100%	303	800	0.379	-	-	0.379	0.379	N	C/SLV <1
Lead - unsieved	n	100%	512	800	0.640	-	-	0.640	0.640	N	C/SLV <1
Nickel	c	100%	243	6,100	0.0398	-	-	0.0398	0.0398	N	C/SLV <1
Selenium	n	59%	0.476	5,100	0.0000933	-	-	0.0000933	0.0000933	N	C/SLV <1
Silver	n	96%	0.151	1,500	0.000101	-	-	0.000101	0.000101	N	C/SLV <1
Zinc	n	100%	231	310,000	0.000745	-	-	0.000745	0.000745	N	C/SLV <1
BUTYLTINS (ug/kg)											
Dibutyltin	n	29%	26.6	180,000	0.000148	-	-	0.000148	0.000148	N	C/SLV <1
Monobutyltin	n	36%	8.94	180,000	0.0000497	0.00196	-	0.00201	0.0000497	N	C/SLV <1
Tributyltin	n	26%	248	180,000	0.00138	-	-	0.00138	0.00138	N	C/SLV <1
PESTICIDES (ug/kg)											
4,4'-DDD	c	5.4%	0.721	83,000	0.00000869	-	-	0.00000869	0.00000869	N	C/SLV <1
4,4'-DDE	c	19%	0.567	58,000	0.00000978	-	-	0.00000978	0.00000978	N	C/SLV <1
4,4'-DDT	c	60%	79.4	58,000	0.00137	-	-	0.00137	0.00137	N	C/SLV <1
BHC (delta)	n	5.4%	1.30	2,600	0.000500	-	-	0.000500	0.000500	N	C/SLV <1
BHC (gamma) Lindane	c	8%	1.06	15,000	0.0000707	-	-	0.0000707	0.0000707	N	C/SLV <1
Chlordane (alpha)	c	12%	0.776	55,000	0.0000141	-	-	0.0000141	0.0000141	N	C/SLV <1
Chlordane (gamma)	c	40%	20.4	55,000	0.000371	-	-	0.000371	0.000371	N	C/SLV <1
Dieldrin	c	5.4%	0.483	1,000	0.000483	-	-	0.000483	0.000483	N	C/SLV <1
Endosulfan I	n	14%	0.809	1,400,000	0.000000578	-	-	0.000000578	0.000000578	N	C/SLV <1
Endosulfan II	n	8%	0.447	1,400,000	0.000000319	-	-	0.000000319	0.000000319	N	C/SLV <1
Endosulfan Sulfate	n	16%	0.889	1,400,000	0.000000635	-	-	0.000000635	0.000000635	N	C/SLV <1
Endrin	n	11%	3.89	71,000	0.0000548	-	-	0.0000548	0.0000548	N	C/SLV <1
Endrin Aldehyde	n	14%	3.44	71,000	0.0000485	-	-	0.0000485	0.0000485	N	C/SLV <1
Endrin Ketone	n	11%	2.88	71,000	0.0000406	-	-	0.0000406	0.0000406	N	C/SLV <1
Heptachlor	c	11%	0.415	3,700	0.000112	-	-	0.000112	0.000112	N	C/SLV <1
Methoxychlor	n	5.4%	1.04	3,100,000	0.000000335	-	-	0.000000335	0.000000335	N	C/SLV <1
PCBs (ug/kg)											
Aroclor 1254	c	14%	136	740	0.184	-	-	0.184	0.184	N	C/SLV <1
Aroclor 1260	c	84%	167	740	0.226	-	-	0.226	0.226	N	C/SLV <1

Table M-14
Identification of COPCs in Soil at Sandblast Area AOPC - Construction Worker
Bradford Island -Upland Operable Unit
(2 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-17)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
Total PCBs (Aroclors)	c	84%	419	740	0.566	-	-	0.566	0.566	N	C/SLV <1
VOCs (ug/kg)											
1,1,1-Trichloroethane (TCA)	n	6%	0.157	38,000,000	0.00000000413	0.00000173	-	0.00000173	0.00000000413	N	C/SLV <1
1,1-Dichloroethene	n	0%	-	12,000,000	-	0.0000488	0.00636	0.0000488	0.00636	Y	PCE is a COPC (2)
1,2,4-Trimethylbenzene	n	43%	4,340	2,000,000	0.00217	-	-	0.00217	0.00217	N	C/SLV <1
1,3,5-Trimethylbenzene	n	16%	1,530	1,500,000	0.00102	-	-	0.00102	0.00102	N	C/SLV <1
2-Butanone (MEK)	n	39%	12.4	200,000,000	0.0000000620	-	-	0.0000000620	0.0000000620	N	C/SLV <1
2-Hexanone	n	6%	5.08	1,400,000	0.00000363	-	-	0.00000363	0.00000363	N	C/SLV <1
4-Isopropyltoluene	n	35%	18.9	24,000,000	0.000000788	-	-	0.000000788	0.000000788	N	C/SLV <1
4-Methyl-2-pentanone (MIBK)	n	18%	0.519	53,000,000	0.00000000979	-	-	0.00000000979	0.00000000979	N	C/SLV <1
Acetone	n	47%	114	630,000,000	0.000000181	-	-	0.000000181	0.000000181	N	C/SLV <1
Benzene	c	39%	0.462	340,000	0.00000136	-	-	0.00000136	0.00000136	N	C/SLV <1
Bromomethane	n	16%	1.06	330,000	0.00000321	-	-	0.00000321	0.00000321	N	C/SLV <1
Carbon Disulfide	n	49%	1.05	3,700,000	0.000000284	0.000255	-	0.000255	0.000000284	N	C/SLV <1
Chloroform	c	6%	5.36	380,000	0.0000141	-	-	0.0000141	0.0000141	N	C/SLV <1
cis-1,2-Dichloroethene	n	8%	13.6	3,100,000	0.00000439	0.00548	-	0.00549	0.00000439	Y	PCE is a COPC (2)
Dichlorodifluoromethane	n	10%	6.06	780,000	0.00000777	-	-	0.00000777	0.00000777	N	C/SLV <1
Dichloromethane (Methylene Chloride)	c	35%	52.5	2,700,000	0.0000194	0.00000547	0.0380	0.0000249	0.0381	N	C/SLV <1
Ethylbenzene	c	20%	4.41	1,600,000	0.00000276	-	-	0.00000276	0.00000276	N	C/SLV <1
m,p-Xylenes	n	22%	1,710	19,000,000	0.0000900	-	-	0.0000900	0.0000900	N	C/SLV <1
Naphthalene	c	22%	1.79	580,000	0.00000309	-	-	0.00000309	0.00000309	N	C/SLV <1
n-Propylbenzene	n	6%	33.3	21,000,000	0.00000159	-	-	0.00000159	0.00000159	N	C/SLV <1
o-Xylene	n	10%	188	19,000,000	0.00000989	-	-	0.00000989	0.00000989	N	C/SLV <1
Tetrachloroethene (PCE)	c	16%	99,000	40,000	2.48	0.0111	3.86	2.49	6.33	Y	C/SLV >1
Toluene	n	53%	8,790	24,000,000	0.000366	0.00000305	0.000492	0.000369	0.000859	N	C/SLV <1
trans-1,2-Dichloroethene	n	2%	2.28	4,500,000	0.000000507	0.000121	0.0121	0.000122	0.0121	Y	PCE is a COPC (2)
Trichloroethene (TCE)	c	20%	1,630	43,000	0.0379	0.0209	1.34	0.0588	NE	Y	PCE is a COPC (2)
Vinyl Chloride	c	0%	-	30,000	-	0.000917	44.0	0.000917	44.0	Y	PCE is a COPC (2)
SVOCs (ug/kg)											
Benzoic Acid	n	29%	130	2,500,000,000	0.0000000520	-	-	0.0000000520	0.0000000520	N	C/SLV <1
Bis(2-ethylhexyl) Phthalate	c	74%	71,800	1,200,000	0.0598	-	-	0.0598	0.0598	N	C/SLV <1
Butyl Benzyl Phthalate	c	14%	14.3	910,000	0.0000157	-	-	0.0000157	0.0000157	N	C/SLV <1
Carbazole	c	57%	105	1,000,000	0.000105	-	-	0.000105	0.000105	N	C/SLV <1
Dibenzofuran	n	56%	114	1,000,000	0.000114	-	-	0.000114	0.000114	N	C/SLV <1
Dimethyl Phthalate	n	7%	31.0	1,200,000	0.0000258	-	-	0.0000258	0.0000258	N	C/SLV <1
Di-n-butyl Phthalate	n	33%	50.2	62,000,000	0.000000810	-	-	0.000000810	0.000000810	N	C/SLV <1

Table M-14
Identification of COPCs in Soil at Sandblast Area AOPC - Construction Worker
Bradford Island -Upland Operable Unit
(3 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-17)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
Di-n-octyl Phthalate	n	17%	24.3	1,200,000	0.0000203	-	-	0.0000203	0.0000203	N	C/SLV <1
Phenol	n	12%	35.0	180,000,000	0.000000194	-	-	0.000000194	0.000000194	N	C/SLV <1
PAHs (ug/kg)											
2-Methylnaphthalene	n	44%	22.4	4,100,000	0.00000546	0.000555	0.000124	0.000561	0.000130	N	C/SLV <1
Acenaphthene	n	74%	607	19,000,000	0.0000319	0.00000614	0.0000201	0.0000381	0.0000521	N	C/SLV <1
Acenaphthylene	n	37%	27.6	580,000	0.0000476	-	-	0.0000476	0.0000476	N	C/SLV <1
Anthracene	n	84%	723	93,000,000	0.00000777	0.00000115	0.00000152	0.00000892	0.00000929	N	C/SLV <1
Benzo(a)anthracene	c	84%	4,100	21,000	0.195	-	-	0.195	0.195	N	C/SLV <1
Benzo(a)pyrene	c	86%	3,980	2,100	1.90	0.0169	2.36	1.91	4.25	Y	C/SLV >1
Benzo(b)fluoranthene	c	94%	2,210	21,000	0.105	-	-	0.105	0.105	N	C/SLV <1
Benzo(g,h,i)perylene	c	79%	982	210,000	0.00468	-	-	0.00468	0.00468	N	C/SLV <1
Benzo(k)fluoranthene	c	94%	764	210,000	0.00364	-	-	0.00364	0.00364	N	C/SLV <1
Benzofluoranthenes, Total	c	84%	9,420	21,000	0.449	-	-	0.449	0.449	N	C/SLV <1
Chrysene	c	88%	4,290	2,100,000	0.00204	-	-	0.00204	0.00204	N	C/SLV <1
Dibenz(a,h)anthracene	c	61%	224	2,100	0.107	0.0320	0.373	0.139	0.479	N	C/SLV <1
Fluoranthene	n	88%	10,100	8,900,000	0.00113	0.0000207	0.000239	0.00116	0.00137	N	C/SLV <1
Fluorene	n	65%	212	12,000,000	0.0000177	0.0000127	0.0000173	0.0000303	0.0000349	N	C/SLV <1
Indeno(1,2,3-cd)pyrene	c	84%	1,880	21,000	0.0895	0.275	2.10	0.3644	NE	N	C/SLV <1
Naphthalene	c	56%	76.2	580,000	0.000131	-	-	0.000131	0.000131	N	C/SLV <1
Phenanthrene	n	91%	2,730	93,000,000	0.0000294	-	-	0.0000294	0.0000294	N	C/SLV <1
Pyrene	n	91%	10,900	6,700,000	0.00163	0.0000237	0.0000314	0.00165	0.00166	N	C/SLV <1
TPH (mg/kg)											
Diesel Range Organics	n	82%	256	23,000	0.0111	-	-	0.0111	0.0111	N	C/SLV <1
Gasoline Range Organics	n	21%	963	13,000	0.0741	0.00116	-	0.0752	0.0741	N	C/SLV <1
Residual Range Organics	n	86%	558	40,000	0.0140	-	-	0.0140	0.0140	N	C/SLV <1
Sum cPAH C/RBC (ELCR)					**1.9E-06**						
Sum non-carcinogenic C/RBC (HI)					**0.115**						
Sum carcinogenic C/RBC (ELCR)					**7.0E-06**						

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
ft bgs = feet below surface
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).

Table M-14
Identification of COPCs in Soil at Sandblast Area AOPC - Construction Worker
Bradford Island -Upland Operable Unit
(4 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-17)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$	Multimedia (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$		

max =maximum
MCL = maximum contaminant level
mg/kg = milligrams per kilogram
mm = multimedia
n = non-carcinogen
NE = multi-media was not evaluated since the chemical is already identified as a COPC.
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table except for degradation products of PCE (see footnote 2). Reporting limits for non-detected chemicals are evaluated separately.
Construction Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Construction,. 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Screening Levels Values for Groundwater: 1. DEQ Groundwater in Excavation Construction/Excavation RBCs (Appendix J-4b), 2. USEPA Tapwater RSL, and 3. Surrogates used as noted in Appendix J-4b.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.
For inorganics, the higher of the 95% Upper Prediction Limit (UPL) and lowest HH SLV was selected as the HH SLV. For all other analytes the heirarchy described above was used.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Due to the lack of speciation data, the chromium in soil were compared to the more conservative hexavalent chromium SLVs.
(2) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a).

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum cPAH C/RBC (ELCR) = includes only individual carcinogenic polyaromatic hydrocarbons selected as a COPC. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation.
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation. Total aroclors, rather than individual aroclors, was used in the summation.
Ratios for SLVs based on Reference Upper Prediction Limits (UPLs) are not included in sum totals.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-15
Identification of COPCs in Soil at Sandblast Area AOPC - Excavation Worker
Bradford Island -Upland Operable Unit
(1 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-17)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
INORGANICS (mg/kg)											
Antimony	n	74%	2.36	410	0.00576	-	-	0.00576	0.00576	N	C/SLV <1
Arsenic	c	99%	9.86	370	0.0266	0.000645	208	0.0273	NE	N	C/SLV <1
Cadmium	c	86%	2.54	4,300	0.000591	-	-	0.000591	0.000591	N	C/SLV <1
Chromium	c	100%	560	26,000 (1)	0.0215	-	-	0.0215	0.0215	N	C/SLV <1
Lead - sieved <250um	n	100%	418	800	0.523	-	-	0.523	0.523	N	C/SLV <1
Lead - sieved <2mm	n	100%	303	800	0.379	-	-	0.379	0.379	N	C/SLV <1
Lead - unsieved	n	100%	512	800	0.640	-	-	0.640	0.640	N	C/SLV <1
Nickel	c	100%	243	20,000	0.0122	-	-	0.0122	0.0122	N	C/SLV <1
Selenium	n	59%	0.476	5,100	0.0000933	-	-	0.0000933	0.0000933	N	C/SLV <1
Silver	n	96%	0.151	43,000	0.00000351	-	-	0.00000351	0.00000351	N	C/SLV <1
Zinc	n	100%	231	310,000	0.000745	-	-	0.000745	0.000745	N	C/SLV <1
BUTYLTINS (ug/kg)											
Dibutyltin	n	29%	26.6	180,000	0.000148	-	-	0.000148	0.000148	N	C/SLV <1
Monobutyltin	n	36%	8.94	180,000	0.0000497	0.00196	-	0.00201	0.0000497	N	C/SLV <1
Tributyltin	n	26%	248	180,000	0.00138	-	-	0.00138	0.00138	N	C/SLV <1
PESTICIDES (ug/kg)											
4,4'-DDD	c	5.4%	0.721	2,300,000	0.000000313	-	-	0.000000313	0.000000313	N	C/SLV <1
4,4'-DDE	c	19%	0.567	1,600,000	0.000000354	-	-	0.000000354	0.000000354	N	C/SLV <1
4,4'-DDT	c	60%	79.4	1,600,000	0.0000496	-	-	0.0000496	0.0000496	N	C/SLV <1
BHC (delta)	n	5.4%	1.30	74,000	0.0000176	-	-	0.0000176	0.0000176	N	C/SLV <1
BHC (gamma) Lindane	c	8%	1.06	420,000	0.00000252	-	-	0.00000252	0.00000252	N	C/SLV <1
Chlordane (alpha)	c	12%	0.776	1,500,000	0.000000517	-	-	0.000000517	0.000000517	N	C/SLV <1
Chlordane (gamma)	c	40%	20.4	1,500,000	0.0000136	-	-	0.0000136	0.0000136	N	C/SLV <1
Dieldrin	c	5.4%	0.483	29,000	0.0000167	-	-	0.0000167	0.0000167	N	C/SLV <1
Endosulfan I	n	14%	0.809	40,000,000	0.0000000202	-	-	0.0000000202	0.0000000202	N	C/SLV <1
Endosulfan II	n	8%	0.447	40,000,000	0.0000000112	-	-	0.0000000112	0.0000000112	N	C/SLV <1
Endosulfan Sulfate	n	16%	0.889	40,000,000	0.0000000222	-	-	0.0000000222	0.0000000222	N	C/SLV <1
Endrin	n	11%	3.89	2,000,000	0.00000195	-	-	0.00000195	0.00000195	N	C/SLV <1
Endrin Aldehyde	n	14%	3.44	2,000,000	0.00000172	-	-	0.00000172	0.00000172	N	C/SLV <1
Endrin Ketone	n	11%	2.88	2,000,000	0.00000144	-	-	0.00000144	0.00000144	N	C/SLV <1
Heptachlor	c	11%	0.415	100,000	0.00000415	-	-	0.00000415	0.00000415	N	C/SLV <1
Methoxychlor	n	5.4%	1.04	3,100,000	0.000000335	-	-	0.000000335	0.000000335	N	C/SLV <1
PCBs (ug/kg)											

Table M-15
Identification of COPCs in Soil at Sandblast Area AOPC - Excavation Worker
Bradford Island -Upland Operable Unit
(2 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-17)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
Aroclor 1254	c	14%	136	740	0.184	-	-	0.184	0.184	N	C/SLV <1
Aroclor 1260	c	84%	167	740	0.226	-	-	0.226	0.226	N	C/SLV <1
Total PCBs (Aroclors)	c	84%	419	740	0.566	-	-	0.566	0.566	N	C/SLV <1
VOCs (ug/kg)											
1,1,1-Trichloroethane (TCA)	n	6%	0.157	38,000,000	0.00000000413	0.00000173	-	0.00000173	0.00000000413	N	C/SLV <1
1,2,4-Trimethylbenzene	n	43%	4,340	54,000,000	0.0000804	-	-	0.0000804	0.0000804	N	C/SLV <1
1,3,5-Trimethylbenzene	n	16%	1,530	42,000,000	0.0000364	-	-	0.0000364	0.0000364	N	C/SLV <1
2-Butanone (MEK)	n	39%	12.4	200,000,000	0.0000000620	-	-	0.0000000620	0.0000000620	N	C/SLV <1
2-Hexanone	n	6%	5.08	1,400,000	0.00000363	-	-	0.00000363	0.00000363	N	C/SLV <1
4-Isopropyltoluene	n	35%	18.9	24,000,000	0.000000788	-	-	0.000000788	0.000000788	N	C/SLV <1
4-Methyl-2-pentanone (MIBK)	n	18%	0.519	53,000,000	0.00000000979	-	-	0.00000000979	0.00000000979	N	C/SLV <1
Acetone	n	47%	114	630,000,000	0.000000181	-	-	0.000000181	0.000000181	N	C/SLV <1
Benzene	c	39%	0.462	9,500,000	0.0000000486	-	-	0.0000000486	0.0000000486	N	C/SLV <1
Bromomethane	n	16%	1.06	9,200,000	0.000000115	-	-	0.000000115	0.000000115	N	C/SLV <1
Carbon Disulfide	n	49%	1.05	3,700,000	0.000000284	0.000255	-	0.000255	0.000000284	N	C/SLV <1
Chloroform	c	6%	5.36	11,000,000	0.000000487	-	-	0.000000487	0.000000487	N	C/SLV <1
cis-1,2-Dichloroethene	n	8%	13.6	86,000,000	0.000000158	0.00548	-	0.00548	0.000000158	N	C/SLV <1
Dichlorodifluoromethane	n	10%	6.06	780,000	0.00000777	-	-	0.00000777	0.00000777	N	C/SLV <1
Dichloromethane (Methylene Chloride)	c	35%	52.5	75,000,000	0.000000700	0.00000547	0.0380	0.00000617	0.0380	N	C/SLV <1
Ethylbenzene	c	20%	4.41	44,000,000	0.000000100	-	-	0.000000100	0.000000100	N	C/SLV <1
m,p-Xylenes	n	22%	1,710	2,700,000	0.000633	-	-	0.000633	0.000633	N	C/SLV <1
Naphthalene	c	22%	1.79	16,000,000	0.000000112	-	-	0.000000112	0.000000112	N	C/SLV <1
n-Propylbenzene	n	6%	33.3	21,000,000	0.00000159	-	-	0.00000159	0.00000159	N	C/SLV <1
o-Xylene	n	10%	188	19,000,000	0.00000989	-	-	0.00000989	0.00000989	N	C/SLV <1
Tetrachloroethene (PCE)	c	16%	99,000	1,100,000	0.0900	0.0111	3.86	0.101	NE	N	C/SLV <1
Toluene	n	53%	8,790	45,000,000	0.000195	0.00000305	0.000492	0.000198	0.000688	N	C/SLV <1
Trichloroethene (TCE)	c	20%	1,630	1,200,000	0.00136	0.0209	1.34	0.0223	NE	N	C/SLV <1
SVOCs (ug/kg)											
Benzoic Acid	n	29%	130	2,500,000,000	0.0000000520	-	-	0.0000000520	0.0000000520	N	C/SLV <1
Bis(2-ethylhexyl) Phthalate	c	74%	71,800	33,000,000	0.00218	-	-	0.00218	0.00218	N	C/SLV <1
Butyl Benzyl Phthalate	c	14%	14.3	910,000	0.0000157	-	-	0.0000157	0.0000157	N	C/SLV <1
Carbazole	c	57%	105	1,000,000	0.000105	-	-	0.000105	0.000105	N	C/SLV <1
Dibenzofuran	n	56%	114	1,000,000	0.000114	-	-	0.000114	0.000114	N	C/SLV <1
Dimethyl Phthalate	n	7%	31.0	33,000,000	0.000000939	-	-	0.000000939	0.000000939	N	C/SLV <1
Di-n-butyl Phthalate	n	33%	50.2	62,000,000	0.000000810	-	-	0.000000810	0.000000810	N	C/SLV <1
Di-n-octyl Phthalate	n	17%	24.3	33,000,000	0.000000736	-	-	0.000000736	0.000000736	N	C/SLV <1

Table M-15
Identification of COPCs in Soil at Sandblast Area AOPC - Excavation Worker
Bradford Island -Upland Operable Unit
(3 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-17)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
Phenol	n	12%	35.0	180,000,000	0.000000194	-	-	0.000000194	0.000000194	N	C/SLV <1
PAHs (ug/kg)											
2-Methylnaphthalene	n	44%	22.4	4,100,000	0.00000546	0.000555	0.000124	0.000561	0.000130	N	C/SLV <1
Acenaphthene	n	74%	607	33,000,000	0.0000184	0.00000614	0.0000201	0.0000245	0.0000385	N	C/SLV <1
Acenaphthylene	n	37%	27.6	16,000,000	0.00000173	-	-	0.00000173	0.00000173	N	C/SLV <1
Anthracene	n	84%	723	170,000,000	0.00000425	0.00000115	0.00000152	0.00000540	0.00000577	N	C/SLV <1
Benzo(a)anthracene	c	84%	4,100	590,000	0.00695	-	-	0.00695	0.00695	N	C/SLV <1
Benzo(a)pyrene	c	86%	3,980	59,000	0.0675	0.0169	2.36	0.0843	NE	N	C/SLV <1
Benzo(b)fluoranthene	c	94%	2,210	590,000	0.00375	-	-	0.00375	0.00375	N	C/SLV <1
Benzo(g,h,i)perylene	c	79%	982	5,900,000	0.000166	-	-	0.000166	0.000166	N	C/SLV <1
Benzo(k)fluoranthene	c	94%	764	5,900,000	0.000129	-	-	0.000129	0.000129	N	C/SLV <1
Benzofluoranthenes, Total	c	84%	9,420	590,000	0.0160	-	-	0.0160	0.0160	N	C/SLV <1
Chrysene	c	88%	4,290	59,000,000	0.0000727	-	-	0.0000727	0.0000727	N	C/SLV <1
Dibenz(a,h)anthracene	c	61%	224	59,000	0.00380	0.0320	0.373	0.0357	0.377	N	C/SLV <1
Fluoranthene	n	88%	10,100	22,000,000	0.000459	0.0000207	0.000239	0.000480	0.000698	N	C/SLV <1
Fluorene	n	65%	212	22,000,000	0.00000964	0.0000127	0.0000173	0.0000223	0.0000269	N	C/SLV <1
Indeno(1,2,3-cd)pyrene	c	84%	1,880	590,000	0.00319	0.275	2.10	0.278	NE	N	C/SLV <1
Naphthalene	c	56%	76.2	16,000,000	0.00000476	-	-	0.00000476	0.00000476	N	C/SLV <1
Phenanthrene	n	91%	2,730	170,000,000	0.0000161	-	-	0.0000161	0.0000161	N	C/SLV <1
Pyrene	n	91%	10,900	17,000,000	0.000641	0.0000237	0.0000314	0.000665	0.000673	N	C/SLV <1
TPH (mg/kg)											
Diesel Range Organics	n	82%	256	70,000	0.00366	-	-	0.00366	0.00366	N	C/SLV <1
Gasoline Range Organics	n	21%	963	22,000	0.0438	0.00116	-	0.0449	0.0438	N	C/SLV <1
Residual Range Organics	n	86%	558	40,000	0.0140	-	-	0.0140	0.0140	N	C/SLV <1
Sum non-carcinogenic C/RBC (HI)					**0.0718**						
Sum carcinogenic C/RBC (ELCR)					**8.1E-07**						

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
ft bgs = feet below surface
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level

Table M-15
Identification of COPCs in Soil at Sandblast Area AOPC - Excavation Worker
Bradford Island -Upland Operable Unit
(4 of 4)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-17)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$	Multimedia (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$		

mg/kg = milligrams per kilogram
mm = multimedia
n = non-carcinogen
NE = multi-media was not evaluated since the chemical is already identified as a COPC.
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table). Reporting limits for non-detected chemicals are evaluated separately.
Excavation Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Excavation), 2. USEPA Soil Industrial RSL, 3. Outdoor Worker SLV, and 4. Surrogate used as noted in Appendix J-4a
Screening Levels Values for Groundwater: 1. DEQ Groundwater in Excavation Construction/Excavation RBCs (Appendix J-4b), 2. USEPA Tapwater RSL, and 3. Surrogates used as noted in Appendix J-4b
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c
For inorganics, the higher of the 95% Upper Prediction Limit (UPL) and lowest HH SLV was selected as the HH SLV. For all other analytes the heirarchy described above was used.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Due to the lack of speciation data, the chromium in soil were compared to the more conservative hexavalent chromium SLVs

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation. Total aroclors, rather than individual aroclors, was used in the summation
Ratios for SLVs based on Reference Upper Prediction Limits (UPLs) are not included in sum totals.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-16
Identification of COPCs in Soil Gas at Sandblast Area AOPC - Indoor Worker
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	note	Max Detected Value	Detection Rate	Selected HH SLV (Table J-4d)	Site concentration(C) / SLV						Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-13)	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-18)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia sum(C/SLV_{soil} +C/SLV_{gw} + C/SLV_{sg})	Multimedia sum(C/SLV_{soil} +C/SLV_{gw} + C/SLV_{sg})		
VOCs (ug/m3)												
1,1,1-Trichloroethane (TCA)	n	98.0	100%	22,000,000	0.00000445	-	0.000209	-	0.000213	0.00000445	N	C/SLV <1
1,1-Dichloroethene	n	-	0%	880,000	-	-	0.00618	0.00636	0.00618	0.00636	Y	PCE is a COPC (1)
1,2,4-Trimethylbenzene	n	18,500	100%	31,000	0.597	0.00471	-	-	0.601	0.601	N	C/SLV <1
1,3,5-Trimethylbenzene	n	6,250	100%	26,000	0.240	0.00102	-	-	0.241	0.241	N	C/SLV <1
1,3-Butadiene	c	210	80%	410	0.512	-	-	-	0.512	0.512	N	C/SLV <1
1,4-Dioxane	c	1.10	20%	1,600	0.000688	-	-	-	0.000688	0.000688	N	C/SLV <1
2,2,4-Trimethylpentane	n	1.80	20%	31,000	0.0000581	-	-	-	0.0000581	0.0000581	N	C/SLV <1
2-Butanone (MEK)	n	31.0	40%	22,000,000	0.00000141	0.0000000665	-	-	0.00000148	0.00000148	N	C/SLV <1
4-Ethyltoluene	n	9,150	100%	22,000,000	0.000416	-	-	-	0.000416	0.000416	N	C/SLV <1
4-Methyl-2-pentanone (MIBK)	n	2.10	20%	13,000,000	0.000000162	0.00000000991	-	-	0.000000171	0.000000171	N	C/SLV <1
Acetone	n	97.0	40%	140,000,000	0.000000693	0.000000194	-	-	0.000000887	0.000000887	N	C/SLV <1
Benzene	c	85.0	80%	1,600	0.0531	0.0000136	-	-	0.0531	0.0531	N	C/SLV <1
Carbon Disulfide	n	42.0	60%	3,100,000	0.0000135	0.000000303	0.000255	-	0.000269	0.0000139	N	C/SLV <1
Chloroform	c	0.750	20%	530	0.00142	0.000335	-	-	0.00175	0.00175	N	C/SLV <1
cis-1,2-Dichloroethene	n	330	100%	260,000	0.00127	0.0000120	1.83	-	NE	0.00128	Y	PCE is a COPC (1)
Cyclohexane	n	24.0	60%	26,000,000	0.000000923	-	-	-	0.000000923	0.000000923	N	C/SLV <1
Dichlorodifluoromethane	n	3.20	40%	880,000	0.00000364	0.00000864	-	-	0.0000123	0.0000123	N	C/SLV <1
Dichloromethane (Methylene Chloride)	c	1.80	20%	26,000	0.0000692	0.000181	0.0398	0.0380	0.0400	0.0383	N	C/SLV <1
Ethanol	n	13.0	40%	-	-	-	-	-	-	-	N	Not toxic
Ethylbenzene	c	1,550	100%	4,900	0.316	0.0000335	-	-	0.316	0.316	N	C/SLV <1
Heptane	n	87.0	80%	3,100,000	0.0000281	-	-	-	0.0000281	0.0000281	N	C/SLV <1
Hexane	n	110	80%	3,100,000	0.0000355	-	-	-	0.0000355	0.0000355	N	C/SLV <1
Isopropylbenzene	n	675	100%	1,800,000	0.000375	-	-	-	0.000375	0.000375	N	C/SLV <1
m,p-Xylenes	n	5,850	100%	440,000	0.0133	0.000674	-	-	0.0140	0.0140	N	C/SLV <1
n-Propylbenzene	n	2,300	100%	4,400,000	0.000523	0.00000169	-	-	0.000524	0.000524	N	C/SLV <1
o-Xylene	n	2,800	100%	3,100,000	0.000903	0.0000105	-	-	0.000914	0.000914	N	C/SLV <1
Tetrachloroethene (PCE)	c	34,000	100%	2,100	16.2	5.16	28.6	3.86	49.9	25.2	Y	C/SLV >1
Toluene	n	47,500	100%	22,000,000	0.00216	0.000122	0.000278	0.000492	0.00256	0.00277	N	C/SLV <1
trans-1,2-Dichloroethene	n	4.00	20%	260,000	0.0000154	0.000000248	0.0155	0.0121	0.0155	0.0122	Y	PCE is a COPC (1)
Trichloroethene (TCE)	c	610	100%	140	4.36	0.456	85.9	1.34	90.7	6.15	Y	C/SLV >1
Trichlorofluoromethane	n	2.20	20%	3,100,000	0.000000710	-	-	-	0.000000710	0.000000710	N	C/SLV <1
Vinyl Chloride	c	-	0%	2,800	-	-	44.0	44.0	44.0	44.0	Y	PCE is a COPC (1)
Sum non-carcinogenic C/RBC (HI)					**0.856**							
Sum carcinogenic C/RBC (ELCR)					**2.1E-05**							

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{sg}/SLV_{sg} only (i.e. single medium)
ESL = environmental screening leve
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{sg}/SLV_{sg} only (i.e. single medium)

Table M-16
Identification of COPCs in Soil Gas at Sandblast Area AOPC - Indoor Worker
Bradford Island -Upland Operable Unit
(2 of 2)

Chemicals of Interest	note	Max Detected Value	Detection Rate	Selected HH SLV (Table J-4d)	Site concentration(C) / SLV						Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-13)	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-18)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-19)	Multimedia sum(C/SLV_{soil} +C/SLV_{gw} + C/SLV_{sg})	Multimedia sum(C/SLV_{soil} +C/SLV_{gw} + C/SLV_{sg})		

max =maximum
MCL = maximum contaminant leve
mm = multimedia
n = noncarcinogen
NE = Multi-media was not evaluated since the chemical is already identified as a COPC
NRWQC = national recommended water quality criteria
RBC = risk based concentration
RSL = regional screening leve
RWQCB = San Francisco Bay Regional Water Quality Control Boarc
sg = soil gas pathway
SLV = screening level value
ug/m3 = micrograms per cubic meter
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table except for degradation products of PCE (see footnote 1). Reporting limits for non-detected chemicals are evaluated separatel
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, 3. Surrogate used as noted in Appendix J-4

Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4b.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4
Hierarchy developed to select Screening Level Values for Soil gas; 1. DEQ Soil Gas Vapor Intrusion Occupational RBCs, 2. Adjusted USEPA Industrial Air RSLs, and 3. Surrogates used as noted in Appendix J-4
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 200
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technolog
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May

Footnotes
(1) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a).

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SL
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogen
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogen
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following condition
[C/SLV] > 1.0 for an individual chemical in a given mediur
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given mediur
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a)

Table M-17
Identification of COPCs in Groundwater at Sandblast Area AOPC - Construction and Excavation Workers
Bradford Island -Upland Operable Unit
(1 of 3)

Chemicals of Interest	note	Medium	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (direct contact)	$\frac{C_{soil}}{SLV_{soil}}$ (Construction Worker Table M-14)	Multimedia (1) (direct contact) sum($C/SLV_{soil} + C/SLV_{gw}$)		
INORGANICS (mg/L)										
Arsenic	c	Groundwater	100%	0.00374	5.8	0.000645	0.758	0.759	N	carc C/SLV <1
Iron	n	Groundwater	80%	0.499	26	0.0192	-	0.0192	N	C/SLV <1
Vanadium	n	Groundwater	90%	0.00254	0.0026	0.977	-	0.977	Y	C/SLV >0.1
BUTYLTINS (ug/L)										
Monobutyltin	n	Groundwater	10%	0.0216	11	0.00196	0.0000497	0.00201	N	C/SLV <1
VOCs (ug/L)										
1,1,1-Trichloroethane (TCA)	n	Groundwater	40%	1.90	1,100,000	0.00000173	0.00000000413	0.00000173	N	C/SLV <1
1,1-Dichloroethane	c	Groundwater	40%	5.00	10,000	0.000500	-	0.000500	N	carc C/SLV <1
1,1-Dichloroethene	n	Groundwater	20%	2.10	43,000	0.0000488	-	0.0000488	N	C/SLV <1
Carbon Disulfide	n	Groundwater	100%	0.255	1,000	0.000255	0.000000284	0.000255	N	C/SLV <1
cis-1,2-Dichloroethene	n	Groundwater	75%	658	120,000	0.00548	0.00000439	0.00549	N	C/SLV <1
Dichloromethane (Methylene Chloride)	c	Groundwater	20%	0.175	32,000	0.00000547	0.0000194	0.0000249	N	carc C/SLV <1
Tetrachloroethene (PCE)	c	Groundwater	80%	2.66	240	0.0111	2.48	NE	N	carc C/SLV <1
Toluene	n	Groundwater	100%	0.640	210,000	0.00000305	0.000366	0.000369	N	C/SLV <1
trans-1,2-Dichloroethene	n	Groundwater	40%	1.70	14,000	0.000121	0.000000507	0.000122	N	C/SLV <1
Trichloroethene (TCE)	c	Groundwater	75%	3.35	160	0.0209	0.0379	0.0588	N	carc C/SLV <1
Vinyl Chloride	c	Groundwater	20%	1.10	1,200	0.000917	-	0.000917	N	carc C/SLV <1
TPH (mg/L)										
Diesel Range Organics	n	Groundwater	10%	0.0173	- (2)	-	0.0111	0.0111	N	C/SLV <1 (2)
Gasoline Range Organics	n	Groundwater	15%	0.0151	13	0.00116	0.0741	0.0752	N	C/SLV <1
PAHs (ug/L)										
2-Methylnaphthalene	n	Groundwater - DP	67%	0.0833	150	0.000555	0.00000546	0.000561	N	C/SLV <1
Acenaphthene	n	Groundwater - DP	56%	0.0135	2,200	0.00000614	0.0000319	0.0000381	N	C/SLV <1
Anthracene	n	Groundwater - DP	11%	0.0126	11,000	0.00000115	0.00000777	0.00000892	N	C/SLV <1
Benzo(a)pyrene	c	Groundwater - DP	11%	0.00895	0.53	0.0169	1.90	NE	N	carc C/SLV <1
Dibenz(a,h)anthracene	c	Groundwater - DP	11%	0.00671	0.21	0.0320	0.107	0.139	N	carc C/SLV <1
Fluoranthene	n	Groundwater - DP	11%	0.0311	1,500	0.0000207	0.00113	0.00116	N	C/SLV <1
Fluorene	n	Groundwater - DP	67%	0.0190	1,500	0.0000127	0.0000177	0.0000303	N	C/SLV <1
Indeno(1,2,3-cd)pyrene	c	Groundwater - DP	11%	0.00797	0.029	0.275	0.0895	0.364	N	carc C/SLV <1
Pyrene	n	Groundwater - DP	33%	0.0261	1,100	0.0000237	0.00163	0.00165	N	C/SLV <1
Sum non-carcinogenic C/RBC (HI)		**Groundwater**				**1.01**				
Sum carcinogenic C/RBC (ELCR)		**Groundwater**				**3.6E-07**				

Table M-17
Identification of COPCs in Groundwater at Sandblast Area AOPC - Construction and Excavation Workers
Bradford Island -Upland Operable Unit
(2 of 3)

Chemicals of Interest	note	Medium	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (direct contact)	$\frac{C_{soil}}{SLV_{soil}}$ (Construction Worker Table M-14)	Multimedia (1) (direct contact) sum($C/SLV_{soil} + C/SLV_{gw}$)		

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
DP = direct push
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
max =maximum
mg/L = milligrams per liter
n = non-carcinogen
NE = Multi-media was not evaluated since the chemical is already identified as a COPC.
PAHs = polyaromatic hydrocarbons
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals

Notes

Only detected chemicals with a detection frequency greater than 5% are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
Total metal results are reported.
Construction Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Construction,. 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Screening Levels Values for Groundwater: 1. DEQ Groundwater in Excavation Construction/Excavation RBCs (Appendix J-4b), 2. USEPA Tapwater RSL, and 3. Surrogates used as noted in Appendix J-4b.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes

(1) At the request of DEQ, COPC selection for groundwater is done separately for the on-site groundwater ingestion pathway and the groundwater discharge to surface water pathway. Therefore, this screening accounts only for on-site upland exposure to groundwater.
(2) The SLV for these chemcials are not available due to exceeding the solubility point in water.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens

COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium

Table M-17
Identification of COPCs in Groundwater at Sandblast Area AOPC - Construction and Excavation Workers
Bradford Island -Upland Operable Unit
(3 of 3)

Chemicals of Interest	note	Medium	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (direct contact)	$\frac{C_{soil}}{SLV_{soil}}$ (Construction Worker Table M-14)	Multimedia (1) (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$		

[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-18
Identification of COPCs in Groundwater at Sandblast Area AOPC - Potable Water User
Bradford Island -Upland Operable Unit
(1 of 3)

Chemicals of Interest	note	Medium	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV				Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-13)	$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$ (Indoor Worker Table M-16)	Multimedia (1) $sum(C/SLV_{soil} + C/SLV_{gw} + C/SLV_{sg})$		
INORGANICS (mg/L)											
Arsenic	c	Groundwater	100%	0.00374	0.000038	98.4	1.80	-	100	Y	carc C/SLV >1
Iron	n	Groundwater	80%	0.499	26	0.0192	-	-	0.0192	N	C/SLV <0.1 (2)
Vanadium	n	Groundwater	90%	0.00254	0.0026	0.977	-	-	0.977	Y	C/SLV >0.1
BUTYLTINS (ug/L)											
Monobutyltin	n	Groundwater	10%	0.0216	11	0.00196	0.0000479	-	0.00201	N	C/SLV <0.1
VOCs (ug/L)											
1,1,1-Trichloroethane (TCA)	n	Groundwater	40%	1.90	9,100	0.000209	-	0.00000445	0.000213	N	C/SLV <0.1
1,1-Dichloroethane	c	Groundwater	40%	5.00	2.3	2.17	-	-	2.17	Y	carc C/SLV >1
1,1-Dichloroethene	n	Groundwater	20%	2.10	340	0.00618	-	-	0.00618	Y	PCE is a COPC (3)
Carbon Disulfide	n	Groundwater	100%	0.255	1,000	0.000255	0.000000303	0.0000135	0.000269	N	C/SLV <0.1
cis-1,2-Dichloroethene	n	Groundwater	75%	658	360	1.83	0.0000120	0.00127	1.83	Y	C/SLV >0.1
Dichloromethane (Methylene Chloride)	c	Groundwater	20%	0.175	4.4	0.0398	0.000181	0.0000692	0.0400	N	carc C/SLV <1
Tetrachloroethene (PCE)	c	Groundwater	80%	2.66	0.093	28.6	5.16	16.2	49.9	Y	carc C/SLV >1
Toluene	n	Groundwater	100%	0.640	2,300	0.000278	0.000122	0.00216	0.00256	N	C/SLV <0.1
trans-1,2-Dichloroethene	n	Groundwater	40%	1.70	110	0.0155	0.000000248	0.0000154	0.0155	Y	PCE is a COPC (3)
Trichloroethene (TCE)	c	Groundwater	75%	3.35	0.039	85.9	0.456	4.36	90.7	Y	carc C/SLV >1
Vinyl Chloride	c	Groundwater	20%	1.10	0.025	44.0	-	-	44.0	Y	carc C/SLV >1
TPH (mg/L)											
Diesel Range Organics	n	Groundwater	10%	0.0173	0.09	0.192	0.00380	-	0.196	Y	C/SLV >0.1
Gasoline Range Organics	n	Groundwater	15%	0.0151	0.1	0.151	0.0468	-	0.198	Y	C/SLV >0.1
PAHs (ug/L)											
2-Methylnaphthalene	n	Groundwater - DP	67%	0.0833	150	0.000555	0.00000583	-	0.000561	N	C/SLV <0.1
Acenaphthene	n	Groundwater - DP	56%	0.0135	2,200	0.00000614	0.0000107	-	0.0000168	N	C/SLV <0.1
Anthracene	n	Groundwater - DP	11%	0.0126	11,000	0.00000115	0.00000454	-	0.00000569	N	C/SLV <0.1
Benzo(a)pyrene	c	Groundwater - DP	11%	0.00895	0.0029	3.09	8.85	-	11.9	Y	carc C/SLV >1
Dibenz(a,h)anthracene	c	Groundwater - DP	11%	0.00671	0.0029	2.31	0.881	-	3.20	Y	carc C/SLV >1
Fluoranthene	n	Groundwater - DP	11%	0.0311	1,500	0.0000207	0.000372	-	0.000393	N	C/SLV <0.1
Fluorene	n	Groundwater - DP	67%	0.0190	1,500	0.0000127	0.00000554	-	0.0000182	N	C/SLV <0.1
Indeno(1,2,3-cd)pyrene	c	Groundwater - DP	11%	0.00797	0.029	0.275	0.430	-	0.704	N	carc C/SLV <1
Pyrene	n	Groundwater - DP	33%	0.0261	1,100	0.0000237	0.000557	-	0.000581	N	C/SLV <0.1
Sum cPAH C/RBC (ELCR)						**5.4E-06**					
Sum non-carcinogenic C/RBC (HI)		**Groundwater**				**3.17**					
Sum carcinogenic C/RBC (ELCR)		**Groundwater**				**2.6E-04**					

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration

Table M-18
Identification of COPCs in Groundwater at Sandblast Area AOPC - Potable Water User
Bradford Island -Upland Operable Unit
(2 of 3)

Chemicals of Interest	note	Medium	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV				Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-13)	$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$ (Indoor Worker Table M-16)	Multimedia (1) $sum(C/SLV_{soil} + C/SLV_{gw} + C/SLV_{sg})$		

c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
DP = direct push
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/L = milligrams per liter
n = non-carcinogen
PAHs = polyaromatic hydrocarbons
RBC = risk based concentration
RSL = regional screening level
sg = soil gas
SLV = screening level value
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table except for degradation products of PCE (see footnote 2). Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
Total metal results are reported.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4b.
Hierarchy developed to select Screening Level Values for Soil gas; 1. DEQ Soil Gas Vapor Intrusion Occupational RBCs, 2. Adjusted USEPA Industrial Air RSLs, and 3. Surrogates used as noted in Appendix J-4d.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) At the request of DEQ, COPC selection for groundwater is done separately for the on-site groundwater ingestion pathway and the groundwater discharge to surface water pathway. Therefore, this screening accounts only for on-site upland exposure to groundwater.
(2) SLV is based on aesthetic considerations and is not included in summations or as COPCs.
(3) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a).

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum cPAH C/RBC (ELCR) = includes only individual carcinogenic polyaromatic hydrocarbons selected as a COPC.
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium

Table M-18
Identification of COPCs in Groundwater at Sandblast Area AOPC - Potable Water User
Bradford Island -Upland Operable Unit
(3 of 3)

Chemicals of Interest	note	Medium	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV				Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-13)	$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$ (Indoor Worker Table M-16)	Multimedia (1) $sum(C/SLV_{soil} + C/SLV_{gw} + C/SLV_{sg})$		

[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-19
Identification of COPCs in Groundwater at Sandblast Area AOPC - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	note	Medium	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV				Bioaccumulative Potential? (Y/N) (Table J-6)	Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-13)	$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$ (Indoor Worker Table M-16)	Multimedia (1) $sum(C/SLV_{soil} + C/SLV_{gw} + C/SLV_{sg})$			
INORGANICS (mg/L)												
Arsenic	c	Groundwater	100%	0.00374	0.000018	208	1.80	-	210	Y	Y	C/SLV >1
Iron	n	Groundwater	80%	0.499	0.3	1.66	-	-	1.66	N	N	See footnote (2)
Vanadium	n	Groundwater	90%	0.00254	-	-	-	-	-	NA	Y	No SLV
BUTYLTINS (ug/L)												
Monobutyltin	n	Groundwater	10%	0.0216	-	-	0.0000479	-	0.0000479	N	N	Not Bioaccumulative
VOCs (ug/L)												
1,1,1-Trichloroethane (TCA)	n	Groundwater	40%	1.90	-	-	-	0.00000445	0.00000445	N	N	Not Bioaccumulative
1,1-Dichloroethane	c	Groundwater	40%	5.00	-	-	-	-	-	N	N	Not Bioaccumulative
1,1-Dichloroethene	n	Groundwater	20%	2.10	330	0.00636	-	-	0.00636	N	Y	PCE is a COPC (3)
Carbon Disulfide	n	Groundwater	100%	0.255	-	-	0.000000303	0.0000135	0.0000139	N	N	Not Bioaccumulative
cis-1,2-Dichloroethene	n	Groundwater	75%	658	-	-	0.0000120	0.00127	0.00128	N	Y	PCE is a COPC (3)
Dichloromethane (Methylene Chloride)	c	Groundwater	20%	0.175	4.6	0.0380	0.000181	0.0000692	0.0383	N	N	C/SLV <1
Tetrachloroethene (PCE)	c	Groundwater	80%	2.66	0.69	3.86	5.16	16.2	25.2	N	Y	C/SLV >1
Toluene	n	Groundwater	100%	0.640	1,300	0.000492	0.000122	0.00216	0.00277	N	N	C/SLV <1
trans-1,2-Dichloroethene	n	Groundwater	40%	1.70	140	0.0121	0.000000248	0.0000154	0.0122	N	Y	PCE is a COPC (3)
Trichloroethene (TCE)	c	Groundwater	75%	3.35	2.5	1.34	0.456	4.36	6.15	N	Y	C/SLV >1
Vinyl Chloride	c	Groundwater	20%	1.10	0.025	44.0	-	-	44.0	N	Y	C/SLV >1
TPH (mg/L)												
Diesel Range Organics	n	Groundwater	10%	0.0173	-	-	0.00380	-	0.00380	NA	N	Evaluated as PAHs
Gasoline Range Organics	n	Groundwater	15%	0.0151	-	-	0.0468	-	0.0468	NA	N	Evaluated as VOCs
PAHs (ug/L)												
2-Methylnaphthalene	n	Groundwater - DP	67%	0.0833	670	0.000124	0.00000583	-	0.000130	Y	N	C/SLV <1
Acenaphthene	n	Groundwater - DP	56%	0.0135	670	0.0000201	0.0000107	-	0.0000308	Y	N	C/SLV <1
Anthracene	n	Groundwater - DP	11%	0.0126	8,300	0.00000152	0.00000454	-	0.00000606	Y	N	C/SLV <1
Benzo(a)pyrene	c	Groundwater - DP	11%	0.00895	0.0038	2.36	8.85	-	11.2	Y	Y	C/SLV >1
Dibenz(a,h)anthracene	c	Groundwater - DP	11%	0.00671	0.018	0.373	0.881	-	1.25	Y	Y	mm C/SLV >1
Fluoranthene	n	Groundwater - DP	11%	0.0311	130	0.000239	0.000372	-	0.000612	Y	N	C/SLV <1
Fluorene	n	Groundwater - DP	67%	0.0190	1,100	0.0000173	0.00000554	-	0.0000228	Y	N	C/SLV <1
Indeno(1,2,3-cd)pyrene	c	Groundwater - DP	11%	0.00797	0.0038	2.10	0.430	-	2.53	Y	Y	C/SLV >1
Pyrene	n	Groundwater - DP	33%	0.0261	830	0.0000314	0.000557	-	0.000589	Y	N	C/SLV <1
Sum non-carcinogenic C/RBC (HI)		**Groundwater**				**0.0194**						
Sum carcinogenic C/RBC (ELCR)		**Groundwater**				**2.6E-04**						

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
DP = direct push
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium)
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium)
max =maximum

Table M-19
Identification of COPCs in Groundwater at Sandblast Area AOPC - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(2 of 2)

Chemicals of Interest	note	Medium	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV				Bioaccumulative Potential? (Y/N) (Table J-6)	Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-13)	$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$ (Indoor Worker Table M-16)	Multimedia (1) $sum(C/SLV_{soil} + C/SLV_{gw} + C/SLV_{sg})$			

mg/L = milligrams per liter
n = non-carcinogen
NA = not analyzed
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
RBC = risk based concentration
RSL = regional screening level
sg = soil gas
SLV = screening level value
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separatel
Total metal results are reported.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4
Hierarchy developed to select Screening Level Values for Soil gas; 1. DEQ Soil Gas Vapor Intrusion Occupational RBCs, 2. Adjusted USEPA Industrial Air RSLs, and 3. Surrogates used as noted in Appendix J-4
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 200
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technolog
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May

Footnotes
(1) At the request of DEQ, groundwater COPCs are selected separately for each pathway. This table provides COPCs selected for the pathway of groundwater discharge to surface water and subsequent use of surface water (river water) for ingestions plus fish consumption (bioaccumulation
(2) SLVs is based on aesthetic considerations and are not included as a COPC.
(3) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a).

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum cPAH C/RBC (ELCR) = includes only individual carcinogenic polyaromatic hydrocarbons selected as a COPC
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Iron not included in summation, see footnote (3
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogen
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following condition
- [C/SLV] > 1.0 for an individual chemical in a given mediun
- [Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given mediur
- [Sum C/SLV] >1.0 for a single chemical in multiple medi

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a)

Table M-20
Summary of COPCs - Sandblast Area AOPC
Bradford Island -Upland Operable Unit
(1 of 1)

Media	Receptor	HI	ELCR	COPCs
Soil	Occupational Outdoor Worker	0.0866	2.2E-05	Arsenic Benzo(a)pyrene Benzofluoranthenes, Total Chromium Lead # Tetrachloroethene (PCE) 1,1-Dichloroethene # cis-1,2-Dichloroethene # Dibenz(a,h)anthracene trans-1,2-Dichloroethene # Trichloroethene (TCE) Vinyl Chloride
	Construction Worker	0.115	7.0E-06	Benzo(a)pyrene Tetrachloroethene (PCE) 1,1-Dichloroethene # cis-1,2-Dichloroethene # trans-1,2-Dichloroethene # Trichloroethene (TCE) Vinyl Chloride
	Excavation Worker	0.0718	8.1E-07	No COPCs
Soil Gas	Indoor Worker	0.856	2.1E-05	Tetrachloroethene (PCE) Trichloroethene (TCE) 1,1-Dichloroethene # cis-1,2-Dichloroethene # trans-1,2-Dichloroethene # Vinyl Chloride
Groundwater	**Construction/Excavation Worker**	1.01	3.6E-07	Vanadium #
	Potable Water User	3.17	**2.6E-04**	1,1-Dichloroethane Arsenic Benzo(a)pyrene Dibenz(a,h)anthracene Tetrachloroethene (PCE) Trichloroethene (TCE) Vinyl Chloride cis-1,2-Dichloroethene # Diesel Range Organics # Gasoline Range Organics # Vanadium # 1,1-Dichloroethene # trans-1,2-Dichloroethene #
	Discharge and Bioaccumulation	NE	NE	Arsenic Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Tetrachloroethene (PCE) Trichloroethene (TCE) Vinyl Chloride Dibenz(a,h)anthracene Vanadium # 1,1-Dichloroethene # cis-1,2-Dichloroethene # trans-1,2-Dichloroethene #

Bold = COPCs ELCR >1E-04
- = not evaluated
= non-carcinogenic COPC
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
COPC = chemicals of potential concern
ELCR = excess lifetime cancer risk
HI = hazard index

NE = Cumulative HI and ELCR not evaluated. These pathways were evaluated only to see if additional COPCs were identified for Sandblast.

PCBs = polychlorinated biphenyls

Shaded indicates COPC rationales not based on C/SLV>1 (i.e., multi-media, C/SLV>0.1, degradation product, or No SLV) or the SLV was not available for the specific exposure pathways.

Table M-21
Identification of COPCs in Soil at Pistol Range AOPC - Adult Outdoor Worker, Construction Worker, and Excavation Worker
Bradford Island -Upland Operable Unit
(1 of 1)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
					$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-23)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-24)	Multimedia (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} +C/SLV_{gw})		
INORGANICS (mg/kg)											
Lead	n	100%	365	800	0.456	0.833	-	1.29	0.456	Y	mm C/SLV >1
Nickel	c	100%	25.9	6,100	0.00425	0.0686	0.0821	0.0729	0.0864	N	carc C/SLV <1
Zinc	n	100%	148	310,000	0.000477	0.0135	0.0201	0.0140	0.0206	N	C/SLV <1
Sum non-carcinogenic C/RBC (HI)					**0.000477**						
Sum carcinogenic C/RBC (ELCR)					**4.2E-09**						

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
ft bgs = feet below surface
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/kg = milligrams per kilogram
mm = multimedia
n = noncarcinogen
NRWQC = national recommended water quality criteria
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table. Reporting limits for non-detected chemicals are evaluated separately
Outdoor Occupational, Construction, and Excavation Worker hierarchical SLV selection for soil: 1. minimum DEQ Soil RBCs (Ingest Occupational, Volatilize Outdoor, Ingest Construction, and Ingest Excavation), 2. USEPA Soil Industrial RSL, 3. Surrogate used as noted in Appendix J-4a
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4b.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2005
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-22
Identification of COPCs in Groundwater at Pistol Range AOPC - Construction and Excavation Workers
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (direct contact)	$\frac{C_{soil}}{SLV_{soil}}$ (Table M-21)	Multimedia (1) (direct contact) sum($C/SLV_{soil} + C/SLV_{gw}$)		
INORGANICS (mg/L)									
Copper	n	100%	0.0548	5,000	0.0000110	-	0.0000110	N	C/SLV <1
Lead	n	100%	0.0125	- (2)	-	0.456	0.456	N	C/SLV <1
Nickel	c	100%	0.0501	12,000	0.00000418	0.00425	0.00425	N	carc C/SLV <1
Zinc	n	100%	0.149	11	0.0135	0.000477	0.0140	N	C/SLV<1
Sum non-carcinogenic C/RBC (HI)					**0.0136**				
Sum carcinogenic C/RBC (ELCR)					**4.2E-12**				

- = not evaluated since chemical was not detected in this medium at detection frequency >5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
max =maximum
mg/L = milligrams per liter
mm = multimedia
n = non-carcinogen
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
Total metal results are reported.
Construction Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Construction,. 2. USEPA Soil Industrial RSL, 3. Surrogate used as noted in Appendix J-4a.
Screening Levels Values for Groundwater: 1. DEQ Groundwater in Excavation Construction/Excavation RBCs (Appendix J-4b), 2. USEPA Tapwater RSL, 3. DEQ MCL
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) At the Request of DEQ, COPC selection for groundwater is done separately for the on-site groundwater ingestion pathway and the groundwater discharge to surface water pathway. Therefore, this screening accounts only for on-site upland exposure to groundwater.
(2) The SLV for these chemcials are not available due to exceeding the solubility point in water.

COPC Selection

Table M-22
Identification of COPCs in Groundwater at Pistol Range AOPC - Construction and Excavation Workers
Bradford Island -Upland Operable Unit
(2 of 2)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (direct contact)	$\frac{C_{soil}}{SLV_{soil}}$ (Table M-21)	Multimedia (1) (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$		

C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:

[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-23
Identification of COPCs in Groundwater at Pistol Range AOPC - Potable Water User
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Table M-21)	Multimedia (1) (direct contact) sum(C/SLV_{soil} +C/SLV_{gw})		
INORGANICS (mg/L)									
Copper	n	100%	0.0548	1.5	0.0365	-	0.0365	N	C/SLV <1
Lead	n	100%	0.0125	0.015	0.833	0.456	1.29	Y	mm C/SLV >1
Nickel	c	100%	0.0501	0.73	0.0686	0.00425	0.0729	N	carc C/SLV <1
Zinc	n	100%	0.149	11	0.0135	0.000477	0.0140	N	C/SLV <1
Sum non-carcinogenic C/RBC (HI)					**0.0501**				
Sum carcinogenic C/RBC (ELCR)					**6.9E-08**				

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/L = milligrams per liter
mm = multimedia
n = non-carcinogen
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Total metal results are reported.
Outdoor Occupational, Construction, and Excavation Worker hierarchical SLV selection for soil: 1. minimum DEQ Soil RBCs (Ingest Occupational, Volatilize Outdoor, Ingest Construction, and Ingest Excavation), 2. USEPA Soil Industrial RSL, 3. Surrogate used as noted in Appendix J-4a.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4b.

Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes

Table M-23
Identification of COPCs in Groundwater at Pistol Range AOPC - Potable Water User
Bradford Island -Upland Operable Unit
(2 of 2)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
					$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Table M-21)	Multimedia (1) (direct contact) sum($C/SLV_{soil} + C/SLV_{gw}$)		

(1) At the Request of DEQ, COPC selection for groundwater is done separately for the on-site groundwater ingestion pathway and the groundwater discharge to surface water pathway. Therefore, this screening accounts only for on-site upland exposure to groundwater.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:

[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-24
Identification of COPCs in Groundwater at Pistol Range AOPC - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV			Bioaccumulative Potential? (Y/N)	Retain as a COPC, Y/N?	Rationale (2)
					$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation)	$\frac{C_{soil}}{SLV_{soil}}$ (Table M-21)	Multimedia (1) (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$			
INORGANICS (mg/L)										
Copper	n	100%	0.0548	1.3	0.0422	-	0.0422	N	N	C/SLV <1
Lead	n	100%	0.0125	-	-	0.456	0.456	Y	Y	No SLV
Nickel	c	100%	0.0501	0.61	0.0821	0.00425	0.0864	N	N	carc C/SLV <1
Zinc	n	100%	0.149	7.4	0.0201	0.000477	0.0206	Y	N	C/SLV <1

- = not evaluated since chemical was not detected in this medium at detection frequency >5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
max =maximum
mg/L = milligrams per liter
n = non-carcinogen
NRWQC = national recommended water quality criteria
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Total metal results are reported.
Outdoor Occupational, Construction, and Excavation Worker hierarchical SLV selection for soil: 1. minimum DEQ Soil RBCs (Ingest Occupational, Volatilize Outdoor, Ingest Construction, and Ingest Excavation), 2. USEPA Soil Industrial RSL, 3. Surrogate used as noted in Appendix J-4a.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) At the Request of DEQ, groundwater COPCs are selected separately for each pathway. This table provides COPCs selected for the pathway of groundwater discharge to surface water and subsequent use of surface water (river water) for ingestions plus fish consumption (bioaccumulation).

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV

Table M-24
Identification of COPCs in Groundwater at Pistol Range AOPC - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(2 of 2)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV			Bioaccumulative Potential? (Y/N)	Retain as a COPC, Y/N?	Rationale (2)
					$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation)	$\frac{C_{soil}}{SLV_{soil}}$ (Table M-21)	Multimedia (1) (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$			

Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:

[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-25
Identification of COPCs in Sediment at Pistol Range AOPC - Fish Consumer
Bradford Island -Upland Operable Unit
(1 of 1)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4e)	Site concentration(C) / SLV $\frac{C_{sed}}{SLV_{sed}}$	Bioaccumulative Potential? (Y/N) (Table J-6)	Retain as a COPC, Y/N?	Rationale
INORGANICS (mg/kg)								
Copper	n	100%	25.4	55.6 (1)	0.457	N	N	C/SLV<1
Lead	n	100%	33.0	14.5 (1)	2.28	Y	Y	C/SLV >1
Nickel	c	100%	15.4	21.2 (1)	0.726	N	N	carc C/SLV <1
Zinc	n	100%	174	106 (1)	1.64	Y	Y	C/SLV >1

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{soil}/SLV_{sed} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{soil}/SLV_{sed} only (i.e. single medium).
max =maximum
mg/kg = milligrams per kilogram
n = non-carcinogen
SLV = screening level value
sed = sediment
UCL = 95% upper confidence limit

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Hierarchy was developed to determine Screening Levels Values for Sediment; 1. Minimum of DEQ HH Bioaccumulative SLVs and 2. Surrogates as used in Appendix J-4e.
Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.

Footnotes
(1) Reference Sediment 95% Upper Prediction Limit (UPL) was used as the Selected HH SLV; see Appendix L-4, Sediment

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum non-carcinogenic C/SLV (ELCR) = summation of C/SLV of all non-carcinogens
Ratios for SLVs based on Reference Upper Prediction Limits (UPLs) are not included in sum totals. Since all selected HH SLVs are based on UPLs, sum totals are not shown.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5%, inorganic site concentration exceeds reference and one of the following
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-26
Summary of COPCs - Pistol Range AOPC
Bradford Island -Upland Operable Unit
(1 of 1)

Media	Receptor	HI	ELCR	COPCs
Soil	Adult Outdoor Worker, Construction Worker, Excavation Worker	0.000477	4.2E-09	Lead #
Groundwater	Construction/Excavation Worker	0.0136	4.2E-12	None
	Potable Water User	0.0501	6.9E-08	Lead #
	Discharge and Bioaccumulation	NE	NE	Lead #
Sediment	Wader	NE	NE	Lead # Zinc #

Bold = COPCs ELCR >1E-04
# = non-carcinogenic COPC
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
COPC = chemicals of potential concern
ELCR = excess lifetime cancer risk
HI = hazard index
NE = Cumulative HI and ELCR not evaluated. These pathways were evaluated only to see if additional COPCs were identified for Pistol Range.
PCBs = polychlorinated biphenyls
Shaded indicates COPC rationales not based on C/SLV>1 (multi-media, C/SLV>0.1, degradation product, or No SLV)

Table M-27
Identification of COPCs in Soil at Bulb Slope AOPC - Occupational Outdoor Worker
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV $\frac{C_{soil}}{SLV_{soil}}$	Retain as a COPC, Y/N?	Rationale
INORGANICS (mg/kg)							
Lead	n	100%	307	800	0.384	N	C/SLV <1
Mercury	n	100%	0.720	310	0.00232	N	C/SLV <1
PCBs (ug/kg)							
Aroclor 1260	c	67%	108	740	0.146	N	carc C/SLV <1
Total PCBs (Aroclors)	c	67%	104	740	0.140	N	carc C/SLV <1
TPH (mg/kg)							
Diesel Range Organics	n	100%	102	70,000	0.00146	N	C/SLV <1
Residual Range Organics	n	100%	232	40,000	0.00580	N	C/SLV <1
Sum non-carcinogenic C/RBC (HI)					**0.00958**		
Sum carcinogenic C/RBC (ELCR)					**1.4E-07**		

AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
ft bgs = feet below surface
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
max =maximum
mg/kg = milligrams per kilogram
n = non-carcinogen
PCBs = polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency

Notes

Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.

Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, 3. Surrogate used as noted in Appendix J-4a.

For inorganics, the higher of the 95% Upper Prediction Limit (UPL) and lowest HH SLV was selected as the HH SLV. For all other analytes the heirarchy described above was used.

Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Table M-27
Identification of COPCs in Soil at Bulb Slope AOPC - Occupational Outdoor Worker
Bradford Island -Upland Operable Unit
(2 of 2)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV $\frac{C_{soil}}{SLV_{soil}}$	Retain as a COPC, Y/N?	Rationale

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Total aroclors, rather than individual aroclors, was used in the summation.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:

[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-28
Identification of COPCs in Soil at All Four AOPCs Combined - Adult Outdoor Worker
Bradford Island -Upland Operable Unit
(1 of 4)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
						$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-32)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-33)	Multimedia (direct contact) sum(C/SLV_{soil} + C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} + C/SLV_{gw})		
INORGANICS (mg/kg)												
Antimony	n	60%	N	1.64	410	0.00400	0.149	0.398	0.153	0.402	N	C/SLV <1
Arsenic	c	94%	Y	8.20	5.4	1.52	217	457	218	459	Y	carc C/SLV >1
Cadmium	c	86%	N	1.67	500	0.00334	0.106	-	0.109	0.00334	N	carc C/SLV <1
Chromium	c	100%	Y	510	190 (1)	2.68	0.000145	-	2.68	2.68	Y	carc C/SLV >1
Lead - sieved <250um (2)	n	100%	N	418	800	0.523	-	-	0.523	0.523	N	C/SLV <1
Lead - sieved <2mm (3)	n	100%	N	303	800	0.379	-	-	0.379	0.379	N	C/SLV <1
Lead - unsieved (4)	n	100%	Y	396	800	0.495	0.853	-	1.35	0.495	Y	mm C/SLV >1
Mercury	n	71%	N	0.330	310	0.00106	0.00699	-	0.00806	0.00106	N	C/SLV <1
Nickel	c	100%	N	234	20,000	0.0117	0.160	0.192	0.172	0.204	N	carc C/SLV <1
Selenium	n	49%	N	0.431	5,100	0.0000845	0.0473	0.0501	0.0474	0.0502	N	C/SLV <1
Silver	n	83%	N	0.207	5,100	0.0000406	0.00153	-	0.00157	0.0000406	N	C/SLV <1
Zinc	n	100%	N	172	310,000	0.000555	0.188	0.280	0.189	0.280	N	C/SLV <1
BUTYLTINS (ug/kg)												
Dibutyltin	n	28%	N	14.7	180,000	0.0000817	0.00533	-	0.00541	0.0000817	N	C/SLV <1
Monobutyltin	n	34%	N	8.72	180,000	0.0000484	0.00185	-	0.00189	0.0000484	N	C/SLV <1
Tributyltin	n	28%	N	219	180,000	0.00122	0.00325	-	0.00446	0.00122	N	C/SLV <1
PESTICIDES (ug/kg)												
4,4'-DDE	c	13%	N	1.18	7,700	0.000153	-	-	0.000153	0.000153	N	carc C/SLV <1
4,4'-DDT	c	48%	N	19.3	7,700	0.00251	-	-	0.00251	0.00251	N	carc C/SLV <1
Chlordane (alpha)	c	9%	N	0.952	7,200	0.000132	-	-	0.000132	0.000132	N	carc C/SLV <1
Chlordane (gamma)	c	22%	N	11.8	7,200	0.00164	-	-	0.00164	0.00164	N	carc C/SLV <1
Chlordane (technical)	c	20%	N	902	7,200	0.125	-	-	0.125	0.125	N	carc C/SLV <1
Endosulfan I	n	8%	N	0.547	4,600,000	0.000000119	-	-	0.000000119	0.000000119	N	C/SLV <1
Endosulfan II	n	7%	N	0.756	4,600,000	0.000000164	-	-	0.000000164	0.000000164	N	C/SLV <1
Endosulfan Sulfate	n	12%	N	1.01	4,600,000	0.000000220	-	-	0.000000220	0.000000220	N	C/SLV <1
Endrin Aldehyde	n	8%	N	2.86	230,000	0.0000124	-	-	0.0000124	0.0000124	N	C/SLV <1
Endrin Ketone	n	7%	N	2.50	230,000	0.0000109	-	-	0.0000109	0.0000109	N	C/SLV <1
Endrin	n	7%	N	3.21	230,000	0.0000140	-	-	0.0000140	0.0000140	N	C/SLV <1
Heptachlor	c	10%	N	0.477	480	0.000994	-	-	0.000994	0.000994	N	carc C/SLV <1
PCBs (ug/kg)												
Aroclor 1254	c	18%	N	147	740	0.199	-	-	0.199	0.199	N	carc C/SLV <1
Aroclor 1260	c	82%	N	123	740	0.166	-	-	0.166	0.166	N	carc C/SLV <1
Total PCBs (Aroclors)	c	82%	N	325	740	0.439	-	-	0.439	0.439	N	carc C/SLV <1
HERBICIDES (ug/kg)												
2,4,5-T	n	8%	N	66.9	6,200,000	0.0000108	-	-	0.0000108	0.0000108	N	C/SLV <1
Dichloroprop	n	8%	N	172	4,900,000	0.0000351	-	-	0.0000351	0.0000351	N	C/SLV <1
MCPP	n	8%	N	10,200	620,000	0.0165	-	-	0.0165	0.0165	N	C/SLV <1
VOCs (ug/kg)												
1,1-Dichloroethene	n	0%	Y	-	27,000,000	-	0.00618	0.00636	0.00618	0.00636	Y	PCE is a COPC (5)
1,2,4-Trimethylbenzene	n	36%	N	2,860	980,000	0.00292	0.347	-	0.350	0.00292	N	C/SLV <1

Table M-28
Identification of COPCs in Soil at All Four AOPCs Combined - Adult Outdoor Worker
Bradford Island -Upland Operable Unit
(2 of 4)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
						$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-32)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-33)	Multimedia (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$	Multimedia (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$		
1,3,5-Trimethylbenzene	n	17%	N	417	1,600,000	0.000261	-	-	0.000261	0.000261	N	C/SLV <1
2-Butanone (MEK)	n	29%	N	10.4	200,000,000	0.0000000520	-	-	0.0000000520	0.0000000520	N	C/SLV <1
4-Isopropyltoluene	n	26%	N	14.7	53,000,000	0.000000277	-	-	0.000000277	0.000000277	N	C/SLV <1
4-Methyl-2-pentanone (MIBK)	n	14%	N	0.518	53,000,000	0.00000000977	-	-	0.00000000977	0.00000000977	N	C/SLV <1
Acetone	n	35%	N	90.8	630,000,000	0.000000144	0.000449	-	0.000449	0.000000144	N	C/SLV <1
Benzene	c	26%	N	0.412	34,000	0.0000121	-	-	0.0000121	0.0000121	N	carc C/SLV <1
Bromomethane	n	12%	N	1.01	700,000	0.00000144	-	-	0.00000144	0.00000144	N	C/SLV <1
Carbon Disulfide	n	36%	N	1.00	3,700,000	0.000000270	0.000988	-	0.000988	0.000000270	N	C/SLV <1
cis-1,2-Dichloroethene	n	3%	Y	120	10,000,000	0.0000120	0.919	-	0.919	0.0000120	Y	PCE is a COPC (5)
Dichlorodifluoromethane	n	6%	N	5.04	780,000	0.00000646	-	-	0.00000646	0.00000646	N	C/SLV <1
Dichloromethane (Methylene Chloride)	c	27%	N	40.3	310,000	0.000130	-	-	0.000130	0.000130	N	carc C/SLV <1
Ethylbenzene	c	17%	N	308	140,000	0.00220	-	-	0.00220	0.00220	N	carc C/SLV <1
m,p-Xylenes	n	18%	N	1,460	2,700,000	0.000541	-	-	0.000541	0.000541	N	C/SLV <1
Naphthalene	c	21%	N	960	23,000	0.0417	-	-	0.0417	0.0417	N	carc C/SLV <1
o-Xylene	n	7%	N	131	19,000,000	0.00000689	-	-	0.00000689	0.00000689	N	C/SLV <1
Tetrachloroethene (PCE)	c	27%	Y	44,400	5,100	8.71	18.7	2.52	27.4	11.2	Y	carc C/SLV >1
Toluene	n	51%	N	4,060	77,000,000	0.0000527	0.000169	0.000298	0.000221	0.000351	N	C/SLV <1
trans-1,2-Dichloroethene	n	2%	Y	2.28	9,200,000	0.000000248	0.00617	0.00485	0.00617	0.00485	Y	PCE is a COPC (5)
Trichloroethene (TCE)	c	11%	Y	833	3,900	0.214	29.2	0.456	NE	0.670	Y	PCE is a COPC (5)
Vinyl Chloride	c	0%	Y	-	3,900	-	16.5	16.5	16.5	16.5	Y	PCE is a COPC (5)
SVOCs (ug/kg)												
Benzoic Acid	n	33%	N	122	2,500,000,000	0.0000000488	-	-	0.0000000488	0.0000000488	N	C/SLV <1
Bis(2-ethylhexyl) Phthalate	c	80%	N	31,300	150,000	0.209	1.15	3.92	NE	NE	N	carc C/SLV <1
Butyl Benzyl Phthalate	c	13%	N	15.4	910,000	0.0000169	-	-	0.0000169	0.0000169	N	carc C/SLV <1
Carbazole	c	66%	N	312	1,000,000	0.000312	-	-	0.000312	0.000312	N	carc C/SLV <1
Dibenzofuran	n	54%	N	83.4	1,000,000	0.0000834	-	-	0.0000834	0.0000834	N	C/SLV <1
Diethyl Phthalate	n	9%	N	15.6	490,000,000	0.0000000318	-	-	0.0000000	0.0000000	N	C/SLV <1
Di-n-butyl Phthalate	n	27%	N	105	62,000,000	0.00000169	-	-	0.00000169	0.00000169	N	C/SLV <1
Di-n-octyl Phthalate	n	9%	N	19.4	150,000	0.000129	-	-	NE	NE	N	C/SLV <1
Pentachlorophenol	c	6%	N	24.8	13,000	0.00191	0.238	0.415	0.240	0.417	N	carc C/SLV <1
Phenol	n	7%	N	35.0	180,000,000	0.000000194	-	-	0.000000194	0.000000194	N	C/SLV <1
PAHs (ug/kg)												
2-Methylnaphthalene	n	39%	N	155	4,100,000	0.0000378	0.00117	0.000261	0.00120	0.000299	N	C/SLV <1
Acenaphthene	n	77%	N	564	61,000,000	0.00000925	0.0000718	0.000236	0.0000811	0.000245	N	C/SLV <1
Acenaphthylene	n	40%	N	26.2	23,000	0.00114	-	-	0.00114	0.00114	N	C/SLV <1
Anthracene	n	88%	N	1,250	170,000,000	0.00000735	-	-	0.00000735	0.00000735	N	C/SLV <1
Benzo(a)anthracene	c	90%	Y	5,260	2,700	1.95	-	-	1.95	1.95	Y	carc C/SLV >1
Benzo(a)pyrene	c	92%	Y	7,150	270	26.5	-	-	26.5	26.5	Y	carc C/SLV >1
Benzo(b)fluoranthene	c	96%	Y	9,750	2,700	3.61	-	-	3.61	3.61	Y	carc C/SLV >1
Benzo(g,h,i)perylene	c	86%	N	3,690	27,000	0.137	-	-	0.137	0.137	N	carc C/SLV <1
Benzo(k)fluoranthene	c	96%	N	11,000	27,000	0.407	-	-	0.407	0.407	N	carc C/SLV <1
Benzofluoranthenes, Total	c	93%	Y	17,600	2,700	6.52	-	-	6.52	6.52	Y	carc C/SLV >1

Table M-28
Identification of COPCs in Soil at All Four AOPCs Combined - Adult Outdoor Worker
Bradford Island -Upland Operable Unit
(3 of 4)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
						$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-32)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-33)	Multimedia (direct contact) sum(C/SLV_{soil} + C/SLV_{gw})	Multimedia (bioaccumulation) sum(C/SLV_{soil} + C/SLV_{gw})		
Chrysene	c	95%	N	5,790	270,000	0.0214	-	-	0.0214	0.0214	N	carc C/SLV <1
Dibenz(a,h)anthracene	c	74%	Y	1,040	270	3.85	-	-	3.85	3.85	Y	carc C/SLV >1
Fluoranthene	n	93%	N	11,900	29,000,000	0.000410	-	-	0.000410	0.000410	N	C/SLV <1
Fluorene	n	68%	N	191	41,000,000	0.00000466	-	-	0.00000466	0.00000466	N	C/SLV <1
Indeno(1,2,3-cd)pyrene	c	89%	Y	3,480	2,700	1.29	-	-	1.29	1.29	Y	carc C/SLV >1
Naphthalene	c	56%	N	161	23,000	0.00700	0.624	0.000130	0.631	0.00713	N	carc C/SLV <1
Phenanthrene	n	96%	N	3,870	170,000,000	0.0000228	0.0000441	0.0000584	0.0000669	0.0000812	N	C/SLV <1
Pyrene	n	96%	N	10,400	21,000,000	0.000495	-	-	0.000495	0.000495	N	C/SLV <1
TPH (mg/kg)												
Diesel Range Organics	n	88%	N	473	70,000	0.00676	3.09	-	NE	0.00676	N	C/SLV <1
Gasoline Range Organics	n	24%	N	782	22,000	0.0355	0.474	-	0.510	0.0355	N	C/SLV <1
Residual Range Organics	n	91%	N	2,030	40,000	0.0508	0.900	-	0.951	0.0508	N	C/SLV <1
Sum cPAH C/RBC (ELCR)						**3.7E-05**						
Sum non-carcinogenic C/RBC (HI)						**0.123**						
Sum carcinogenic C/RBC (ELCR)						**5.0E-05**						

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
ft bgs = feet below surface
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/kg = milligrams per kilogram
mm = multimedia
n = non-carcinogen
NE = multi-media was not evaluated since the chemical is already identified as a COPC.
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table except for degradation products of PCE (see footnote 5). Reporting limits for non-detected chemicals are evaluated separately.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.

Table M-28
Identification of COPCs in Soil at All Four AOPCs Combined - Adult Outdoor Worker
Bradford Island -Upland Operable Unit
(4 of 4)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
						$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User Table M-32)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-33)	Multimedia (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$	Multimedia (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$		

Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, and 4. Surrogates used as noted in Appendix J-4b.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.
For inorganics, the higher of the 95% Upper Prediction Limit (UPL) and lowest HH SLV was selected as the HH SLV. For all other analytes the heirarchy described above was used.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Due to the lack of speciation data, the chromium in soil were compared to the more conservative hexavalent chromium SLVs.
(2) Lead in sieved soil samples corresponding to 250 micrometers or less size fraction.
(3) Lead in sieved soil samples corresponding to 2 millimeters or less size fraction.
(4) Lead in unsieved soil samples.
(5) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a).

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum cPAH C/RBC (ELCR) = includes only individual carcinogenic polyaromatic hydrocarbons selected as a COPC. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation.
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation. Total aroclors, rather than individual aroclors, was used in the summation.
Ratios for SLVs based on Reference Upper Prediction Limits (UPLs) are not included in sum totals.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
- [C/SLV] > 1.0 for an individual chemical in a given medium
- [Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
- [Sum C/SLV] >1.0 for a single chemical in multiple media

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-29
Identification of COPCs in Soil at All Four AOPCs Combined - Construction Worker
Bradford Island -Upland Operable Unit
(1 of 4)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
						$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-31)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-33)	Multimedia (direct contact) sum($C/SLV_{soil} + C/SLV_{gw}$)	Multimedia (bioaccumulation) sum($C/SLV_{soil} + C/SLV_{gw}$)		
INORGANICS (mg/kg)												
Antimony	n	66%	N	1.71	410	0.00417	0.149	0.398	0.153	0.402	N	C/SLV <1
Arsenic	c	95%	N	7.85	13	0.604	0.00142	457	0.605	NE	N	carc C/SLV <1
Cadmium	c	85%	N	1.66	150	0.0111	0.0000335	-	0.0111	0.0111	N	carc C/SLV <1
Chromium	c	100%	N	501	920 (1)	0.545	-	-	0.545	0.545	N	carc C/SLV <1
Lead - sieved <250um (2)	n	100%	N	418	800	0.523	-	-	0.523	0.523	N	C/SLV <1
Lead - sieved <2mm (3)	n	100%	N	303	800	0.379	-	-	0.379	0.379	N	C/SLV <1
Lead - unsieved (4)	n	100%	N	396	800	0.495	-	-	0.495	0.495	N	C/SLV <1
Mercury	n	75%	N	0.315	93	0.00339	0.135	-	0.1383	0.00339	N	C/SLV <1
Nickel	c	100%	N	243	6,100	0.0398	0.00000975	0.192	0.0398	0.232	N	carc C/SLV <1
Selenium	n	50%	N	0.385	5,100	0.0000755	0.0473	0.0501	0.047	0.0502	N	C/SLV <1
Silver	n	85%	N	0.255	1,500	0.000170	0.000000276	-	0.000170	0.000170	N	C/SLV <1
Zinc	n	100%	N	175	310,000	0.000565	0.188	0.280	0.189	0.280	N	C/SLV <1
BUTYLTINS (ug/kg)												
Dibutyltin	n	24%	N	12.6	180,000	0.0000700	0.00533	-	0.00540	0.0000700	N	C/SLV <1
Monobutyltin	n	29%	N	7.36	180,000	0.0000409	0.00185	-	0.00189	0.0000409	N	C/SLV <1
Tributyltin	n	24%	N	186	180,000	0.00103	0.00325	-	0.00428	0.00103	N	C/SLV <1
PESTICIDES (ug/kg)												
4,4'-DDE	c	12%	N	1.09	58,000	0.0000188	-	-	0.0000188	0.0000188	N	carc C/SLV <1
4,4'-DDT	c	43%	N	17.3	58,000	0.000298	-	-	0.000298	0.000298	N	carc C/SLV <1
Chlordane (alpha)	c	9%	N	0.952	55,000	0.0000173	-	-	0.0000173	0.0000173	N	carc C/SLV <1
Chlordane (gamma)	c	22%	N	11.8	55,000	0.000215	-	-	0.000215	0.000215	N	carc C/SLV <1
Chlordane (technical)	c	27%	N	329	55,000	0.00598	-	-	0.00598	0.00598	N	carc C/SLV <1
Endosulfan I	n	7%	N	0.504	1,400,000	0.000000360	-	-	0.000000360	0.000000360	N	C/SLV <1
Endosulfan II	n	6%	N	0.706	1,400,000	0.000000504	-	-	0.000000504	0.000000504	N	C/SLV <1
Endosulfan Sulfate	n	10%	N	0.967	1,400,000	0.000000691	-	-	0.000000691	0.000000691	N	C/SLV <1
Endrin Aldehyde	n	7%	N	2.76	71,000	0.0000389	-	-	0.0000389	0.0000389	N	C/SLV <1
Endrin Ketone	n	6%	N	2.43	71,000	0.0000342	-	-	0.0000342	0.0000342	N	C/SLV <1
Endrin	n	6%	N	3.09	71,000	0.0000435	-	-	0.0000435	0.0000435	N	C/SLV <1
Heptachlor	c	9%	N	0.445	3,700	0.000120	-	-	0.000120	0.000120	N	carc C/SLV <1
PCBs (ug/kg)												
Aroclor 1254	c	20%	N	138	740	0.186	-	-	0.186	0.186	N	carc C/SLV <1
Aroclor 1260	c	82%	N	119	740	0.161	-	-	0.161	0.161	N	carc C/SLV <1
Total PCBs (Aroclors)	c	82%	N	254	740	0.343	-	-	0.343	0.343	N	carc C/SLV <1
HERBICIDES (ug/kg)												
2,4,5-T	n	6%	N	66.0	6,200,000	0.0000106	-	-	0.0000106	0.0000106	N	C/SLV <1
Dichloroprop	n	6%	N	171	4,900,000	0.0000349	-	-	0.0000349	0.0000349	N	C/SLV <1
MCPP	n	6%	N	10,000	620,000	0.0161	-	-	0.0161	0.0161	N	C/SLV <1
VOCs (ug/kg)												
1,1-Dichloroethene	n	0%	Y	-	12,000,000	-	-	0.00636	-	0.00636	Y	PCE is a COPC (5)
1,2,4-Trimethylbenzene	n	33%	N	2,490	2,000,000	0.00125	0.00306	-	0.00430	0.00125	N	C/SLV <1

Table M-29
Identification of COPCs in Soil at All Four AOPCs Combined - Construction Worker
Bradford Island -Upland Operable Unit
(2 of 4)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
						$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-31)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-33)	Multimedia (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$	Multimedia (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$		
1,3,5-Trimethylbenzene	n	14%	N	362	1,500,000	0.000241	-	-	0.000241	0.000241	N	C/SLV <1
2-Butanone (MEK)	n	25%	N	9.00	200,000,000	0.0000000450	-	-	0.0000000450	0.0000000450	N	C/SLV <1
4-Isopropyltoluene	n	24%	N	12.7	24,000,000	0.000000529	-	-	0.000000529	0.000000529	N	C/SLV <1
4-Methyl-2-pentanone (MIBK)	n	12%	N	0.507	53,000,000	0.00000000957	-	-	0.00000000957	0.00000000957	N	C/SLV <1
Acetone	n	30%	N	78.9	630,000,000	0.000000125	0.000449	-	0.000449	0.000000125	N	C/SLV <1
Benzene	c	25%	N	0.374	340,000	0.00000110	-	-	0.00000110	0.00000110	N	carc C/SLV <1
Bromomethane	n	11%	N	0.902	330,000	0.00000273	-	-	0.00000273	0.00000273	N	C/SLV <1
Carbon Disulfide	n	32%	N	0.858	3,700,000	0.000000232	0.000988	-	0.000988	0.000000232	N	C/SLV <1
cis-1,2-Dichloroethene	n	5.3%	Y	10.8	3,100,000	0.00000348	0.00276	-	0.00276	0.00000348	Y	PCE is a COPC (5)
Dichlorodifluoromethane	n	8%	N	4.08	780,000	0.00000523	-	-	0.00000523	0.00000523	N	C/SLV <1
Dichloromethane (Methylene Chloride)	c	24%	N	34.8	2,700,000	0.0000129	-	-	0.0000129	0.0000129	N	carc C/SLV <1
Ethylbenzene	c	16%	N	266	1,600,000	0.000166	-	-	0.000166	0.000166	N	carc C/SLV <1
m,p-Xylenes	n	17%	N	1,260	19,000,000	0.0000663	-	-	0.0000663	0.0000663	N	C/SLV <1
Naphthalene	c	18%	N	834	580,000	0.00144	-	-	0.00144	0.00144	N	carc C/SLV <1
o-Xylene	n	10%	N	508	19,000,000	0.0000267	-	-	0.0000267	0.0000267	N	C/SLV <1
Tetrachloroethene (PCE)	c	39%	Y	53,300	40,000	1.33	0.00725	2.52	1.34	3.9	Y	carc C/SLV >1
Toluene	n	54%	N	12,400	24,000,000	0.000517	0.00000185	0.000298	0.000519	0.000815	N	C/SLV <1
trans-1,2-Dichloroethene	n	1%	Y	2.28	4,500,000	0.000000507	0.0000485	0.00485	0.0000490	0.00485	Y	PCE is a COPC (5)
Trichloroethene (TCE)	c	13%	Y	710	43,000	0.0165	0.00713	0.456	0.0236	0.473	Y	PCE is a COPC (5)
Vinyl Chloride	c	0%	Y	-	30,000	-	0.000344	16.5	0.000344	16.5	Y	PCE is a COPC (5)
SVOCs (ug/kg)												
Benzoic Acid	n	30%	N	110	2,500,000,000	0.0000000440	-	-	0.0000000440	0.0000000440	N	C/SLV <1
Bis(2-ethylhexyl) Phthalate	c	82%	N	27,500	1,200,000	0.0229	0.979	3.92	1.00	NE	N	carc C/SLV <1
Butyl Benzyl Phthalate	c	14%	N	26.1	910,000	0.0000287	-	-	0.0000287	0.0000287	N	carc C/SLV <1
Carbazole	c	64%	N	322	1,000,000	0.000322	-	-	0.000322	0.000322	N	carc C/SLV <1
Dibenzofuran	n	53%	N	81.3	1,000,000	0.0000813	-	-	0.0000813	0.0000813	N	C/SLV <1
Diethyl Phthalate	n	9%	N	14.9	490,000,000	0.0000000304	-	-	0.0000000	0.0000000	N	C/SLV <1
Di-n-butyl Phthalate	n	23%	N	91.9	62,000,000	0.00000148	-	-	0.00000148	0.00000148	N	C/SLV <1
Di-n-octyl Phthalate	n	9%	N	20.0	1,200,000	0.0000167	-	-	NE	NE	N	C/SLV <1
Pentachlorophenol	c	5.1%	N	22.4	100,000	0.000224	0.00215	0.415	0.00238	0.415	N	carc C/SLV <1
Phenol	n	6%	N	4.98	180,000,000	0.0000000277	-	-	0.0000000277	0.0000000277	N	C/SLV <1
PAHs (ug/kg)												
2-Methylnaphthalene	n	39%	N	136	4,100,000	0.0000332	0.00117	0.000261	0.00120	0.000294	N	C/SLV <1
Acenaphthene	n	76%	N	584	19,000,000	0.0000307	0.0000718	0.000236	0.000103	0.000267	N	C/SLV <1
Acenaphthylene	n	40%	N	25.2	580,000	0.0000434	-	-	0.0000434	0.0000434	N	C/SLV <1
Anthracene	n	86%	N	1,320	93,000,000	0.0000142	-	-	0.0000142	0.0000142	N	C/SLV <1
Benzo(a)anthracene	c	90%	N	6,320	21,000	0.301	-	-	0.301	0.301	N	carc C/SLV <1
Benzo(a)pyrene	c	91%	Y	7,420	2,100	3.53	-	-	3.53	3.53	Y	carc C/SLV >1
Benzo(b)fluoranthene	c	96%	N	9,750	21,000	0.464	-	-	0.464	0.464	N	carc C/SLV <1
Benzo(g,h,i)perylene	c	86%	N	3,140	210,000	0.0150	-	-	0.0150	0.0150	N	carc C/SLV <1
Benzo(k)fluoranthene	c	96%	N	11,000	210,000	0.0524	-	-	0.0524	0.0524	N	carc C/SLV <1
Benzofluoranthenes, Total	c	90%	N	9,480	21,000	0.451	-	-	0.451	0.451	N	carc C/SLV <1

Table M-29
Identification of COPCs in Soil at All Four AOPCs Combined - Construction Worker
Bradford Island -Upland Operable Unit
(3 of 4)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
						$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-31)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-33)	Multimedia (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$	Multimedia (bioaccumulation) $sum(C/SLV_{soil} + C/SLV_{gw})$		
Chrysene	c	93%	N	6,340	2,100,000	0.00302	-	-	0.00302	0.00302	N	carc C/SLV <1
Dibenz(a,h)anthracene	c	71%	N	924	2,100	0.440	-	-	0.440	0.440	N	carc C/SLV <1
Fluoranthene	n	92%	N	12,800	8,900,000	0.00144	-	-	0.00144	0.00144	N	C/SLV <1
Fluorene	n	69%	N	211	12,000,000	0.0000176	-	-	0.0000176	0.0000176	N	C/SLV <1
Indeno(1,2,3-cd)pyrene	c	89%	N	3,680	21,000	0.175	-	-	0.175	0.175	N	carc C/SLV <1
Naphthalene	c	55%	N	219	580,000	0.000378	0.000175	0.000130	0.000552	0.000508	N	carc C/SLV <1
Phenanthrene	n	93%	N	4,060	93,000,000	0.0000437	0.0000441	0.0000584	0.0000877	0.000102	N	C/SLV <1
Pyrene	n	94%	N	14,100	6,700,000	0.00210	-	-	0.00210	0.00210	N	C/SLV <1
TPH (mg/kg)												
Diesel Range Organics	n	85%	N	1,190	23,000	0.0517	-	-	NE	0.0517	N	C/SLV <1
Gasoline Range Organics	n	23%	N	448	13,000	0.0345	0.00365	-	0.0381	0.0345	N	C/SLV <1
Residual Range Organics	n	89%	N	5,450	40,000	0.136	-	-	0.136	0.136	N	C/SLV <1
Sum cPAH C/RBC (ELCR)						**3.5E-06**						
Sum non-carcinogenic C/RBC (HI)						**0.254**						
Sum carcinogenic C/RBC (ELCR)						**7.3E-06**						

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
ft bgs = feet below surface
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/kg = milligrams per kilogram
n = non-carcinogen
NE = multi-media was not evaluated since the chemical is already identified as a COPC.
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table except for degradation products of PCE (see footnote 5). Reporting limits for non-detected chemicals are evaluated separately.

Table M-29
Identification of COPCs in Soil at All Four AOPCs Combined - Construction Worker
Bradford Island -Upland Operable Unit
(4 of 4)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
						$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-31)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-33)	Multimedia (direct contact) sum($C/SLV_{soil} + C/SLV_{gw}$)	Multimedia (bioaccumulation) sum($C/SLV_{soil} + C/SLV_{gw}$)		

Construction Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Construction,. 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Screening Levels Values for Groundwater: 1. DEQ Groundwater in Excavation Construction/Excavation RBCs (Appendix J-4b), 2. USEPA Tapwater RSL, and 3. Surrogates used as noted in Appendix J-4b.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.
For inorganics, the higher of the 95% Upper Prediction Limit (UPL) and lowest HH SLV was selected as the HH SLV. For all other analytes the heirarchy described above was used.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Due to the lack of speciation data, the chromium in soil were compared to the more conservative hexavalent chromium SLVs.
(2) Lead in sieved soil samples corresponding to 250 micrometers or less size fraction.
(3) Lead in sieved soil samples corresponding to 2 millimeters or less size fraction.
(4) Lead in unsieved soil samples.
(5) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a).

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum cPAH C/RBC (ELCR) = includes only individual carcinogenic polyaromatic hydrocarbons selected as a COPC. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation.
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation. Total aroclors, rather than individual aroclors, was used in the summation.
Ratios for SLVs based on Reference Upper Prediction Limits (UPLs) are not included in sum totals.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-30
Identification of COPCs in Soil at All Four AOPCs Combined - Excavation Worker
Bradford Island -Upland Operable Unit
(1 of 4)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
						$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-31)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-33)	Multimedia (direct contact) sum(C/SLV_{soil} + C/SLV_{gw})	Multimedia (direct contact) sum(C/SLV_{soil} + C/SLV_{gw})		
INORGANICS (mg/kg)												
Antimony	n	66%	N	1.71	410	0.00417	0.149	0.398	0.153	0.402	N	C/SLV <1
Arsenic	c	95%	N	7.85	370	0.0212	0.00142	457	0.0226	NE	N	carc C/SLV <1
Cadmium	c	85%	N	1.66	4,300	0.000386	0.0000335	-	0.000420	0.000386	N	carc C/SLV <1
Chromium	c	100%	N	501	26,000 (1)	0.0193	-	-	0.0193	0.0193	N	carc C/SLV <1
Lead - sieved <250um (2)	n	100%	N	418	800	0.523	-	-	0.523	0.523	N	C/SLV <1
Lead - sieved <2mm (3)	n	100%	N	303	800	0.379	-	-	0.379	0.379	N	C/SLV <1
Lead - unsieved (4)	n	100%	N	396	800	0.495	-	-	0.495	0.495	N	C/SLV <1
Mercury	n	75%	N	0.315	2,600	0.000121	0.135	-	0.1350	0.000121	N	C/SLV <1
Nickel	c	100%	N	243	20,000	0.0122	0.00000975	0.192	0.0122	0.204	N	carc C/SLV <1
Selenium	n	50%	N	0.385	5,100	0.0000755	0.0473	0.0501	0.047	0.0502	N	C/SLV <1
Silver	n	85%	N	0.255	43,000	0.00000593	0.000000276	-	0.00000621	0.00000593	N	C/SLV <1
Zinc	n	100%	N	175	310,000	0.000565	0.188	0.280	0.189	0.280	N	C/SLV <1
BUTYLTINS (ug/kg)												
Dibutyltin	n	24%	N	12.6	180,000	0.0000700	0.00533	-	0.00540	0.0000700	N	C/SLV <1
Monobutyltin	n	29%	N	7.36	180,000	0.0000409	0.00185	-	0.00189	0.0000409	N	C/SLV <1
Tributyltin	n	24%	N	186	180,000	0.00103	0.00325	-	0.00428	0.00103	N	C/SLV <1
PESTICIDES (ug/kg)												
4,4'-DDE	c	12%	N	1.09	1,600,000	0.000000681	-	-	0.000000681	0.000000681	N	carc C/SLV <1
4,4'-DDT	c	43%	N	17.3	1,600,000	0.0000108	-	-	0.0000108	0.0000108	N	carc C/SLV <1
Chlordane (alpha)	c	9%	N	0.952	1,500,000	0.000000635	-	-	0.000000635	0.000000635	N	carc C/SLV <1
Chlordane (gamma)	c	22%	N	11.8	1,500,000	0.00000787	-	-	0.00000787	0.00000787	N	carc C/SLV <1
Chlordane (technical)	c	27%	N	329	1,500,000	0.000219	-	-	0.000219	0.000219	N	carc C/SLV <1
Endosulfan I	n	7%	N	0.504	40,000,000	0.0000000126	-	-	0.0000000126	0.0000000126	N	C/SLV <1
Endosulfan II	n	6%	N	0.706	40,000,000	0.0000000177	-	-	0.0000000177	0.0000000177	N	C/SLV <1
Endosulfan Sulfate	n	10%	N	0.967	40,000,000	0.0000000242	-	-	0.0000000242	0.0000000242	N	C/SLV <1
Endrin Aldehyde	n	7%	N	2.76	2,000,000	0.00000138	-	-	0.00000138	0.00000138	N	C/SLV <1
Endrin Ketone	n	6%	N	2.43	2,000,000	0.00000122	-	-	0.00000122	0.00000122	N	C/SLV <1
Endrin	n	6%	N	3.09	2,000,000	0.00000155	-	-	0.00000155	0.00000155	N	C/SLV <1
Heptachlor	c	9%	N	0.445	100,000	0.00000445	-	-	0.00000445	0.00000445	N	carc C/SLV <1
PCBs (ug/kg)												
Aroclor 1254	c	20%	N	138	740	0.186	-	-	0.186	0.186	N	carc C/SLV <1
Aroclor 1260	c	82%	N	119	740	0.161	-	-	0.161	0.161	N	carc C/SLV <1
Total PCBs (Aroclors)	c	82%	N	254	740	0.343	-	-	0.343	0.343	N	carc C/SLV <1
HERBICIDES (ug/kg)												
2,4,5-T	n	6%	N	66.0	6,200,000	0.0000106	-	-	0.0000106	0.0000106	N	C/SLV <1
Dichloroprop	n	6%	N	171	4,900,000	0.0000349	-	-	0.0000349	0.0000349	N	C/SLV <1
MCPP	n	6%	N	10,000	620,000	0.0161	-	-	0.0161	0.0161	N	C/SLV <1
VOCs (ug/kg)												
1,2,4-Trimethylbenzene	n	33%	N	2,490	54,000,000	0.0000461	0.00306	-	0.00310	0.0000461	N	C/SLV <1
1,3,5-Trimethylbenzene	n	14%	N	362	42,000,000	0.00000862	-	-	0.00000862	0.00000862	N	C/SLV <1

Table M-30
Identification of COPCs in Soil at All Four AOPCs Combined - Excavation Worker
Bradford Island -Upland Operable Unit
(2 of 4)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
						$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-31)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-33)	Multimedia (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$	Multimedia (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$		
2-Butanone (MEK)	n	25%	N	9.00	200,000,000	0.0000000450	-	-	0.0000000450	0.0000000450	N	C/SLV <1
4-Isopropyltoluene	n	24%	N	12.7	24,000,000	0.000000529	-	-	0.000000529	0.000000529	N	C/SLV <1
4-Methyl-2-pentanone (MIBK)	n	12%	N	0.507	53,000,000	0.00000000957	-	-	0.00000000957	0.00000000957	N	C/SLV <1
Acetone	n	30%	N	78.9	630,000,000	0.000000125	0.000449	-	0.000449	0.000000125	N	C/SLV <1
Benzene	c	25%	N	0.374	9,500,000	0.0000000394	-	-	0.0000000394	0.0000000394	N	carc C/SLV <1
Bromomethane	n	11%	N	0.902	9,200,000	0.0000000980	-	-	0.0000000980	0.0000000980	N	C/SLV <1
Carbon Disulfide	n	32%	N	0.858	3,700,000	0.000000232	0.000988	-	0.000988	0.000000232	N	C/SLV <1
cis-1,2-Dichloroethene	n	5.3%	N	10.8	86,000,000	0.000000126	0.00276	-	0.00276	0.000000126	N	C/SLV <1
Dichlorodifluoromethane	n	8%	N	4.08	780,000	0.00000523	-	-	0.00000523	0.00000523	N	C/SLV <1
Dichloromethane (Methylene Chloride)	c	24%	N	34.8	75,000,000	0.000000464	-	-	0.000000464	0.000000464	N	carc C/SLV <1
Ethylbenzene	c	16%	N	266	44,000,000	0.00000605	-	-	0.00000605	0.00000605	N	carc C/SLV <1
m,p-Xylenes	n	17%	N	1,260	2,700,000	0.000467	-	-	0.000467	0.000467	N	C/SLV <1
Naphthalene	c	18%	N	834	16,000,000	0.0000521	-	-	0.0000521	0.0000521	N	carc C/SLV <1
o-Xylene	n	10%	N	508	19,000,000	0.0000267	-	-	0.0000267	0.0000267	N	C/SLV <1
Tetrachloroethene (PCE)	c	39%	N	53,300	1,100,000	0.0485	0.00725	2.52	0.0557	NE	N	carc C/SLV <1
Toluene	n	54%	N	12,400	45,000,000	0.000276	0.00000185	0.000298	0.000277	0.000574	N	C/SLV <1
Trichloroethene (TCE)	c	13%	N	710	1,200,000	0.000592	0.00713	0.456	0.00772	0.457	N	carc C/SLV <1
SVOCs (ug/kg)												
Benzoic Acid	n	30%	N	110	2,500,000,000	0.0000000440	-	-	0.0000000440	0.0000000440	N	C/SLV <1
Bis(2-ethylhexyl) Phthalate	c	82%	N	27,500	33,000,000	0.000833	0.979	3.92	0.980	NE	N	carc C/SLV <1
Butyl Benzyl Phthalate	c	14%	N	26.1	910,000	0.0000287	-	-	0.0000287	0.0000287	N	carc C/SLV <1
Carbazole	c	64%	N	322	1,000,000	0.000322	-	-	0.000322	0.000322	N	carc C/SLV <1
Dibenzofuran	n	53%	N	81.3	1,000,000	0.0000813	-	-	0.0000813	0.0000813	N	C/SLV <1
Diethyl Phthalate	n	9%	N	14.9	490,000,000	0.0000000304	-	-	0.0000000	0.0000000	N	C/SLV <1
Di-n-butyl Phthalate	n	23%	N	91.9	62,000,000	0.00000148	-	-	0.00000148	0.00000148	N	C/SLV <1
Di-n-octyl Phthalate	n	9%	N	20.0	33,000,000	0.000000606	-	-	NE	NE	N	C/SLV <1
Pentachlorophenol	c	5.1%	N	22.4	2,900,000	0.00000772	0.00215	0.415	0.00216	0.415	N	carc C/SLV <1
Phenol	n	6%	N	4.98	180,000,000	0.0000000277	-	-	0.0000000277	0.0000000277	N	C/SLV <1
PAHs (ug/kg)												
2-Methylnaphthalene	n	39%	N	136	4,100,000	0.0000332	0.00117	0.000261	0.00120	0.000294	N	C/SLV <1
Acenaphthene	n	76%	N	584	33,000,000	0.0000177	0.0000718	0.000236	0.0000895	0.000254	N	C/SLV <1
Acenaphthylene	n	40%	N	25.2	16,000,000	0.00000158	-	-	0.00000158	0.00000158	N	C/SLV <1
Anthracene	n	86%	N	1,320	170,000,000	0.00000776	-	-	0.00000776	0.00000776	N	C/SLV <1
Benzo(a)anthracene	c	90%	N	6,320	590,000	0.0107	-	-	0.0107	0.0107	N	carc C/SLV <1
Benzo(a)pyrene	c	91%	N	7,420	59,000	0.126	-	-	0.126	0.126	N	carc C/SLV <1
Benzo(b)fluoranthene	c	96%	N	9,750	590,000	0.0165	-	-	0.0165	0.0165	N	carc C/SLV <1
Benzo(g,h,i)perylene	c	86%	N	3,140	5,900,000	0.000532	-	-	0.000532	0.000532	N	carc C/SLV <1
Benzo(k)fluoranthene	c	96%	N	11,000	5,900,000	0.00186	-	-	0.00186	0.00186	N	carc C/SLV <1
Benzofluoranthenes, Total	c	90%	N	9,480	590,000	0.0161	-	-	0.0161	0.0161	N	carc C/SLV <1
Chrysene	c	93%	N	6,340	59,000,000	0.000107	-	-	0.000107	0.000107	N	carc C/SLV <1
Dibenz(a,h)anthracene	c	71%	N	924	59,000	0.0157	-	-	0.0157	0.0157	N	carc C/SLV <1
Fluoranthene	n	92%	N	12,800	22,000,000	0.000582	-	-	0.000582	0.000582	N	C/SLV <1
Fluorene	n	69%	N	211	22,000,000	0.00000959	-	-	0.00000959	0.00000959	N	C/SLV <1

Table M-30
Identification of COPCs in Soil at All Four AOPCs Combined - Excavation Worker
Bradford Island -Upland Operable Unit
(3 of 4)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
						$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-31)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-33)	Multimedia (direct contact) sum(C/SLV_{soil} + C/SLV_{gw})	Multimedia (direct contact) sum(C/SLV_{soil} + C/SLV_{gw})		
Indeno(1,2,3-cd)pyrene	c	89%	N	3,680	590,000	0.00624	-	-	0.00624	0.00624	N	carc C/SLV <1
Naphthalene	c	55%	N	219	16,000,000	0.0000137	0.000175	0.000130	0.000188	0.000144	N	carc C/SLV <1
Phenanthrene	n	93%	N	4,060	170,000,000	0.0000239	0.0000441	0.0000584	0.0000680	0.0000823	N	C/SLV <1
Pyrene	n	94%	N	14,100	17,000,000	0.000829	-	-	0.000829	0.000829	N	C/SLV <1
TPH (mg/kg)												
Diesel Range Organics	n	85%	N	1,190	70,000	0.0170	-	-	NE	0.0170	N	C/SLV <1
Gasoline Range Organics	n	23%	N	448	22,000	0.0204	0.00365	-	0.0240	0.0204	N	C/SLV <1
Residual Range Organics	n	89%	N	5,450	40,000	0.136	-	-	0.136	0.136	N	C/SLV <1
Sum non-carcinogenic C/RBC (HI)						**0.198**						
Sum carcinogenic C/RBC (ELCR)						**6.2E-07**						

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
ft bgs = feet below surface
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{soil}/SLV_{soil} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/kg = milligrams per kilogram
n = non-carcinogen
NE = multi-media was not evaluated since the chemical is already identified as a COPC.
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Notes
Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Excavation Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Excavation), 2. USEPA Soil Industrial RSL, 3. Outdoor Worker SLV, and 4. Surrogate used as noted in Appendix J-4a.
Screening Levels Values for Groundwater: 1. DEQ Groundwater in Excavation Construction/Excavation RBCs (Appendix J-4b), 2. USEPA Tapwater RSL, and 3. Surrogates used as noted in Appendix J-4b.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.
For inorganics, the higher of the 95% Upper Prediction Limit (UPL) and lowest HH SLV was selected as the HH SLV. For all other analytes the heirarchy described above was used.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf

Table M-30
Identification of COPCs in Soil at All Four AOPCs Combined - Excavation Worker
Bradford Island -Upland Operable Unit
(4 of 4)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4a)	Site concentration(C) / SLV					Retain as a COPC, Y/N?	Rationale
						$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Direct Contact Table M-31)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Table M-33)	Multimedia (direct contact) sum($C/SLV_{soil} + C/SLV_{gw}$)	Multimedia (direct contact) sum($C/SLV_{soil} + C/SLV_{gw}$)		

United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Due to the lack of speciation data, the chromium in soil were compared to the more conservative hexavalent chromium SLVs.
(2) Lead in sieved soil samples corresponding to 250 micrometers or less size fraction.
(3) Lead in sieved soil samples corresponding to 2 millimeters or less size fraction.
(4) Lead in unsieved soil samples.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Individual benzofluoranthenes, rather than total benzofluoranthenes, was used in the summation. Total aroclors, rather than individual aroclors, was used in the summation.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-31
Identification of COPCs in Groundwater at All Four AOPCs Combined - Construction and Excavation Workers
Bradford Island -Upland Operable Unit
(1 of 3)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV: $\frac{C_{gw}}{SLV_{gw}}$ (direct contact)	Site concentration(C) / SLV: $\frac{C_{soil}}{SLV_{soil}}$ (Construction Worker Table M-29)	Site concentration(C) / SLV: Multimedia (1) (direct contact) sum($C/SLV_{soil} + C/SLV_{gw}$)	Retain as a COPC, Y/N?	Rationale
INORGANICS (mg/L)										
Antimony	n	42%	Y	0.00223	0.015	0.149	0.00417	0.153	Y	C/SLV >0.1
Arsenic	c	86%	N	0.00823	5.8	0.00142	0.604	0.605	N	carc C/SLV <1
Barium	n	100%	N	0.165	25,000	0.00000660	-	0.00000660	N	C/SLV <0.1
Beryllium	c	37%	N	0.000351	250	0.00000140	-	0.00000140	N	carc C/SLV <1
Cadmium	c	32%	N	0.00191	57	0.0000335	0.0111	0.0111	N	carc C/SLV <1
Chromium	c	37%	N	0.00800	- (2)	-	0.545	0.545	N	C/SLV <1 (2)
Copper	n	58%	N	0.0438	5,000	0.00000876	-	0.00000876	N	C/SLV <0.1
Iron	n	90%	Y	17.0	26	0.654	-	0.654	Y	C/SLV >0.1
Lead	n	60%	N	0.0128	- (2)	-	0.495	0.495	N	C/SLV <1 (2)
Manganese	n	98%	N	1.91	3,000	0.000637	-	0.000637	N	C/SLV <0.1
Mercury	n	17%	Y	0.0000769	0.00057	0.135	0.00339	0.138	Y	C/SLV >0.1
Nickel	c	58%	N	0.117	12,000	0.00000975	0.0398	0.0398	N	carc C/SLV <1
Selenium	n	37%	N	0.00852	0.18	0.0473	0.0000755	0.0474	N	C/SLV <0.1
Silver	n	26%	N	0.000276	1,000	0.000000276	0.000170	0.000170	N	C/SLV <0.1
Thallium	n	47%	Y	0.000238	0.002	0.119	-	0.119	Y	C/SLV >0.1
Vanadium	n	90%	Y	0.00254	0.0026	0.977	-	0.977	Y	C/SLV >0.1
Zinc	n	79%	Y	2.07	11	0.188	0.000565	0.189	Y	C/SLV >0.1
BUTYLTINS (ug/L)										
Dibutyltin	n	28%	N	0.0586	11	0.00533	0.0000700	0.00540	N	C/SLV <0.1
Monobutyltin	n	15%	N	0.0203	11	0.00185	0.0000409	0.00189	N	C/SLV <0.1
Tributyltin	n	75%	N	0.0357	11	0.00325	0.00103	0.00428	N	C/SLV <0.1
HERBICIDES (ug/L)										
4-Nitrophenol	n	13%	N	0.840	11,000	0.0000764	-	0.0000764	N	C/SLV <0.1
Pentachlorophenol	c	13%	N	0.112	52	0.00215	-	0.00215	N	carc C/SLV <1
VOCs (ug/L)										
1,1,1-Trichloroethane (TCA)	n	7%	N	0.821	1,100,000	0.000000746	-	0.000000746	N	C/SLV <0.1
1,1-Dichloroethane	c	7%	N	2.00	10,000	0.000200	-	0.000200	N	carc C/SLV <1
1,2,4-Trimethylbenzene	n	7%	N	5.20	1,700	0.00306	0.00125	0.00430	N	C/SLV <0.1
Acetone	n	15%	N	9.88	22,000	0.000449	0.000000125	0.000449	N	C/SLV <0.1
Carbon Disulfide	n	22%	N	0.988	1,000	0.000988	0.000000232	0.000988	N	C/SLV <0.1
Chloroform	c	12%	N	0.392	720	0.000544	-	0.000544	N	carc C/SLV <1
cis-1,2-Dichloroethene	n	38%	N	331	120,000	0.00276	0.00000348	0.00276	N	C/SLV <0.1
Isopropylbenzene	n	7%	N	3.38	680	0.00497	-	0.00497	N	C/SLV <0.1
n-Propylbenzene	n	7%	N	1.30	1,300	0.00100	-	0.00100	N	C/SLV <0.1

Table M-31
Identification of COPCs in Groundwater at All Four AOPCs Combined - Construction and Excavation Workers
Bradford Island -Upland Operable Unit
(2 of 3)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV: $\frac{C_{gw}}{SLV_{gw}}$ (direct contact)	Site concentration(C) / SLV: $\frac{C_{soil}}{SLV_{soil}}$ (Construction Worker Table M-29)	Site concentration(C) / SLV: Multimedia (1) (direct contact) $sum(C/SLV_{soil} + C/SLV_{gw})$	Retain as a COPC, Y/N?	Rationale
Tetrachloroethene (PCE)	c	38%	N	1.74	240	0.00725	1.33	NE	N	carc C/SLV <1
Toluene	n	19%	N	0.388	210,000	0.00000185	0.000517	0.000519	N	C/SLV <0.1
trans-1,2-Dichloroethene	n	7%	N	0.679	14,000	0.0000485	0.000000507	0.0000490	N	C/SLV <0.1
Trichloroethene (TCE)	c	36%	N	1.14	160	0.00713	0.0165	0.0236	N	carc C/SLV <1
Vinyl Chloride	c	26%	N	0.413	1,200	0.000344	-	0.000344	N	carc C/SLV <1
SVOCs (ug/L)										
Bis(2-ethylhexyl) Phthalate	c	26%	N	4.70	4.8	0.979	0.0229	1.00	N	carc C/SLV <1
Diethyl Phthalate	n	13%	N	0.873	29,000	0.0000301	0.0000000304	0.0000301	N	C/SLV <0.1
Di-n-octyl Phthalate	n	13%	Y	4.61	4.8	0.960	0.0000167	0.960	Y	C/SLV >0.1
Isophorone	c	9%	N	0.177	71	0.00249	-	0.00249	N	carc C/SLV <1
PAHs (ug/L)										
2-Methylnaphthalene	n	17%	N	0.175	150	0.00117	0.0000332	0.00120	N	C/SLV <0.1
Acenaphthene	n	9%	N	0.158	2,200	0.0000718	0.0000307	0.000103	N	C/SLV <0.1
Naphthalene	c	13%	N	0.0873	500	0.000175	0.000378	0.000552	N	carc C/SLV <1
Phenanthrene	n	8%	N	0.485	11,000	0.0000441	0.0000437	0.0000877	N	C/SLV <0.1
TPH (mg/L)										
Diesel Range Organics	n	52%	N	0.278	- (2)	-	0.0517	0.0517	N	C/SLV <1 (2)
Gasoline Range Organics	n	26%	N	0.0474	13	0.00365	0.0345	0.0381	N	C/SLV <0.1
Residual Range Organics	n	36%	N	0.261	- (2)	-	0.136	0.136	N	C/SLV <1 (2)
Sum non-carcinogenic C/RBC (HI)						**3.26**				
Sum carcinogenic C/RBC (ELCR)						**1.0E-06**				

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
max =maximum
mg/L = milligrams per liter
n = non-carcinogen
NE = multi-media was not evaluated since the chemical is already identified as a COPC.
PAHs = polyaromatic hydrocarbons

Table M-31
Identification of COPCs in Groundwater at All Four AOPCs Combined - Construction and Excavation Workers
Bradford Island -Upland Operable Unit
(3 of 3)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (direct contact)	$\frac{C_{soil}}{SLV_{soil}}$ (Construction Worker Table M-29)	Multimedia (1) (direct contact) sum($C/SLV_{soil} + C/SLV_{gw}$)		

RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
Total metal results are reported.
Construction Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Construction,. 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Screening Levels Values for Groundwater: 1. DEQ Groundwater in Excavation Construction/Excavation RBCs (Appendix J-4b), 2. USEPA Tapwater RSL, and 3. Surrogates used as noted in Appendix J-4b.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) At the request of DEQ, COPC selection for groundwater is done separately for the on-site groundwater ingestion pathway and the groundwater discharge to surface water pathway. Therefore, this screening accounts only for on-site upland exposure to groundwater.
(2) The SLV for these chemcials are not available due to exceeding the solubility point in water.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:

[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-32
Identification of COPCs in Groundwater at All Four AOPCs Combined - Potable Water User
Bradford Island -Upland Operable Unit
(1 of 3)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV				Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-28)	$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$ (Indoor Worker Table M-16)	Multimedia (1) sum(C/SLV_{soil} + C/SLV_{gw} + C/SLV_{sg})		
INORGANICS (mg/L)											
Antimony	n	42%	Y	0.00223	0.015	0.149	0.00400	-	0.153	Y	C/SLV >0.1
Arsenic	c	86%	Y	0.00823	0.000038	217	1.52	-	218	Y	carc C/SLV >1
Barium	n	100%	N	0.165	7.3	0.0226	-	-	0.0226	N	C/SLV <0.1
Beryllium	c	37%	N	0.000351	0.073	0.00481	-	-	0.00481	N	carc C/SLV <1
Cadmium	c	32%	N	0.00191	0.018	0.106	0.00334	-	0.109	N	carc C/SLV <1
Chromium	c	37%	N	0.00800	55 (2)	0.000145	2.68	-	NE	N	carc C/SLV <1
Copper	n	58%	N	0.0438	1.5	0.0292	-	-	0.0292	N	C/SLV <0.1
Iron	n	90%	Y	17.0	26	0.654	-	-	0.654	Y	C/SLV >0.1
Lead	n	60%	Y	0.0128	0.015	0.853	0.495 (3)	-	1.35	Y	C/SLV >0.1
Manganese	n	98%	Y	1.91	0.88	2.17	-	-	2.17	Y	C/SLV >0.1
Mercury	n	17%	N	0.0000769	0.011	0.00699	0.00106	-	0.00806	N	C/SLV <0.1
Nickel	c	58%	N	0.117	0.73	0.160	0.0117	-	0.172	N	carc C/SLV <1
Selenium	n	37%	N	0.00852	0.18	0.0473	0.0000845	-	0.0474	N	C/SLV <0.1
Silver	n	26%	N	0.000276	0.18	0.00153	0.0000406	-	0.00157	N	C/SLV <0.1
Thallium	n	47%	Y	0.000238	0.002	0.119	-	-	0.119	Y	C/SLV >0.1
Vanadium	n	90%	Y	0.00254	0.0026	0.977	-	-	0.977	Y	C/SLV >0.1
Zinc	n	79%	Y	2.07	11	0.188	0.000555	-	0.189	Y	C/SLV >0.1
BUTYLTINS (ug/L)											
Dibutyltin	n	28%	N	0.0586	11	0.00533	0.0000817	-	0.00541	N	C/SLV <0.1
Monobutyltin	n	15%	N	0.0203	11	0.00185	0.0000484	-	0.00189	N	C/SLV <0.1
Tributyltin	n	75%	N	0.0357	11	0.00325	0.00122	-	0.00446	N	C/SLV <0.1
HERBICIDES (ug/L)											
4-Nitrophenol	n	13%	N	0.840	11,000	0.0000764	-	-	0.0000764	N	C/SLV <0.1
Pentachlorophenol	c	13%	N	0.112	0.47	0.238	0.00191	-	0.240	N	carc C/SLV <1
VOCs (ug/L)											
1,1,1-Trichloroethane (TCA)	n	7%	N	0.821	9,100	0.0000902	-	0.00000445	0.0000947	N	C/SLV <0.1
1,1-Dichloroethane	c	7%	Y	2.00	2.3	0.870	-	-	0.870	N	carc C/SLV <1
1,1-Dichloroethene	n	4%	Y	2.10	340	0.00618	-	-	0.00618	Y	PCE is a COPC (4)
1,2,4-Trimethylbenzene	n	7%	Y	5.20	15	0.347	0.00292	0.597	0.946	Y	C/SLV >0.1
Acetone	n	15%	N	9.88	22,000	0.000449	0.000000144	0.000000693	0.000450	N	C/SLV <0.1
Carbon Disulfide	n	22%	N	0.988	1,000	0.000988	0.000000270	0.0000135	0.00100	N	C/SLV <0.1
Chloroform	c	12%	Y	0.392	0.19	2.06	-	0.00142	2.06	Y	carc C/SLV >1
cis-1,2-Dichloroethene	n	38%	Y	331	360	0.919	0.0000120	0.00127	0.921	Y	C/SLV >0.1
Isopropylbenzene	n	7%	N	3.38	680	0.00497	-	0.000375	0.00535	N	C/SLV <0.1
n-Propylbenzene	n	7%	N	1.30	1,300	0.00100	-	0.000523	0.00152	N	C/SLV <0.1
Tetrachloroethene (PCE)	c	38%	Y	1.74	0.093	18.7	8.71	16.2	43.6	Y	carc C/SLV >1

Table M-32
Identification of COPCs in Groundwater at All Four AOPCs Combined - Potable Water User
Bradford Island -Upland Operable Unit
(2 of 3)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV				Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-28)	$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$ (Indoor Worker Table M-16)	Multimedia (1) sum(C/SLV_{soil} + C/SLV_{gw} + C/SLV_{sg})		
Toluene	n	19%	N	0.388	2,300	0.000169	0.0000527	0.00216	0.00238	N	C/SLV <0.1
trans-1,2-Dichloroethene	n	7%	Y	0.679	110	0.00617	0.000000248	0.0000154	0.00619	Y	PCE is a COPC (4)
Trichloroethene (TCE)	c	36%	Y	1.14	0.039	29.2	0.214	4.36	33.8	Y	carc C/SLV >1
Vinyl Chloride	c	26%	Y	0.413	0.025	16.5	-	-	16.5	Y	carc C/SLV >1
SVOCs (ug/L)											
Bis(2-ethylhexyl) Phthalate	c	26%	Y	4.70	4.1	1.15	0.209	-	1.36	Y	carc C/SLV >1
Diethyl Phthalate	n	13%	N	0.873	29,000	0.0000301	0.0000000318	-	0.0000301	N	C/SLV <0.1
Di-n-octyl Phthalate	n	13%	Y	4.61	4.1	1.12	0.000129	-	1.12	Y	C/SLV >0.1
Isophorone	c	9%	N	0.177	71	0.00249	-	-	0.00249	N	carc C/SLV <1
PAHs (ug/L)											
2-Methylnaphthalene	n	17%	N	0.175	150	0.00117	0.0000378	-	0.00120	N	C/SLV <0.1
Acenaphthene	n	9%	N	0.158	2,200	0.0000718	0.00000925	-	0.0000811	N	C/SLV <0.1
Naphthalene	c	13%	N	0.0873	0.14	0.624	0.00700	-	0.631	N	carc C/SLV <1
Phenanthrene	n	8%	N	0.485	11,000	0.0000441	0.0000228	-	0.0000669	N	C/SLV <0.1
TPH (mg/L)											
Diesel Range Organics	n	52%	Y	0.278	0.09	3.09	0.00676	-	3.10	Y	C/SLV >0.1
Gasoline Range Organics	n	26%	Y	0.0474	0.1	0.474	0.0355	-	0.510	Y	C/SLV >0.1
Residual Range Organics	n	36%	Y	0.261	0.29	0.900	0.0508	-	0.951	Y	C/SLV >0.1
Sum non-carcinogenic C/RBC (HI)						**11.2**					
Sum carcinogenic C/RBC (ELCR)						**2.9E-04**					

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
max =maximum
MCL = maximum contaminant level
mg/L = milligrams per liter
n = non-carcinogen
NE = multi-media was not evaluated since the chemical is already identified as a COPC.
PAHs = polyaromatic hydrocarbons
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon

Table M-32
Identification of COPCs in Groundwater at All Four AOPCs Combined - Potable Water User
Bradford Island -Upland Operable Unit
(3 of 3)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV				Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-28)	$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$ (Indoor Worker Table M-16)	Multimedia (1) sum(C/SLV_{soil} + C/SLV_{gw} + C/SLV_{sg})		

ug/L = micrograms per liter
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals

Notes
Only detected chemicals with a detection frequency greater than 5% are shown in this table except for degradation products of PCE (see footnote 4). Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
Total metal results are reported.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, 3. Surrogate used as noted in Appendix J-4a.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4b.
Hierarchy developed to select Screening Level Values for Soil gas; 1. DEQ Soil Gas Vapor Intrusion Occupational RBCs, 2. Adjusted USEPA Industrial Air RSLs, and 3. Surrogates used as noted in Appendix J-4d.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) At the request of DEQ, COPC selection for groundwater is done separately for the on-site groundwater ingestion pathway and the groundwater discharge to surface water pathway. Therefore, this screening accounts only for on-site upland exposure to groundwater.
(2) Chromium in water is likely to be Cr III because of aerobic conditions.
(3) Lead- unseived soil C/SLV was used.
(4) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a).

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-33
Identification of COPCs in Groundwater at All Four AOPCs Combined - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(1 of 3)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV				Bioaccumulative Potential? (Y/N) (Table J-6)	Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-28)	$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$ (Indoor Worker Table M-16)	Multimedia (1) $sum(C/SLV_{soil} + C/SLV_{gw} + C/SLV_{sg})$			
INORGANICS (mg/L)												
Antimony	n	42%	Y	0.00223	0.0056	0.398	0.00400	-	0.402	N	Y	C/SLV >0.1
Arsenic	c	86%	Y	0.00823	0.000018	457	1.52	-	459	Y	Y	carc C/SLV >1
Barium	n	100%	Y	0.165	1	0.165	-	-	0.165	N	Y	C/SLV >0.1
Beryllium	c	37%	N	0.000351	-	-	-	-	-	N	N	Not Bioaccumulative
Cadmium	c	32%	N	0.00191	-	-	0.00334	-	0.00334	N	N	Not Bioaccumulative
Chromium	c	37%	N	0.00800	- (2)	-	2.68	-	2.68	N	N	Not Bioaccumulative
Copper	n	58%	N	0.0438	1.3	0.0337	-	-	0.0337	N	N	C/SLV <0.1
Iron	n	90%	N	17.0	0.3	56.7	-	-	-	N	N	See footnote (3)
Lead	n	60%	Y	0.0128	-	-	0.495 (4)	-	0.495	Y	Y	No SLV
Manganese	n	98%	N	1.91	0.05	38.2	-	-	38.2	Y	N	See footnote (3)
Mercury	n	17%	Y	0.0000769	-	-	0.00106	-	0.00106	Y	Y	No SLV
Nickel	c	58%	N	0.117	0.61	0.192	0.0117	-	0.204	N	N	carc C/SLV <1
Selenium	n	37%	N	0.00852	0.17	0.0501	0.0000845	-	0.0502	N	N	C/SLV <0.1
Silver	n	26%	N	0.000276	-	-	0.0000406	-	0.0000406	N	N	Not Bioaccumulative
Thallium	n	47%	Y	0.000238	0.00024	0.992	-	-	0.992	Y	Y	C/SLV >0.1
Vanadium	n	90%	Y	0.00254	-	-	-	-	-	NA	Y	No SLV
Zinc	n	79%	Y	2.07	7.4	0.280	0.000555	-	0.280	Y	Y	C/SLV >0.1
BUTYLTINS (ug/L)												
Dibutyltin	n	28%	N	0.0586	-	-	0.0000817	-	0.0000817	N	N	Not Bioaccumulative
Monobutyltin	n	15%	N	0.0203	-	-	0.0000484	-	0.0000484	N	N	Not Bioaccumulative
Tributyltin	n	75%	Y	0.0357	-	-	0.00122	-	0.00122	Y	Y	No SLV
HERBICIDES (ug/L)												
4-Nitrophenol	n	13%	N	0.840	10,000	0.000084	-	-	0.0000840	N	N	C/SLV <0.1
Pentachlorophenol	c	13%	N	0.112	0.27	0.415	0.00191	-	0.417	Y	N	carc C/SLV <1
VOCs (ug/L)												
1,1,1-Trichloroethane (TCA)	n	7%	N	0.821	-	-	-	0.00000445	0.00000445	N	N	Not Bioaccumulative
1,1-Dichloroethane	c	7%	N	2.00	-	-	-	-	-	N	N	Not Bioaccumulative
1,1-Dichloroethene	n	4%	Y	2.10	330	0.00636	-	-	0.00636	N	Y	PCE is COPC (5)
1,2,4-Trimethylbenzene	n	7%	Y	5.20	-	-	0.00292	0.597	0.600	Y	Y	No SLV
Acetone	n	15%	N	9.88	-	-	0.000000144	0.000000693	0.000000837	N	N	Not Bioaccumulative
Carbon Disulfide	n	22%	N	0.988	-	-	0.000000270	0.0000135	0.0000138	N	N	Not Bioaccumulative
Chloroform	c	12%	N	0.392	5.7	0.0688	-	0.00142	0.0702	N	N	carc C/SLV <1
cis-1,2-Dichloroethene	n	38%	Y	331	-	-	0.0000120	0.00127	0.00128	N	Y	PCE is COPC (5)
Isopropylbenzene	n	7%	Y	3.38	-	-	-	0.000375	0.000375	Y	Y	No SLV
n-Propylbenzene	n	7%	Y	1.30	-	-	-	0.000523	0.000523	Y	Y	No SLV
Tetrachloroethene (PCE)	c	38%	Y	1.74	0.69	2.52	8.71	16.2	27.4	N	Y	carc C/SLV >1
Toluene	n	19%	N	0.388	1,300	0.000298	0.0000527	0.00216	0.00251	N	N	C/SLV <0.1
trans-1,2-Dichloroethene	n	7%	Y	0.679	140	0.00485	0.000000248	0.0000154	0.00487	N	Y	PCE is COPC (5)
Trichloroethene (TCE)	c	36%	Y	1.14	2.5	0.456	0.214	4.36	NE	N	Y	PCE is COPC (5)
Vinyl Chloride	c	26%	Y	0.413	0.025	16.5	-	-	16.5	N	Y	carc C/SLV >1

Table M-33
Identification of COPCs in Groundwater at All Four AOPCs Combined - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(2 of 3)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV				Bioaccumulative Potential? (Y/N) (Table J-6)	Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-28)	$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$ (Indoor Worker Table M-16)	Multimedia (1) sum(C/SLV_{soil} + C/SLV_{gw} + C/SLV_{sg})			
SVOCs (ug/L)												
Bis(2-ethylhexyl) Phthalate	c	26%	Y	4.70	1.2	3.92	0.209	-	4.13	Y	Y	carc C/SLV >1
Diethyl Phthalate	n	13%	N	0.873	17,000	0.0000514	0.0000000318	-	0.0000514	N	N	C/SLV <0.1
Di-n-octyl Phthalate	n	13%	Y	4.61	1.2	3.84	0.000129	-	3.84	Y	Y	C/SLV >0.1
Isophorone	c	9%	N	0.177	35	0.00506	-	-	0.00506	N	N	carc C/SLV <1
PAHs (ug/L)												
2-Methylnaphthalene	n	17%	N	0.175	670	0.000261	0.0000378	-	0.000299	Y	N	C/SLV <0.1
Acenaphthene	n	9%	N	0.158	670	0.000236	0.00000925	-	0.000245	Y	N	C/SLV <0.1
Naphthalene	c	13%	N	0.0873	670	0.000130	0.00700	-	0.00713	N	N	carc C/SLV <1
Phenanthrene	n	8%	N	0.485	8,300	0.0000584	0.0000228	-	0.0000812	Y	N	C/SLV <0.1
TPH (mg/L)							-					
Diesel Range Organics	n	52%	N	0.278	-	-	0.00676	-	0.00676	NA	N	Evaluated as PAHs
Gasoline Range Organics	n	26%	N	0.0474	-	-	0.0355	-	0.0355	NA	N	Evaluated as VOCs
Residual Range Organics	n	36%	N	0.261	-	-	0.0508	-	0.0508	NA	N	Evaluated as PAHs
Sum non-carcinogenic C/RBC (HI)						**5.77**						
Sum carcinogenic C/RBC (ELCR)						**4.8E-04**						

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency greater than 5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
gw = groundwater
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
max =maximum
mg/L = milligrams per liter
n = non-carcinogen
NE = multi-media was not evaluated since the chemical is already identified as a COPC.
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
sg = soil gas
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
UCL = 95% upper confidence limit
USEPA = United States Environmental Protection Agency
VOCs = volatile organic chemicals
WQC = water quality criteria

Table M-33
Identification of COPCs in Groundwater at All Four AOPCs Combined - Discharge and Bioaccumulation
Bradford Island -Upland Operable Unit
(3 of 3)

Chemicals of Interest	note	Detection Rate	Already an AOPC-specific COPC? Y/N	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4c)	Site concentration(C) / SLV				Bioaccumulative Potential? (Y/N) (Table J-6)	Retain as a COPC, Y/N?	Rationale
						$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation)	$\frac{C_{soil}}{SLV_{soil}}$ (Occupational Worker Table M-28)	$\frac{C_{soil\ gas}}{SLV_{soil\ gas}}$ (Indoor Worker Table M-16)	Multimedia (1) $sum(C/SLV_{soil} + C/SLV_{gw} + C/SLV_{sg})$			

Notes

Only detected chemicals with a detection frequency greater than 5% are shown in this table except for degradation products of PCE (see footnote 5). Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately. Total metal results are reported.
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4a.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c.
Hierarchy developed to select Screening Level Values for Soil gas; 1. DEQ Soil Gas Vapor Intrusion Occupational RBCs, 2. Adjusted USEPA Industrial Air RSLs, and 3. Surrogates used as noted in Appendix J-4d.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology.

Footnotes
(1) At the request of DEQ, COPC selection for groundwater is done separately for the on-site groundwater ingestion pathway and the groundwater discharge to surface water pathway. Therefore, this screening accounts only for on-site upland exposure to groundwater.
(2) There is no SLV for chromium, but it is likely to exist in the trivalent form in the aerobic surface water environment
(3) SLVs are based on aesthetic considerations and are not included in summations or as a COPCs.
(4) Lead- unseived soil C/SLV was used.
(5) Degradation products of PCE are retained as COPCs if PCE is identified as a COPC, even if not detected or detected at less than 5% frequency per DEQ (2010a).

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately. Iron and manganese not included in summation, see footnote (3).
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if detection frequency exceeds 5% and sample size is greater than 20, inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-34
Summary of COPCs - All Four AOPCs Combined
Bradford Island -Upland Operable Unit
(1 of 1)

Media	Receptor	HI	ELCR	COPCs
Soil	Adult Outdoor Worker	0.123	5.0E-05	Arsenic Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzofluoranthenes, Total Chromium Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene Tetrachloroethene (PCE)
				Lead # Trichloroethene (TCE) 1,1-Dichloroethene # cis-1,2-Dichloroethene # trans-1,2-Dichloroethene # Vinyl Chloride
	Construction Worker	0.254	7.3E-06	Benzo(a)pyrene Tetrachloroethene (PCE)
				1,1-Dichloroethene # cis-1,2-Dichloroethene # trans-1,2-Dichloroethene # Trichloroethene (TCE) Vinyl Chloride
	Excavation Worker	0.198	6.2E-07	No COPCs
Groundwater	Construction/Excavation Worker	3.26	1.0E-06	Antimony # Iron # Mercury # Thallium # Vanadium # Zinc # Di-n-octyl Phthalate
	Potable Water User	11.2	**2.9E-04**	Arsenic Bis(2-ethylhexyl) Phthalate Chloroform Diesel Range Organics # Di-n-octyl Phthalate Manganese # Tetrachloroethene (PCE) Trichloroethene (TCE) Vinyl Chloride
				1,2,4-Trimethylbenzene # Antimony # cis-1,2-Dichloroethene # Gasoline Range Organics # Iron # Lead # Residual Range Organics # Thallium # Vanadium # Zinc # 1,1-Dichloroethene # trans-1,2-Dichloroethene #
	Discharge and Bioaccumulation	NE	NE	Arsenic Bis(2-ethylhexyl) Phthalate Di-n-octyl Phthalate # Tetrachloroethene (PCE)
				Antimony # Barium # Thallium # Zinc # 1,2,4-Trimethylbenzene # Isopropylbenzene # Lead # Mercury # n-Propylbenzene # Tributyltin # Vanadium # 1,1-Dichloroethene # cis-1,2-Dichloroethene # trans-1,2-Dichloroethene # Trichloroethene (TCE) Vinyl Chloride

Bold = COPCs ELCR >1E-04
- = Not evaluated
= non-carcinogenic COPC
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
COPC = chemicals of potential concern
ELCR = excess lifetime cancer risk
HI = hazard index
NE = Cumulative HI and ELCR not evaluated. These pathways were evaluated only to see if additional COPCs were identified for All Four Combined AOPCs.
PCBs = polychlorinated biphenyls
Shaded indicates COPC rationales not based on C/SLV>1 (multi-media, C/SLV>0.1, degradation product, or No SLV)

Table M-35
Identification of COPCs in Tissue at Forebay AOPC – Subsistence Fisher
Bradford Island - River Operable Unit
(1 of 4)

Medium	Chemicals of Interest	note	IUPAC #	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4f)	Site concentration(C) / SLV: $\frac{C_{tissue}}{SLV_{tissue}}$	Site concentration(C) / SLV: $\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User Table M-39)	Site concentration(C) / SLV: Multimedia (direct contact) sum(C/SLV_{sw} + C/SLV_{tissue})	Retain as a COPC, Y/N?	Rationale
INORGANICS (mg/kg ww)											
Tissue - Crayfish	Antimony	n	-	100%	0.0420	64 (1)	0.000656	-	0.000656	N	C/SLV <0.1
Tissue - Crayfish	Arsenic	c	-	100%	0.519	0.00076	683	26.6	709	Y	carc C/SLV >1
Tissue - Crayfish	Chromium	c	-	100%	0.764	20 (1)	0.0382	-	0.0382	N	carc C/SLV <1
Tissue - Crayfish	Mercury	n	-	100%	0.0237	0.049	0.484	-	0.484	N	C/SLV <1
Tissue - Crayfish	Methyl Mercury	n	-	100%	0.0329	0.049	0.671	-	0.671	N	C/SLV <1
Tissue - Crayfish	Nickel	c	-	100%	4.88	460 (1)	0.0106	-	0.0106	N	carc C/SLV <1
PCBs (ug/kg ww)											
Tissue - Crayfish	3,3',4,4'-Tetrachlorobiphenyl	c	77	100%	0.00867	0.076	0.114	0.0000256	0.114	N	carc C/SLV <1 (2)
Tissue - Crayfish	3,4,4',5-Tetrachlorobiphenyl	c	81	27%	0.000452	0.025	0.0181	-	0.0181	N	carc C/SLV <1 (2)
Tissue - Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	c	105	80%	0.0908	0.25	0.363	0.000104	0.363	N	carc C/SLV <1 (2)
Tissue - Crayfish	2,3,4,4',5-Pentachlorobiphenyl	c	114	93%	0.697	0.25	2.79	-	2.79	Y	carc C/SLV >1
Tissue - Crayfish	2,3',4,4',5-Pentachlorobiphenyl	c	118	100%	11.9	0.25	47.6	0.000302	47.6	Y	carc C/SLV >1
Tissue - Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	c	123	93%	0.412	0.25	1.65	-	1.65	Y	carc C/SLV >1
Tissue - Crayfish	3,3',4,4',5-Pentachlorobiphenyl	c	126	47%	0.00208	0.000076	27.4	-	27.4	Y	carc C/SLV >1
Tissue - Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	c	156 + 157 (3)	100%	3.53	0.25	14.1	0.000355	14.1	Y	carc C/SLV >1
Tissue - Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	c	167	100%	1.49	0.25	5.96	0.00000304	5.96	Y	carc C/SLV >1
Tissue - Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	c	189	80%	0.0821	0.25	0.328	0.0000127	0.328	N	carc C/SLV <1 (2)
Tissue - Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	c	-	100%	36.5	0.57	64.0	0.00123	64.0	Y	carc C/SLV >1
Tissue - Crayfish	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	c	-	100%	0.00117	0.0000076	153	-	153	Y	carc C/SLV >1
SVOCs (ug/kg ww)											
Tissue - Crayfish	Bis(2-ethylhexyl) Phthalate	c	-	27%	77.4	81.9 (1)	0.945	-	0.945	N	carc C/SLV <1
PAHs (ug/kg ww)											
Tissue - Crayfish	Acenaphthene	n	-	47%	0.160	15,000	0.0000107	0.000000581	0.0000112	N	C/SLV <1
Tissue - Crayfish	Anthracene	n	-	27%	0.0940	15,000	0.00000627	0.0000000110	0.00000628	N	C/SLV <1
Tissue - Crayfish	Benzo(a)anthracene	c	-	67%	0.273	1.57 (1)	0.174	0.00207	0.176	N	carc C/SLV <1
Tissue - Crayfish	Benzo(a)pyrene	c	-	20%	0.135	0.157 (1)	0.859	-	0.859	N	carc C/SLV <1
Tissue - Crayfish	Benzo(b)fluoranthene	c	-	47%	0.140	1.57 (1)	0.0891	0.00316	0.0923	N	carc C/SLV <1
Tissue - Crayfish	Benzo(g,h,i)perylene	c	-	27%	0.165	15.7 (1)	0.0105	-	0.0105	N	carc C/SLV <1
Tissue - Crayfish	Benzo(k)fluoranthene	c	-	47%	0.111	15.7 (1)	0.00706	-	0.00706	N	carc C/SLV <1
Tissue - Crayfish	Chrysene	c	-	53%	0.144	157 (1)	0.000916	0.0000591	0.000976	N	carc C/SLV <1
Tissue - Crayfish	Fluoranthene	n	-	100%	0.426	20,000	0.0000213	0.000000523	0.0000218	N	C/SLV <1
Tissue - Crayfish	Fluorene	n	-	33%	0.165	15,000	0.0000110	-	0.0000110	N	C/SLV <1
Tissue - Crayfish	Indeno(1,2,3-cd)pyrene	c	-	20%	0.166	1.57 (1)	0.106	-	0.106	N	carc C/SLV <1
Tissue - Crayfish	Phenanthrene	n	-	67%	0.576	15,000	0.0000384	0.000000146	0.0000385	N	C/SLV <1

Table M-35
Identification of COPCs in Tissue at Forebay AOPC – Subsistence Fisher
Bradford Island - River Operable Unit
(2 of 4)

Medium	Chemicals of Interest	note	IUPAC #	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4f)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
							$\frac{C_{tissue}}{SLV_{tissue}}$	$\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User Table M-39)	Multimedia (direct contact) $sum(C/SLV_{sw} + C/SLV_{tissue})$		
Tissue - Crayfish	Pyrene	n	-	100%	0.468	15,000	0.0000312	-	0.0000312	N	C/SLV <1
Tissue - Crayfish	**Sum non-carcinogenic C/RBC (HI)**						**0.672**				
Tissue - Crayfish	**Sum carcinogenic C/RBC (ELCR)**						**7.5E-04**				
INORGANICS (mg/kg ww)											
Tissue - Smallmouth Bass	Aluminum	n	-	100%	7.11	18,500 (1)	0.000384	0.00381	0.00420	N	C/SLV <0.1
Tissue - Smallmouth Bass	Barium	n	-	100%	1.73	4 (1)	0.433	0.00370	0.436	Y	C/SLV >0.1
Tissue - Smallmouth Bass	Copper	n	-	100%	0.764	260 (1)	0.00294	0.000527	0.00347	N	C/SLV <0.1
Tissue - Smallmouth Bass	Mercury	n	-	100%	0.317	0.049	6.47	-	6.47	Y	C/SLV >0.1
Tissue - Smallmouth Bass	Zinc	n	-	100%	14.9	1,000 (1)	0.0149	0.000682	0.0156	N	C/SLV <0.1
PCBs (ug/kg ww)											
Tissue - Smallmouth Bass	Aroclor 1242	c	-	5.3%	260	0.57	456	-	456	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Aroclor 1254	c	-	37%	4,047	0.57	7,100	-	7,100	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Total PCBs As Aroclors (NDs at MDL)	c	-	37%	4,100	0.57	7,193	-	7,193	Y	carc C/SLV >1
Tissue - Smallmouth Bass	3,3',4,4'-Tetrachlorobiphenyl	c	77	100%	5.64	0.076	74.2	0.0000256	74.2	Y	carc C/SLV >1
Tissue - Smallmouth Bass	3,4,4',5-Tetrachlorobiphenyl	c	81	89%	0.691	0.025	27.6	-	27.6	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3,3',4,4'-Pentachlorobiphenyl	c	105	100%	887	0.25	3,548	0.000104	3,548	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3,4,4',5-Pentachlorobiphenyl	c	114	100%	65.6	0.25	262	-	262	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3',4,4',5-Pentachlorobiphenyl	c	118	100%	2,310	0.25	9,240	0.000302	9,240	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3',4,4',5'-Pentachlorobiphenyl	c	123	100%	38.7	0.25	155	-	155	Y	carc C/SLV >1
Tissue - Smallmouth Bass	3,3',4,4',5-Pentachlorobiphenyl	c	126	95%	1.92	0.000076	25,263	-	25,263	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	c	156 + 157 (3)	100%	375	0.25	1,500	0.000355	1,500	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3',4,4',5,5'-Hexachlorobiphenyl	c	167	100%	108	0.25	432	0.00000304	432	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3,3',4,4',5,5'-Heptachlorobiphenyl	c	189	100%	8.14	0.25	32.6	0.0000127	32.6	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Total PCBs As Congeners (KM, capped; NDs at MDL)	c	-	100%	19,314	0.57	33,884	0.00123	33,884	Y	carc C/SLV >1
Tissue - Smallmouth Bass	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	c	-	100%	0.307	0.0000076	40,421	-	40,421	Y	carc C/SLV >1
SVOCs (ug/kg ww)											
Tissue - Smallmouth Bass	Bis(2-ethylhexyl) Phthalate	c	-	37%	349	81.9 (1)	4.26	-	4.26	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Butyl Benzyl Phthalate	c	-	11%	239	604 (1)	0.396	-	0.396	N	carc C/SLV <1
Tissue - Smallmouth Bass	Di-n-butyl Phthalate	n	-	5.3%	150	49,157 (1)	0.00305	-	0.00305	N	C/SLV <0.1
PAHs (ug/kg ww)											
Tissue - Smallmouth Bass	Acenaphthene	n	-	84%	1.07	15,000	0.0000713	0.000000581	0.0000719	N	C/SLV <0.1
Tissue - Smallmouth Bass	Anthracene	n	-	95%	11.8	15,000	0.000785	0.0000000110	0.000785	N	C/SLV <0.1
Tissue - Smallmouth Bass	Benzo(a)anthracene	c	-	26%	3.69	1.57 (1)	2.35	0.00207	2.35	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Benzo(a)pyrene	c	-	42%	3.25	0.157 (1)	20.7	-	20.7	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Benzo(b)fluoranthene	c	-	32%	4.21	1.57 (1)	2.68	0.00316	2.68	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Benzo(g,h,i)perylene	c	-	32%	1.46	15.7 (1)	0.0929	-	0.0929	N	carc C/SLV <1

Table M-35
Identification of COPCs in Tissue at Forebay AOPC – Subsistence Fisher
Bradford Island - River Operable Unit
(3 of 4)

Medium	Chemicals of Interest	note	IUPAC #	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4f)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
							$\frac{C_{tissue}}{SLV_{tissue}}$	$\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User Table M-39)	Multimedia (direct contact) sum(C/SLV_{sw} + C/SLV_{tissue})		
Tissue - Smallmouth Bass	Benzo(k)fluoranthene	c	-	47%	3.29	15.7 (1)	0.209	-	0.209	N	carc C/SLV <1
Tissue - Smallmouth Bass	Chrysene	c	-	42%	2.81	157 (1)	0.0179	0.0000591	0.0179	N	carc C/SLV <1
Tissue - Smallmouth Bass	Dibenz(a,h)anthracene	c	-	32%	1.72	0.157 (1)	10.9	-	10.9	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Fluoranthene	n	-	53%	3.03	20,000	0.000152	0.000000523	0.000152	N	C/SLV <0.1
Tissue - Smallmouth Bass	Fluorene	n	-	89%	2.52	15,000	0.000168	-	0.000168	N	C/SLV <0.1
Tissue - Smallmouth Bass	Indeno(1,2,3-cd)pyrene	c	-	37%	2.76	1.57 (1)	1.76	-	1.76	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Phenanthrene	n	-	100%	2.88	15,000	0.000192	0.000000146	0.000192	N	C/SLV <0.1
Tissue - Smallmouth Bass	Pyrene	n	-	47%	2.30	15,000	0.000153	-	0.000153	N	C/SLV <0.1
Tissue - Smallmouth Bass	**Sum cPAH C/RBC (ELCR)**						**3.8E-05**				
Tissue - Smallmouth Bass	**Sum non-carcinogenic C/RBC (HI)**						**6.92**				
Tissue - Smallmouth Bass	**Sum carcinogenic C/RBC (ELCR)**						**3.4E-02**				

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
ATL = acceptable tissue level
BCF = bioconcentration factor
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{tissue}/SLV_{tissue} only (i.e. single medium).
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{tissue}/SLV_{tissue} only (i.e. single medium).
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
max =maximum
MCL = maximum contaminant level
MDL = method detection limit
mg/kg = milligrams per kilogram
n = non-carcinogen
ND = non detect
PAHs = polyaromatic hydrocarbons
PCBs =polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
SVOCs = semivolatile organic chemicals
sw = surface water
UCL = 95% upper confidence limit
ug/kg = micrograms per kilogram
USEPA = United States Environmental Protection Agency
ww = wet weight

Notes

Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference (see Table 8-3) are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4b.
Hierarchy was developed to determine Screening Levels Values for Tissue; 1. Minimum of DEQ HH Bioaccumulative ATLs (human subsistence/tribal) (Appendix J-4f).

Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 200
DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf

Table M-35
Identification of COPCs in Tissue at Forebay AOPC – Subsistence Fisher
Bradford Island - River Operable Unit
(4 of 4)

Medium	Chemicals of Interest	note	IUPAC #	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4f)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
							$\frac{C_{tissue}}{SLV_{tissue}}$	$\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User Table M-39)	Multimedia (direct contact) $sum(C/SLV_{sw} + C/SLV_{tissue})$		

United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) SLVs were calculated ATLs using DEQ Methodology (DEQ 2007); see Section 11.3.4.1.1 and Appendix J-2.
(2) An individual dioxin-like congener may not qualify as a COPC based on DEQ's screening methodology. However, all dioxin-like congeners are retained as COPCs since they contribute to Total PCBs as Congeners and TEQs which are selected as COPCs
(3) PCB Congener 157 co-elutes with PCB Congener 156.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum cPAH C/RBC (ELCR) = includes only individual carcinogenic polyaromatic hydrocarbons selected as a COPC. Only shown for a receptor if cPAH(s) have been selected as COPC.
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. If methyl mercury was available, it was the only form of mercury used in the summation, otherwise total mercury was usec
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Total PCBs As Congeners were the only form of PCB that were used in the summation.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if-inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-36
Identification of COPCs in Sediment at Forebay AOPC – Subsistence Fisher
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	note	IUPAC #	Detection Rate (1)	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4e)	Site concentration(C) / SLV			Bioaccumulative Potential? (Y/N)	Retain as a COPC, Y/N?	Rationale
						$\frac{C_{sed}}{SLV_{sed}}$	$\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User Table M-39)	Multimedia (direct contact) $sum(C/SLV_{sed} + C/SLV_{sw})$			
INORGANICS (mg/kg)											
Arsenic	c	-	100%	Statistically ≤ to Reference Area (see Table 7-18 in RI)					Y	N	≤ Reference UPL
Barium	n	-	100%	Statistically ≤ to Reference Area (see Table 7-18 in RI)					N	N	≤ Reference UPL
Mercury	n	-	100%	Statistically ≤ to Reference Area (see Table 7-18 in RI)					Y	N	≤ Reference UPL
PCBs (ug/kg dw)											
Aroclor 1254	c	-	11%	27.0	0.048	563	-	563	Y	Y	carc C/SLV >1
Total PCBs As Aroclors (NDs at MDL)	c	-	11%	28.7	0.048	598	-	598	Y	Y	carc C/SLV >1
3,3',4,4'-Tetrachlorobiphenyl	c	77	100%	0.00223	0.0064	0.348	0.0000256	0.348	Y	N	carc C/SLV <1 (2)
2,3,3',4,4'-Pentachlorobiphenyl	c	105	100%	0.318	0.021	15.1	0.000104	15.1	Y	Y	carc C/SLV >1
2,3,4,4',5-Pentachlorobiphenyl	c	114	79%	0.0238	0.021	1.13	-	1.13	Y	Y	carc C/SLV >1
2,3',4,4',5-Pentachlorobiphenyl	c	118	100%	0.783	0.026	30.1	0.000302	30.1	Y	Y	carc C/SLV >1
2,3',4,4',5'-Pentachlorobiphenyl	c	123	58%	0.0146	0.026	0.562	-	0.562	Y	N	carc C/SLV <1 (2)
3,3',4,4',5-Pentachlorobiphenyl	c	126	16%	0.000188	0.0000062	30.3	-	30.3	Y	Y	carc C/SLV >1
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	c	156 + 157 (3)	95%	0.149	0.026	5.73	0.000355	5.73	Y	Y	carc C/SLV >1
2,3',4,4',5,5'-Hexachlorobiphenyl	c	167	84%	0.0449	0.026	1.73	0.00000304	1.73	Y	Y	carc C/SLV >1
2,3,3',4,4',5,5'-Heptachlorobiphenyl	c	189	47%	0.00169	0.14	0.0121	0.0000127	0.0121	Y	N	carc C/SLV <1 (2)
Total PCBs As Congeners (KM, capped; NDs at MDL)	c	-	100%	3.59	0.048	74.7	0.00123	74.7	Y	Y	carc C/SLV >1
PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	c	-	100%	0.0000895	0.0000011	81.4	0.000127	81.4	Y	Y	carc C/SLV >1
SVOCs (ug/kg dw)											
Bis(2-ethylhexyl) Phthalate	c	-	16%	180	-	-	-	-	Y	Y	No SLV
PAHs (ug/kg dw)											
Benzo(a)anthracene	c	-	63%	4.68	47,000 (4)	0.0000996	0.00207	0.00217	Y	N	carc C/SLV <1
Benzo(a)pyrene	c	-	58%	4.52	47,000 (4)	0.0000962	-	0.0000962	Y	N	carc C/SLV <1
Benzo(b)fluoranthene	c	-	47%	5.73	47,000 (4)	0.000122	0.00316	0.00328	Y	N	carc C/SLV <1
Indeno(1,2,3-cd)pyrene	c	-	47%	3.47	47,000 (4)	0.0000738	-	0.0000738	Y	N	carc C/SLV <1
Sum non-carcinogenic C/RBC (HI)						-					
Sum carcinogenic C/RBC (ELCR)						**7.5E-05**					

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality

Table M-36
Identification of COPCs in Sediment at Forebay AOPC – Subsistence Fisher
Bradford Island - River Operable Unit
(2 of 2)

dw = dry weight
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{sed}/SLV_{sed} only (i.e. single medium).
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{sed}/SLV_{sed} only (i.e. single medium).
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
max =maximum
MCL = maximum contaminant level
MDL = method detection limit
mg/kg = milligrams per kilogram
n = non-carcinogen
NA = not applicable
ND = non detect
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
sed = sediment
SLV = screening level value
SVOCs = semivolatile organic chemicals
sw = surface water
TPH = total petroleum hydrocarbon
UCL = 95% upper confidence limit
ug/kg = micrograms per kilogram
USEPA = United States Environmental Protection Agency

Notes
Only Subsitence Tissue COPCs with a detection frequency >5% are shown in this table (see Table M-35). Reporting limits for non-detected chemicals are evaluated separately.
Sum non-carcinogenic is not calculated because there are no non-carcinogenic Chemicals of Interest.
Hierarchy was developed to determine Screening Levels Values for Sediment; 1. DEQ HH Subsistence Bioaccumulative SLVs and 2. Surrogates used as noted in Appendix J-4e.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4b.
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Sample size was less than 20 so detection frequency was not taken into consideration for COPC selection.
(2) An individual dioxin-like congener may not qualify as a COPC based on DEQ's screening methodology. However, all dioxin-like congeners are retained as COPCs since they contribute to Total PCBs as Congeners and TEQs which are selected as COPCs.
(3) PCB Congener 157 co-elutes with PCB Congener 156.
(4) Non-cancer based sediment SLVs may not be adequately protective of cancer endpoint.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Total PCBs As Congeners were the only form of PCB that were used in the summation.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if-inorganic site concentration exceeds reference and one of the following conditions:
- [C/SLV] > 1.0 for an individual chemical in a given medium
- [Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
- [Sum C/SLV] >1.0 for a single chemical in multiple media

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-37
Identification of COPCs in Tissue at Forebay AOPC – Recreational Fisher
Bradford Island - River Operable Unit
(1 of 4)

Medium	Chemicals of Interest	note	IUPAC #	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4f)	Site concentration(C) / SLV: $\frac{C_{tissue}}{SLV_{tissue}}$	Site concentration(C) / SLV: $\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User Table M-39)	Site concentration(C) / SLV: Multimedia (direct contact) sum(C/SLV_{sw} + C/SLV_{tissue})	Retain as a COPC, Y/N?	Rationale
INORGANICS (mg/kg ww)											
Tissue - Crayfish	Antimony	n	-	100%	0.0420	64 (1)	0.000656	-	0.000656	N	C/SLV <0.1
Tissue - Crayfish	Arsenic	c	-	100%	0.519	0.0062	83.7	26.6	110	Y	carc C/SLV >1
Tissue - Crayfish	Chromium	c	-	100%	0.764	20 (1)	0.0382	-	0.0382	N	carc C/SLV <1
Tissue - Crayfish	Mercury	n	-	100%	0.0237	0.4	0.0593	-	0.0593	N	C/SLV <1
Tissue - Crayfish	Methyl Mercury	n	-	100%	0.0329	0.4	0.0823	-	0.0823	N	C/SLV <1
Tissue - Crayfish	Nickel	c	-	100%	4.88	460 (1)	0.0106	-	0.0106	N	carc C/SLV <1
PCBs (ug/kg ww)											
Tissue - Crayfish	3,3',4,4'-Tetrachlorobiphenyl	c	77	100%	0.00867	0.62	0.0140	0.0000256	0.0140	Y	carc C/SLV <1 (2)
Tissue - Crayfish	3,4,4',5-Tetrachlorobiphenyl	c	81	27%	0.000452	0.21	0.00215	-	0.00215	Y	carc C/SLV <1 (2)
Tissue - Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	c	105	80%	0.0908	2.1	0.0432	0.000104	0.0433	Y	carc C/SLV <1 (2)
Tissue - Crayfish	2,3,4,4',5-Pentachlorobiphenyl	c	114	93%	0.697	2.1	0.332	-	0.332	Y	carc C/SLV <1 (2)
Tissue - Crayfish	2,3',4,4',5-Pentachlorobiphenyl	c	118	100%	11.9	2.1	5.67	0.000302	5.67	Y	carc C/SLV >1
Tissue - Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	c	123	93%	0.412	2.1	0.196	-	0.196	Y	carc C/SLV <1 (2)
Tissue - Crayfish	3,3',4,4',5-Pentachlorobiphenyl	c	126	47%	0.00208	0.00062	3.35	-	3.35	Y	carc C/SLV >1
Tissue - Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	c	156 + 157 (3)	100%	3.53	2.1	1.68	0.000355	1.68	Y	carc C/SLV >1
Tissue - Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	c	167	100%	1.49	2.1	0.710	0.00000304	0.710	Y	carc C/SLV <1 (2)
Tissue - Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	c	189	80%	0.0821	2.1	0.0391	0.0000127	0.0391	Y	carc C/SLV <1 (2)
Tissue - Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	c	-	100%	36.5	4.7	7.77	0.00123	7.77	Y	carc C/SLV >1
Tissue - Crayfish	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	c	-	100%	0.00117	0.000062	18.8	-	18.8	Y	carc C/SLV >1
SVOCs (ug/kg ww)											
Tissue - Crayfish	Bis(2-ethylhexyl) Phthalate	c	-	27%	77.4	667 (1)	0.116	-	0.116	N	carc C/SLV <1
PAHs (ug/kg ww)											
Tissue - Crayfish	Acenaphthene	n	-	47%	0.160	120,000	0.00000133	0.000000581	0.00000191	N	C/SLV <1
Tissue - Crayfish	Anthracene	n	-	27%	0.0940	120,000	0.000000783	0.0000000110	0.000000794	N	C/SLV <1
Tissue - Crayfish	Benzo(a)anthracene	c	-	67%	0.273	12.8 (1)	0.0214	0.00207	0.0234	N	carc C/SLV <1
Tissue - Crayfish	Benzo(a)pyrene	c	-	20%	0.135	1.28 (1)	0.106	-	0.106	N	carc C/SLV <1
Tissue - Crayfish	Benzo(b)fluoranthene	c	-	47%	0.140	12.8 (1)	0.0110	0.00316	0.0141	N	carc C/SLV <1
Tissue - Crayfish	Benzo(g,h,i)perylene	c	-	27%	0.165	128 (1)	0.00129	-	0.00129	N	carc C/SLV <1
Tissue - Crayfish	Benzo(k)fluoranthene	c	-	47%	0.111	128 (1)	0.000868	-	0.000868	N	carc C/SLV <1
Tissue - Crayfish	Chrysene	c	-	53%	0.144	1,279 (1)	0.000113	0.0000591	0.000172	N	carc C/SLV <1
Tissue - Crayfish	Fluoranthene	n	-	100%	0.426	160,000	0.00000266	0.000000523	0.00000319	N	C/SLV <1
Tissue - Crayfish	Fluorene	n	-	33%	0.165	120,000	0.00000138	-	0.00000138	N	C/SLV <1
Tissue - Crayfish	Indeno(1,2,3-cd)pyrene	c	-	20%	0.166	12.8 (1)	0.0130	-	0.0130	N	carc C/SLV <1

Table M-37
Identification of COPCs in Tissue at Forebay AOPC – Recreational Fisher
Bradford Island - River Operable Unit
(2 of 4)

Medium	Chemicals of Interest	note	IUPAC #	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4f)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
							$\frac{C_{tissue}}{SLV_{tissue}}$	$\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User Table M-39)	Multimedia (direct contact) $sum(C/SLV_{sw} + C/SLV_{tissue})$		
Tissue - Crayfish	Phenanthrene	n	-	67%	0.576	120,000	0.00000480	0.000000146	0.00000495	N	C/SLV <1
Tissue - Crayfish	Pyrene	n	-	100%	0.468	120,000	0.00000390	-	0.00000390	N	C/SLV <1
Tissue - Crayfish	**Sum non-carcinogenic C/RBC (HI)**						**0.0829**				
Tissue - Crayfish	**Sum carcinogenic C/RBC (ELCR)**						**9.2E-05**				
INORGANICS (mg/kg ww)											
Tissue - Smallmouth Bass	Aluminum	n	-	100%	7.11	18,500 (1)	0.000384	0.00381	0.00420	N	C/SLV <0.1
Tissue - Smallmouth Bass	Barium	n	-	100%	1.73	4 (1)	0.433	0.00370	0.436	Y	C/SLV >0.1
Tissue - Smallmouth Bass	Copper	n	-	100%	0.764	260 (1)	0.0029	0.000527	0.00347	N	C/SLV <0.1
Tissue - Smallmouth Bass	Mercury	n	-	100%	0.317	0.4	0.793	-	0.793	Y	C/SLV >0.1
Tissue - Smallmouth Bass	Zinc	n	-	100%	14.9	1,000 (1)	0.0149	0.000682	0.0156	N	C/SLV <0.1
PCBs (ug/kg ww)											
Tissue - Smallmouth Bass	Aroclor 1242	c	-	5.3%	260	4.7	55.3	-	55.3	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Aroclor 1254	c	-	37%	4,047	4.7	861	-	861	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Total PCBs As Aroclors (NDs at MDL)	c	-	37%	4,100	4.7	872	-	872	Y	carc C/SLV >1
Tissue - Smallmouth Bass	3,3',4,4'-Tetrachlorobiphenyl	c	77	100%	5.64	0.62	9.10	0.0000256	9.10	Y	carc C/SLV >1
Tissue - Smallmouth Bass	3,4,4',5-Tetrachlorobiphenyl	c	81	89%	0.691	0.21	3.29	-	3.29	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3,3',4,4'-Pentachlorobiphenyl	c	105	100%	887	2.1	422	0.000104	422	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3,4,4',5-Pentachlorobiphenyl	c	114	100%	65.6	2.1	31.2	-	31.2	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3',4,4',5-Pentachlorobiphenyl	c	118	100%	2,310	2.1	1,100	0.000302	1,100	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3',4,4',5'-Pentachlorobiphenyl	c	123	100%	38.7	2.1	18.4	-	18.4	Y	carc C/SLV >1
Tissue - Smallmouth Bass	3,3',4,4',5-Pentachlorobiphenyl	c	126	95%	1.92	0.00062	3,097	-	3,097	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	c	156 + 157 (3)	100%	375	2.1	179	0.000355	179	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3',4,4',5,5'-Hexachlorobiphenyl	c	167	100%	108	2.1	51.4	0.00000304	51.4	Y	carc C/SLV >1
Tissue - Smallmouth Bass	2,3,3',4,4',5,5'-Heptachlorobiphenyl	c	189	100%	8.14	2.1	3.88	0.0000127	3.88	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Total PCBs As Congeners (KM, capped; NDs at MDL)	c	-	100%	19,314	4.7	4,109	0.00123	4,109	Y	carc C/SLV >1
Tissue - Smallmouth Bass	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	c	-	100%	0.307	0.000062	4,955	-	4,955	Y	carc C/SLV >1
SVOCs (ug/kg ww)											
Tissue - Smallmouth Bass	Bis(2-ethylhexyl) Phthalate	c	-	37%	349	667 (1)	0.524	-	0.524	N	carc C/SLV <1
Tissue - Smallmouth Bass	Butyl Benzyl Phthalate	c	-	11%	239	4,912 (1)	0.0487	-	0.0487	N	carc C/SLV <1
Tissue - Smallmouth Bass	Di-n-butyl Phthalate	n	-	5.3%	150	400,000 (1)	0.000375	-	0.000375	N	C/SLV <1
PAHs (ug/kg ww)											
Tissue - Smallmouth Bass	Acenaphthene	n	-	84%	1.07	120,000	0.00000892	0.000000581	0.00000950	N	C/SLV <1
Tissue - Smallmouth Bass	Anthracene	n	-	95%	11.8	120,000	0.0000981	0.0000000110	0.0000981	N	C/SLV <1
Tissue - Smallmouth Bass	Benzo(a)anthracene	c	-	26%	3.69	12.8 (1)	0.288	0.00207	0.291	N	carc C/SLV <1
Tissue - Smallmouth Bass	Benzo(a)pyrene	c	-	42%	3.25	1.28 (1)	2.55	-	2.55	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Benzo(b)fluoranthene	c	-	32%	4.21	12.8 (1)	0.329	0.00316	0.332	N	carc C/SLV <1

Table M-37
Identification of COPCs in Tissue at Forebay AOPC – Recreational Fisher
Bradford Island - River Operable Unit
(3 of 4)

Medium	Chemicals of Interest	note	IUPAC #	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4f)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
							$\frac{C_{tissue}}{SLV_{tissue}}$	$\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User Table M-39)	Multimedia (direct contact) sum(C/SLV_{sw} + C/SLV_{tissue})		
Tissue - Smallmouth Bass	Benzo(g,h,i)perylene	c	-	32%	1.46	128 (1)	0.0114	-	0.0114	N	carc C/SLV <1
Tissue - Smallmouth Bass	Benzo(k)fluoranthene	c	-	47%	3.29	128 (1)	0.0257	-	0.0257	N	carc C/SLV <1
Tissue - Smallmouth Bass	Chrysene	c	-	42%	2.81	1,279 (1)	0.00220	0.0000591	0.00226	N	carc C/SLV <1
Tissue - Smallmouth Bass	Dibenz(a,h)anthracene	c	-	32%	1.72	1.28 (1)	1.35	-	1.35	Y	carc C/SLV >1
Tissue - Smallmouth Bass	Fluoranthene	n	-	53%	3.03	160,000	0.0000189	0.000000523	0.0000195	N	C/SLV <1
Tissue - Smallmouth Bass	Fluorene	n	-	89%	2.52	120,000	0.0000210	-	0.0000210	N	C/SLV <1
Tissue - Smallmouth Bass	Indeno(1,2,3-cd)pyrene	c	-	37%	2.76	12.8 (1)	0.216	-	0.216	N	carc C/SLV <1
Tissue - Smallmouth Bass	Phenanthrene	n	-	100%	2.88	120,000	0.0000240	0.000000146	0.0000241	N	C/SLV <1
Tissue - Smallmouth Bass	Pyrene	n	-	47%	2.30	120,000	0.0000192	-	0.0000192	N	C/SLV <1
Tissue - Smallmouth Bass	**Sum cPAH C/RBC (ELCR)**						**3.9E-06**				
Tissue - Smallmouth Bass	**Sum non-carcinogenic C/RBC (HI)**						**1.24**				
Tissue - Smallmouth Bass	**Sum carcinogenic C/RBC (ELCR)**						**4.1E-03**				

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
ATL = acceptable tissue level
BCF = bioconcentration factor
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{tissue}/SLV_{tissue} only (i.e. single medium).
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{tissue}/SLV_{tissue} only (i.e. single medium).
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
max =maximum
MCL = maximum contaminant level
MDL = method detection limit
mg/kg = milligrams per kilogram
n = non-carcinogen
ND = non detect
PAHs = polyaromatic hydrocarbons
PCBs =polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
SVOCs = semivolatile organic chemicals
sw = surface water
UCL = 95% upper confidence limit
ug/kg = micrograms per kilogram
USEPA = United States Environmental Protection Agency
ww = wet weight

Notes

Only detected chemicals with a detection frequency greater than 5% and inorganics greater than reference are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4b.
Hierarchy was developed to determine Screening Levels Values for Tissue; 1. Minimum of DEQ HH Bioaccumulative ATLs (human general/recreational) (Appendix J-4f).
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.

Table M-37
Identification of COPCs in Tissue at Forebay AOPC – Recreational Fisher
Bradford Island - River Operable Unit
(4 of 4)

Medium	Chemicals of Interest	note	IUPAC #	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4f)	Site concentration(C) / SLV			Retain as a COPC, Y/N?	Rationale
							$\frac{C_{tissue}}{SLV_{tissue}}$	$\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User Table M-39)	Multimedia (direct contact) $sum(C/SLV_{sw} + C/SLV_{tissue})$		

DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) SLVs were calculated ATLs using DEQ Methodology (DEQ 2007); see Section 11.3.4.1.1 and Appendix J-2.
(2) An individual dioxin-like congener may not qualify as a COPC based on DEQ's screening methodology. However, all dioxin-like congeners are retained as COPCs since they contribute to Total PCBs as Congeners and TEQs which are selected as COPCs
(2) PCB Congener 157 co-elutes with PCB Congener 156.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum cPAH C/RBC (ELCR) = includes only individual carcinogenic polyaromatic hydrocarbons selected as a COPC. Only shown for a receptor if cPAH(s) have been selected as COPC.
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. If methyl mercury was available, it was the only form of mercury used in the summation, otherwise total mercury was used
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Total PCBs As Congeners were the only form of PCB that were used in the summation.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-38
Identification of COPCs in Sediment at Forebay AOPC – Recreational Fisher
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	note	IUPAC #	Detection Rate (1)	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4e)	Site concentration(C) / SLV			Bioaccumulative Potential? (Y/N)	Retain as a COPC, Y/N?	Rationale
						$\frac{C_{sed}}{SLV_{sed}}$	$\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User Table M-39)	Multimedia (direct contact) $sum(C/SLV_{sed} + C/SLV_{sw})$			
INORGANICS (mg/kg)											
Arsenic	c	-	100%	Statistically ≤ to Reference Area (see Table 7-18 in RI)					Y	N	≤ Reference UPL
Barium	n	-	100%	Statistically ≤ to Reference Area (see Table 7-18 in RI)					N	N	≤ Reference UPL
Mercury	n	-	100%	Statistically ≤ to Reference Area (see Table 7-18 in RI)					Y	N	≤ Reference UPL
PCBs (ug/kg dw)											
Aroclor 1254	c	-	11%	27.0	0.39	69.2	-	69.2	Y	Y	carc C/SLV >1
Total PCBs As Aroclors (NDs at MDL)	c	-	11%	28.7	0.39	73.6	-	73.6	Y	Y	carc C/SLV >1
3,3',4,4'-Tetrachlorobiphenyl	c	77	100%	0.00223	0.052	0.0429	0.0000256	0.0429	Y	Y	carc C/SLV <1 (2)
2,3,3',4,4'-Pentachlorobiphenyl	c	105	100%	0.318	0.17	1.87	0.000104	1.87	Y	Y	carc C/SLV >1
2,3,4,4',5-Pentachlorobiphenyl	c	114	79%	0.0238	0.17	0.140	-	0.140	Y	Y	carc C/SLV <1 (2)
2,3',4,4',5-Pentachlorobiphenyl	c	118	100%	0.783	0.12	6.53	0.000302	6.53	Y	Y	carc C/SLV >1
2,3',4,4',5'-Pentachlorobiphenyl	c	123	58%	0.0146	0.21	0.0695	-	0.0695	Y	Y	carc C/SLV <1 (2)
3,3',4,4',5-Pentachlorobiphenyl	c	126	16%	0.000188	0.00005	3.76	-	3.76	Y	Y	carc C/SLV >1
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	c	156 + 157 (3)	95%	0.149	0.21	0.710	0.000355	0.710	Y	Y	carc C/SLV <1 (2)
2,3',4,4',5,5'-Hexachlorobiphenyl	c	167	84%	0.0449	0.21	0.214	0.00000304	0.214	Y	Y	carc C/SLV <1 (2)
2,3,3',4,4',5,5'-Heptachlorobiphenyl	c	189	47%	0.00169	1.2	0.00141	0.0000127	0.00142	Y	Y	carc C/SLV <1 (2)
Total PCBs As Congeners (KM, capped; NDs at MDL)	c	-	100%	3.59	0.39	9.19	0.00123	9.19	Y	Y	carc C/SLV >1
PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	c	-	100%	0.0000895	0.0000091	9.84	0.000127	9.84	Y	Y	carc C/SLV >1
PAHs (ug/kg dw)											
Benzo(a)pyrene	c	-	58%	4.52	380,000 (4)	0.0000119	-	0.0000119	Y	N	carc C/SLV <1
Sum non-carcinogenic C/RBC (HI)						**-**					
Sum carcinogenic C/RBC (ELCR)						**9.2E-06**					

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
AOPC = area of potential concern
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
dw = dry weight
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{sed}/SLV_{sed} only (i.e. single medium).
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{sed}/SLV_{sed} only (i.e. single medium).
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
max =maximum

Table M-38
Identification of COPCs in Sediment at Forebay AOPC – Recreational Fisher
Bradford Island - River Operable Unit
(2 of 2)

MCL = maximum contaminant level
MDL = method detection limit
mg/kg = milligrams per kilogram
n = non-carcinogen
NA = not applicable
ND = non detect
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
RBC = risk based concentration
RSL = regional screening level
sed = sediment
SLV = screening level value
SVOCs = semivolatile organic chemicals
sw = surface water
UCL = 95% upper confidence limit
ug/kg = micrograms per kilogram
USEPA = United States Environmental Protection Agency

Notes
Only detected chemicals with a detection frequency greater than 5% and were selected as a Tissue COPC are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Sum non-carcinogenic is not calculated because there are no non-carcinogenic Chemicals of Interest.
Hierarchy was developed to determine Screening Levels Values for Sediment; 1. DEQ HH General/Recreational Bioaccumulative SLVs and 2. Surrogates used as noted in Appendix J-4e.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4b.

Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 2009
DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) Sample size was less than 20 so detection frequency was not taken into consideration for COPC selection.
(2) An individual dioxin-like congener may not qualify as a COPC based on DEQ's screening methodology. However, all dioxin-like congeners are retained as COPCs since they contribute to Total PCBs as Congeners and TEQs which are selected as COPCs.
(3) PCB Congener 157 co-elutes with PCB Congener 156.
(4) Non-cancer based sediment SLVs may not be adequately protective of cancer endpoint.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Total PCBs As Congeners were the only form of PCB that were used in the summation.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if inorganic site concentration exceeds reference and one of the following conditions:
- [C/SLV] > 1.0 for an individual chemical in a given medium
- [Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
- [Sum C/SLV] >1.0 for a single chemical in multiple media

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-39
Identification of COPCs in Surface Water at Forebay AOPC - Potable Water User
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	note	Total/ Dissolved	IUPAC #	Max Detected Value	Detection Rate	Reference Area		Higher than Reference Range Y/N?	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV				Retain as a COPC, Y/N?	Rationale
						Min Detected Value	Max Detected Value			$\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User Table M-39)	$\frac{C_{crayfish}}{SLV_{crayfish}}$ (Subsistence Table M-35)	$\frac{C_{sm\ bass}}{SLV_{sm\ bass}}$ (Subsistence Table M-35)	Multimedia (direct contact) sum(C/SLV_{sw} + C/SLV_{tissue})		
INORGANICS (ug/L)															
Zinc	n	Dissolved	-	7.50	20%	-	-	-	11,000	0.000682	-	0.0149	0.0156	N	C/SLV <1
Aluminum	n	Total	-	141	60%	91.0	123	Y	37,000	0.00381	-	0.000384	0.00420	N	C/SLV <1
Arsenic	c	Total	-	1.01	100%	0.910	1.25	N	0.038	26.6	683	-	709	Y	carc C/SLV >1
Barium	n	Total	-	27.0	100%	21.0	25.6	Y	7,300	0.00370	-	0.433	0.436	N	C/SLV <1
Beryllium	c	Total	-	0.00900	40%	0.00900	0.0210	N	73	0.000123	-	-	0.000123	N	carc C/SLV <1
Cadmium	c	Total	-	0.0190	100%	0.0100	0.0210	N	18	0.00106	-	-	0.00106	N	carc C/SLV <1
Copper	n	Total	-	0.790	100%	0.605	0.830	N	1,500	0.000527	-	0.00294	0.00347	N	C/SLV <1
Lead	n	Total	-	0.175	100%	0.0580	0.203	N	15	0.0117	-	-	0.0117	N	C/SLV <1
Thallium	n	Total	-	0.0330	100%	0.0205	0.0205	Y	2	0.0165	-	-	0.0165	N	C/SLV <1
PCBs (pg/L)															
3,3',4,4'-Tetrachlorobiphenyl	c	C+F	77	0.133	60%	0.0790	0.151	N	5,200	0.0000256	0.114	74.2	74.3	Y	mm C/SLV >1
2,3,3',4,4'-Pentachlorobiphenyl	c	C+F	105	0.540	100%	0.387	0.563	N	5,200	0.000104	0.363	3,548	3,548	Y	mm C/SLV >1
2,3',4,4',5-Pentachlorobiphenyl	c	C+F	118	1.57	100%	1.12	1.77	N	5,200	0.000302	47.6	9,240	9,288	Y	mm C/SLV >1
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	c	C+F	156 + 157 (1)	0.355	100%	0.111	0.145	Y	1,000	0.000355	14.1	1,500	1,514	Y	mm C/SLV >1
2,3',4,4',5,5'-Hexachlorobiphenyl	c	C+F	167	0.158	100%	0.0540	0.0860	Y	52,000	0.00000304	5.96	432	438	Y	mm C/SLV >1
2,3,3',4,4',5,5'-Heptachlorobiphenyl	c	C+F	189	0.0662	20%	-	-	-	5,200	0.0000127	0.328	32.6	32.9	Y	mm C/SLV >1
Total PCBs As Congeners (KM, capped; NDs at MDL)	c	C+F	-	209	100%	130	178	Y	170,000	0.00123	64.0	33,884	33,948	Y	mm C/SLV >1
PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	c	C+F	-	0.0000559	100%	0.0000356	0.0000566	N	0.440	0.000127	153	40,421	40,574	Y	mm C/SLV >1
PAHs (ng/L)															
Acenaphthene	n	C+F	-	1.28	100%	0.888	2.43	N	2,200,000	0.000000581	0.0000107	0.0000713	0.0000826	N	C/SLV <1
Anthracene	n	C+F	-	0.121	100%	0.0832	0.150	N	11,000,000	0.0000000110	0.00000627	0.000785	0.000791	N	C/SLV <1
Benzo(a)anthracene	c	C+F	-	0.0600	60%	0.0491	0.0533	Y	29	0.00207	0.174	2.35	NE	N	carc C/SLV <1
Benzo(b)fluoranthene	c	C+F	-	0.0917	40%	0.0599	0.0669	Y	29	0.00316	0.0891	2.68	NE	N	carc C/SLV <1
Chrysene	c	C+F	-	0.171	100%	0.0843	0.149	Y	2,900	0.0000591	0.000916	0.0179	0.0189	N	carc C/SLV <1
Fluoranthene	n	C+F	-	0.784	100%	0.692	0.783	Y	1,500,000	0.000000523	0.0000213	0.000152	0.000173	N	C/SLV <1
Phenanthrene	n	C+F	-	1.61	100%	1.29	1.59	Y	11,000,000	0.000000146	0.0000384	0.000192	0.000231	N	C/SLV <1
TPH (ug/L)															
Diesel Range Organics	n	Total	-	15.0	40%	13.0	19.0	N	90	0.167	-	-	0.167	N	C/SLV <1
Sum non-carcinogenic C/RBC (HI)										**0.192**					
Sum carcinogenic C/RBC (ELCR)										**2.7E-05**					

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
ATL = acceptable tissue level
C = concentration
c = carcinogen
C+F = column and filter
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
max =maximum
MCL = maximum contaminant level
MDL = method detection limit
min = minimum
mm = multimedia
n = non-carcinogen

Table M-39
Identification of COPCs in Surface Water at Forebay AOPC - Potable Water User
Bradford Island - River Operable Unit
(2 of 2)

NE = Multi-media was not evaluated since the chemical is already identified as a COPC.
ND = non detect
ng/L = nanograms per liter
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
pg/L = picograms per liter
RBC = risk based concentration
RSL = regional screening level
SLV = screening level value
sm bass = smallmouth bass
sw = surface water
TPH = total petroleum hydrocarbon
ug/L = micrograms per Liter
USEPA = United States Environmental Protection Agency

Notes
All detected chemicals are shown in this table. Reporting limits for non-detected chemicals are evaluated separately. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected
Dissolved metals were shown if total metals were non-detect.
Potable Water User hierarchy was developed to determine Screening Levels Values for groundwater; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4
Hierarchy was developed to determine Screening Levels Values for Tissue; 1. Minimum of DEQ HH Bioaccumulative ATLs (human subsistence/tribal) (Appendix J-4f)
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 200
DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
United States Environmental Protection Agency (USEPA) 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May

Footnotes
(1) PCB Congener 157 co-elutes with PCB Congener 156.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum cPAH C/RBC (ELCR) = includes only individual carcinogenic polyaromatic hydrocarbons selected as a COPC
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Total PCBs As Congeners were the only form of PCB that were used in the summatior
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given mediun
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-40
Identification of COPCs in Surface Water at Forebay AOPC - Bioaccumulation Exposure
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	note	Total/ Dissolved	IUPAC #	Max Detected Value	Detection Rate	Reference Area		Higher than Reference Range Y/N?	Selected HH SLV (Table J-4b)	Site concentration(C) / SLV $\frac{C_{sw}}{SLV_{sw}}$ (Bioaccumulation)	Bioaccumulative Potential? (Y/N)	Retain as a COPC, Y/N?	Rationale
						Min Detected Value	Max Detected Value						
INORGANICS (ug/L)													
Zinc	n	Dissolved	-	7.50	20%	-	-	-	7,400	0.00101	Y	N	C/SLV <1
Aluminum	n	Total	-	141	60%	91.0	123	Y	-	-	Y	Y	No SLV
Arsenic	c	Total	-	1.01	100%	0.910	1.25	N	0.018	56.1	Y	Y	carc C/SLV >1
Barium	n	Total	-	27.0	100%	21.0	25.6	Y	1,000	0.0270	N	N	C/SLV <1
Beryllium	c	Total	-	0.00900	40%	0.00900	0.0210	N	-	-	N	N	Not Bioaccumulative
Cadmium	c	Total	-	0.0190	100%	0.0100	0.0210	N	-	-	N	N	Not Bioaccumulative
Copper	n	Total	-	0.790	100%	0.605	0.830	N	1,300	0.000608	N	N	C/SLV <1
Lead	n	Total	-	0.175	100%	0.0580	0.203	N	-	-	Y	Y	No SLV
Thallium	n	Total	-	0.0330	100%	0.0205	0.0205	Y	0.24	0.138	Y	N	C/SLV <1
PCBs (pg/L)													
3,3',4,4'-Tetrachlorobiphenyl	c	C+F	77	0.133	60%	0.0790	0.151	N	-	-	Y	Y	No SLV
2,3,3',4,4'-Pentachlorobiphenyl	c	C+F	105	0.540	100%	0.387	0.563	N	-	-	Y	Y	No SLV
2,3',4,4',5-Pentachlorobiphenyl	c	C+F	118	1.57	100%	1.12	1.77	N	-	-	Y	Y	No SLV
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	c	C+F	156 + 157 (1)	0.355	100%	0.111	0.145	Y	-	-	Y	Y	No SLV
2,3',4,4',5,5'-Hexachlorobiphenyl	c	C+F	167	0.158	100%	0.0540	0.0860	Y	-	-	Y	Y	No SLV
2,3,3',4,4',5,5'-Heptachlorobiphenyl	c	C+F	189	0.0662	20%	-	-	-	-	-	Y	Y	No SLV
Total PCBs As Congeners (KM, capped; NDs at MDL)	c	C+F	-	209	100%	130	178	Y	64	3.26	Y	Y	carc C/SLV >1
PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	c	C+F	-	0.0000559	100%	0.0000356	0.0000566	N	0.005	0.0112	Y	N	carc C/SLV <1 (2)
PAHs (ng/L)													
Acenaphthene	n	C+F	-	1.28	100%	0.888	2.43	N	670,000	0.00000191	Y	N	C/SLV <1
Anthracene	n	C+F	-	0.121	100%	0.0832	0.150	N	8,300,000	0.0000000146	Y	N	C/SLV <1
Benzo(a)anthracene	c	C+F	-	0.0600	60%	0.0491	0.0533	Y	3.8	0.0158	Y	N	carc C/SLV <1
Benzo(b)fluoranthene	c	C+F	-	0.0917	40%	0.0599	0.0669	Y	3.8	0.0241	Y	N	carc C/SLV <1
Chrysene	c	C+F	-	0.171	100%	0.0843	0.149	Y	3.8	0.0451	Y	N	carc C/SLV <1
Fluoranthene	n	C+F	-	0.784	100%	0.692	0.783	Y	130,000	0.00000603	Y	N	C/SLV <1
Phenanthrene	n	C+F	-	1.61	100%	1.29	1.59	Y	8,300,000	0.000000193	Y	N	C/SLV <1
TPH (ug/L)													
Diesel Range Organics	n	Total	-	15.0	40%	13.0	19.0	N	-	-	NA	N	Evaluated as PAHs
Sum non-carcinogenic C/RBC (HI)										**0.166**			
Sum carcinogenic C/RBC (ELCR)										**5.9E-05**			

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
C = concentration
c = carcinogen
C+F = Column + Filter
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
HH = human health

Table M-40
Identification of COPCs in Surface Water at Forebay AOPC - Bioaccumulation Exposure
Bradford Island - River Operable Unit
(2 of 2)

HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{gw}/SLV_{gw} only (i.e. single medium).
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
max =maximum
min = minimum
n = non-carcinogen
ND = non detect
ng/L = nanograms per liter
NRWQC = national recommended water quality criteria
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
pg/L = picograms per liter
SLV = screening level value
sw = surface water
TPH = total petroleum hydrocarbon
ug/L = micrograms per liter
USEPA = United States Environmental Protection Agency
WQC = water quality criteria

Notes
All detected chemicals are shown in this table. Reporting limits for non-detected chemicals are evaluated separately. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected.
Dissolved metals were shown if total metals were non-detect.
Hierarchy was developed to determine Screening Levels Values for Bioaccumulation pathway for groundwater; 1. Min USEPA NRWQC for water + organism and organism only, 2. Min DEQ WQC Table 33A, 3. Min DEQ WQC Table 33B, and 4. Surrogates used as noted in Appendix J-4c
Oregon Department of Environmental Quality (DEQ) 2009. Oregon Administrative Rule (OAR) 340-041. Chapter 340, Division 41: Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon. Tables 33A and 33B. November
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
United States Environmental Protection Agency (USEPA) 2009. National Recommended Water Quality Criteria. United States Office of Water, Environmental Protection Agency, Office of Science and Technology

Footnotes
(1) PCB Congener 157 co-elutes with PCB Congener 156.
(2) An individual dioxin-like congener may not qualify as a COPC based on DEQ's screening methodology. However, all dioxin-like congeners are retained as COPCs since they contribute to Total PCBs as Congeners and TEQs which are selected as COPCs

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.
Sum carcinogenic C/SLV = summation of C/SLV of all carcinogens. Total PCB as Congeners was used in the summation since Dioxin-like Congener C/SLV are not available.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-41
Identification of COPCs in Sediment at Eagle Creek - Direct Contact
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest [2]	note	Max Detected Value	Detection Rate	Reference UPL (Table I-20a)	Site Concentrations Exceed Reference?	Retain as a COPC, Y/N (1,2,3)?	Rationale
PCBs (ug/kg dw)							
Aroclor 1248	c	76.0	50%	1.80 [4]	Y	Y	Detected COI [3]
Total PCBs As Aroclors (NDs at MDL)	c	77.7	50%	1.80 [4]	Y	Y	Detected COI [3]
SVOCs (ug/kg dw)							
Carbazole	c	2.20	50%	1.40 [4]	Y	Y	Detected COI [3]
PAHs (ug/kg dw)							
Anthracene	n	2.60	50%	2.30	Y	Y	Detected COI [3]
Benzo(a)anthracene	c	6.60	50%	10.0	N	Y	Detected COI [3]
Benzo(a)pyrene	c	7.10	50%	11.0	N	Y	Detected COI [3]
Benzo(b)fluoranthene	c	11.0	50%	17.0	N	Y	Detected COI [3]
Benzo(g,h,i)perylene	c	5.00	50%	7.90	N	Y	Detected COI [3]
Benzo(k)fluoranthene	c	3.40	50%	5.00	N	Y	Detected COI [3]
Chrysene	c	13.0	100%	9.80	Y	Y	Detected COI [3]
Fluoranthene	n	11.0	50%	31.0	N	Y	Detected COI [3]
Indeno(1,2,3-cd)pyrene	c	4.60	50%	8.80	N	Y	Detected COI [3]
Phenanthrene	n	6.50	100%	5.90	Y	Y	Detected COI [3]
Pyrene	n	17.0	100%	12.7	Y	Y	Detected COI [3]
TPH (mg/kg dw)							
Diesel Range Organics	n	13.0	100%	31.7	N	Y	Detected COI [3]

This table does not include metals because they were detected below the reference area (Table L-7)
Green highlight = Retained as a COPC
- = Not Evaluated
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
dw = dry weight
HH = human health
max = maximum
MDL = method detection limit
mg/kg = milligrams per kilogram
n = non-carcinogen
ND = non detect
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon

Table M-41
Identification of COPCs in Sediment at Eagle Creek - Direct Contact
Bradford Island - River Operable Unit
(2 of 2)

ug/kg = micrograms per kilogram
UPL = 95% upper prediction limit

Notes
Only detected chemicals are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.

Footnotes
(1) COPCs from Eagle Creek Sediment will be retained for evaluation of direct contact with sediment for waders.
(2) All Inorganics are lower than reference area and are eliminated as COPCs.
(3) All detected organic COIs are retained as COPCs.
(4) For analytes with no detections (0% detection rate), the maximum method detection limit (MDL) was assessed as the non-parametric UPL.

COPC Selection
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if -inorganic site concentration exceeds reference, and all detected organic compounds.

Table M-42
Identification of COPCs in Tissue at Goose Island - Subsistence Fisher
Bradford Island - River Operable Unit
(1 of 2)

Medium	Chemicals of Interest	note	IUPAC #	Max Detected Value	Detection Rate	Selected HH SLV (Table J-4f)	Site concentration(C) / SLV $\frac{C_{tissue}}{SLV_{tissue}}$	Retain as a COPC, Y/N?	Rationale
INORGANICS (mg/kg ww)									
Tissue - Crayfish	Mercury	n	-	0.0359	100%	0.049	0.733	N	C/SLV <1
PCBs (ug/kg ww)									
Tissue - Crayfish	3,3',4,4'-Tetrachlorobiphenyl	c	77	0.00226	100%	0.076	0.0297	N	carc C/SLV <1 (2)
Tissue - Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	c	105	0.00624	100%	0.25	0.0250	N	carc C/SLV <1 (2)
Tissue - Crayfish	2,3,4,4',5-Pentachlorobiphenyl	c	114	0.00235	100%	0.25	0.00940	N	carc C/SLV <1 (2)
Tissue - Crayfish	2,3',4,4',5-Pentachlorobiphenyl	c	118	0.0870	100%	0.25	0.348	N	carc C/SLV <1 (2)
Tissue - Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	c	123	0.00256	100%	0.25	0.0102	N	carc C/SLV <1 (2)
Tissue - Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	c	156 + 157 (1)	0.0133	100%	0.25	0.0532	N	carc C/SLV <1 (2)
Tissue - Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	c	167	0.0112	100%	0.25	0.0448	N	carc C/SLV <1 (2)
Tissue - Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	c	189	0.000662	100%	0.25	0.00265	N	carc C/SLV <1 (2)
Tissue - Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	c	-	0.587	100%	0.57	1.03	Y	carc C/SLV >1
Tissue - Crayfish	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	c	-	0.00000482	100%	0.0000076	0.634	N	carc C/SLV <1 (2)
PAHs (ug/kg ww)									
Tissue - Crayfish	Anthracene	n	-	0.430	100%	15,000	0.0000287	N	C/SLV <1
Tissue - Crayfish	Benzo(b)fluoranthene	c	-	0.150	100%	1.57 (3)	0.0955	N	C/SLV <1
Tissue - Crayfish	Benzo(g,h,i)perylene	c	-	0.110	100%	16 (3)	0.00700	N	C/SLV <1
Tissue - Crayfish	Benzo(k)fluoranthene	c	-	0.110	100%	16 (3)	0.00700	N	C/SLV <1
Tissue - Crayfish	Fluorene	n	-	0.510	100%	15,000	0.0000340	N	C/SLV <1
Tissue - Crayfish	Indeno(1,2,3-cd)pyrene	c	-	0.150	100%	1.57 (3)	0.0955	N	C/SLV <1
Tissue - Crayfish	Phenanthrene	n	-	0.820	100%	15,000	0.0000547	N	C/SLV <1
Sum non-carcinogenic C/RBC (HI)							0.733		
Sum carcinogenic C/RBC (ELCR)							1.2E-06		

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
ATL = acceptable tissue level
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{tissue}/SLV_{tissue} only (i.e. single medium).
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{tissue}/SLV_{tissue} only (i.e. single medium).
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
max =maximum

Table M-42
Identification of COPCs in Tissue at Goose Island - Subsistence Fisher
Bradford Island - River Operable Unit
(2 of 2)

mg/kg = milligrams per kilogram
n = non-carcinogen
PAHs = polyaromatic hydrocarbons
PCBs =polychlorinated biphenyls
SLV = screening level value
ug/kg = micrograms per kilogram
ww = wet weight

Notes
Only detected chemicals -are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Hierarchy was developed to determine Screening Levels Values for Tissue; 1. Minimum of DEQ HH Bioaccumulative ATLs (human subsistence/tribal) (Appendix J-4f).
Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.

Footnotes
(1) PCB Congener 157 co-elutes with PCB Congener 156.

(2) An individual dioxin-like congener may not qualify as a COPC based on DEQ's screening methodology. However, all dioxin-like congeners are retained as COPCs since they contribute to Total PCBs as Congeners and TEQs which are selected as COPCs.
(3) SLVs were calculated ATLs using DEQ Methodology (DEQ 2007); see Appendix J-2.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Total PCBs As Congeners were the only form of PCB that were used in the summation.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if -inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-43
Identification of COPCs in Sediment at Goose Island - Subsistence Fisher
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	note	IUPAC #	Max Detected Value	Detection Rate (1)	Selected HH SLV (Table J-4e)	Site concentration(C) / SLV $\frac{C_{sed}}{SLV_{sed}}$	Bioaccumulative Potential? (Y/N) (Table J-6)	Retain as a COPC, Y/N?	Rationale
INORGANICS (mg/kg dw)									
Barium	n	-	131	100%	Sed ≤ to Reference Area (see Table L-7)		N	N	≤ Reference UPL
Mercury	n	-	0.181	100%	Sed ≤ to Reference Area (see Table L-7)		Y	N	≤ Reference UPL
PCBs (ug/kg dw)									
Aroclor 1254	c	-	9.90	50%	0.048	206	Y	Y	carc C/SLV >1
Total PCBs As Aroclors (NDs at MDL)	c	-	12.6	50%	0.048	263	Y	Y	carc C/SLV >1
3,3',4,4'-Tetrachlorobiphenyl	c	77	0.00353	100%	0.0064	0.552	Y	N	carc C/SLV <1 (2)
3,4,4',5-Tetrachlorobiphenyl	c	81	0.000135	50%	0.0021	0.0643	Y	N	carc C/SLV <1 (2)
2,3,3',4,4'-Pentachlorobiphenyl	c	105	0.0277	100%	0.021	1.32	Y	Y	carc C/SLV >1
2,3,4,4',5-Pentachlorobiphenyl	c	114	0.00137	100%	0.021	0.0652	Y	N	carc C/SLV <1 (2)
2,3',4,4',5-Pentachlorobiphenyl	c	118	0.0695	100%	0.026	2.67	Y	Y	carc C/SLV >1
2,3',4,4',5'-Pentachlorobiphenyl	c	123	0.000963	50%	0.026	0.0370	Y	N	carc C/SLV <1 (2)
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	c	156 + 157 (3)	0.0104	100%	0.026	0.400	Y	N	carc C/SLV <1 (2)
2,3',4,4',5,5'-Hexachlorobiphenyl	c	167	0.00402	100%	0.026	0.155	Y	N	carc C/SLV <1 (2)
2,3,3',4,4',5,5'-Heptachlorobiphenyl	c	189	0.000869	100%	0.14	0.00621	Y	N	carc C/SLV <1 (2)
Total PCBs As Congeners (KM, capped; NDs at MDL)	c	-	1.34	100%	0.048	27.9	Y	Y	carc C/SLV >1
PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	c	-	0.00000467	100%	0.0000011	4.24	Y	Y	carc C/SLV >1
SVOCs (ug/kg dw)									
Bis(2-ethylhexyl) Phthalate	c	-	13.0	100%	-	-	Y	Y	No SLV
PAHs (ug/kg dw)									
Benzo(a)anthracene	c	-	7.80	100%	47,000 (4)	0.000166	Y	N	carc C/SLV <1
Benzo(a)pyrene	c	-	13.0	100%	47,000 (4)	0.000277	Y	N	carc C/SLV <1
Benzo(b)fluoranthene	c	-	15.0	100%	47,000 (4)	0.000319	Y	N	carc C/SLV <1
Indeno(1,2,3-cd)pyrene	c	-	7.10	100%	47,000 (4)	0.000151	Y	N	carc C/SLV <1
Sum non-carcinogenic C/RBC (HI)						-			
Sum carcinogenic C/RBC (ELCR)						2.8E-05			

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
C = concentration
c = carcinogen
COPC = chemical of potential concern
dw = dry weight

Table M-43
Identification of COPCs in Sediment at Goose Island - Subsistence Fisher
Bradford Island - River Operable Unit
(2 of 2)

ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{sed}/SLV_{sed} only (i.e. single medium).
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{sed}/SLV_{sed} only (i.e. single medium).
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
max =maximum
mg/kg = milligrams per kilogram
n = non-carcinogen
NA = not applicable
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
sed = sediment
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UPL = 95% upper prediction limit

Notes

Only detected chemicals selected as a Goose Island-Crayfish Tissue COPC or Forebay-Smallmouth Bass Tissue COPC are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Sum non-carcinogenic is not calculated because there are no non-carcinogenic Chemicals of Interest.
Hierarchy was developed to determine Screening Levels Values for Sediment; 1. DEQ HH Subsistence Bioaccumulative SLVs and 2. Surrogates used as noted in Appendix J-4e.
Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.

Footnotes

(1) Sample size was less than 20 so detection frequency was not taken into consideration for COPC selection.
(2) An individual dioxin-like congener may not qualify as a COPC based on DEQ's screening methodology. However, all dioxin-like congeners are retained as COPCs since they contribute to Total PCBs as Congeners and TEQs which are selected as COPCs.
(3) PCB Congener 157 co-elutes with PCB Congener 156.
(4) Non-cancer based sediment SLVs may not be adequately protective of cancer endpoint.

COPC Selection

C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Total PCBs As Congeners were the only form of PCB that were used in the summation.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if-inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-44
Identification of COPCs in Tissue at Goose Island - Recreational Fisher
Bradford Island - River Operable Unit
(1 of 2)

Medium	Chemicals of Interest	note	IUPAC #	Max Detected Value	Detection Rate	Selected HH SLV (Table J-4f)	Site concentration(C) / SLV $\frac{C_{tissue}}{SLV_{tissue}}$	Retain as a COPC, Y/N?	Rationale
INORGANICS (mg/kg ww)									
Tissue - Crayfish	Mercury	n	-	0.0359	100%	0.4	0.0898	N	C/SLV <1
PCBs (ug/kg ww)									
Tissue - Crayfish	3,3',4,4'-Tetrachlorobiphenyl	c	77	0.00226	100%	0.62	0.00365	N	carc C/SLV <1 (1)
Tissue - Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	c	105	0.00624	100%	2.1	0.00297	N	carc C/SLV <1 (1)
Tissue - Crayfish	2,3,4,4',5-Pentachlorobiphenyl	c	114	0.00235	100%	2.1	0.00112	N	carc C/SLV <1 (1)
Tissue - Crayfish	2,3',4,4',5-Pentachlorobiphenyl	c	118	0.0870	100%	2.1	0.0414	N	carc C/SLV <1 (1)
Tissue - Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	c	123	0.00256	100%	2.1	0.00122	N	carc C/SLV <1 (1)
Tissue - Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	c	156 + 157 (2)	0.0133	100%	2.1	0.00633	N	carc C/SLV <1 (1)
Tissue - Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	c	167	0.0112	100%	2.1	0.00533	N	carc C/SLV <1 (1)
Tissue - Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	c	189	0.000662	100%	2.1	0.000315	N	carc C/SLV <1 (1)
Tissue - Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	c	-	0.587	100%	4.7	0.125	N	carc C/SLV <1 (1)
Tissue - Crayfish	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	c	-	0.00000482	100%	0.000062	0.0778	N	carc C/SLV <1 (1)
PAHs (ug/kg ww)									
Tissue - Crayfish	Anthracene	n	-	0.430	100%	120,000	0.00000358	N	C/SLV <1
Tissue - Crayfish	Benzo(b)fluoranthene	c	-	0.150	100%	12.8 (3)	0.0117	N	carc C/SLV <1
Tissue - Crayfish	Benzo(g,h,i)perylene	c	-	0.110	100%	128 (3)	0.000860	N	carc C/SLV <1
Tissue - Crayfish	Benzo(k)fluoranthene	c	-	0.110	100%	128 (3)	0.000860	N	carc C/SLV <1
Tissue - Crayfish	Fluorene	n	-	0.510	100%	120,000	0.00000425	N	C/SLV <1
Tissue - Crayfish	Indeno(1,2,3-cd)pyrene	c	-	0.150	100%	12.8 (3)	0.0117	N	carc C/SLV <1
Tissue - Crayfish	Phenanthrene	n	-	0.820	100%	120,000	0.00000683	N	C/SLV <1
Sum non-carcinogenic C/RBC (HI)							0.0898		
Sum carcinogenic C/RBC (ELCR)							1.5E-07		

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
ATL = acceptable tissue level
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{tissue}/SLV_{tissue} only (i.e. single medium).
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{tissue}/SLV_{tissue} only (i.e. single medium).
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
max =maximum

Table M-44
Identification of COPCs in Tissue at Goose Island - Recreational Fisher
Bradford Island - River Operable Unit
(2 of 2)

mg/kg = milligrams per kilogram
n = non-carcinogen
PAHs = polyaromatic hydrocarbons
PCBs =polychlorinated biphenyls
SLV = screening level value
ug/kg = micrograms per kilogram
ww = wet weight

Notes
Only detected chemicals are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Hierarchy was developed to determine Screening Levels Values for Tissue; 1. Minimum of DEQ HH Bioaccumulative ATLs (human general/recreational) (Appendix J-4f).
Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.

Footnotes

(1) An individual dioxin-like congener may not qualify as a COPC based on DEQ's screening methodology. However, all dioxin-like congeners are retained as COPCs since they contribute to Total PCBs as Congeners and TEQs which are selected as COPCs.
(2) PCB Congener 157 co-elutes with PCB Congener 156.
(3) SLVs were calculated ATLs using DEQ Methodology (DEQ 2007); see Appendix J-2.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Total PCBs As Congeners were the only form of PCB that were used in the summation.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-45
Identification of COPCs in Sediment at Goose Island - Recreational Fisher
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	note	IUPAC #	Max Detected Value	Detection Rate (1)	Selected HH SLV (Table J-4e)	Site concentration(C) / SLV $\frac{C_{sed}}{SLV_{sed}}$	Bioaccumulative Potential? (Y/N) (Table J-6)	Retain as a COPC, Y/N?	Rationale
INORGANICS (mg/kg dw)									
Barium	n	-	131	100%	Sed ≤ to Reference Area (see Table L-7)		N	N	≤ Reference UPL
Mercury	n	-	0.181	100%	Sed ≤ to Reference Area (see Table L-7)		Y	N	≤ Reference UPL
PCBs (ug/kg dw)									
Aroclor 1254	c	-	9.90	50%	0.39	25.4	Y	Y	carc C/SLV >1 (2)
Total PCBs As Aroclors (NDs at MDL)	c	-	12.6	50%	0.39	32.3	Y	Y	carc C/SLV >1 (2)
3,3',4,4'-Tetrachlorobiphenyl	c	77	0.00353	100%	0.052	0.0679	Y	N	carc C/SLV <1 (2)
3,4,4',5-Tetrachlorobiphenyl	c	81	0.000135	50%	0.017	0.00794	Y	N	carc C/SLV <1 (2)
2,3,3',4,4'-Pentachlorobiphenyl	c	105	0.0277	100%	0.17	0.163	Y	N	carc C/SLV <1 (2)
2,3,4,4',5-Pentachlorobiphenyl	c	114	0.00137	100%	0.17	0.00806	Y	N	carc C/SLV <1 (2)
2,3',4,4',5-Pentachlorobiphenyl	c	118	0.0695	100%	0.12	0.579	Y	N	carc C/SLV <1 (2)
2,3',4,4',5'-Pentachlorobiphenyl	c	123	0.000963	50%	0.21	0.00459	Y	N	carc C/SLV <1 (2)
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	c	156 + 157 (3)	0.0104	100%	0.21	0.0495	Y	N	carc C/SLV <1 (2)
2,3',4,4',5,5'-Hexachlorobiphenyl	c	167	0.00402	100%	0.21	0.0191	Y	N	carc C/SLV <1 (2)
2,3,3',4,4',5,5'-Heptachlorobiphenyl	c	189	0.000869	100%	1.2	0.000724	Y	N	carc C/SLV <1 (2)
Total PCBs As Congeners (KM, capped; NDs at MDL)	c	-	1.34	100%	0.39	3.44	Y	Y	carc C/SLV >1 (2)
PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	c	-	0.00000467	100%	0.0000091	0.513	N	N	carc C/SLV <1 (2)
PAHs (ug/kg dw)									
Benzo(a)pyrene	c	-	13.0	100%	380,000 (4)	0.0000342	Y	N	carc C/SLV <1
Sum non-carcinogenic C/RBC (HI)						-			
Sum carcinogenic C/RBC (ELCR)						3.4E-06			

Green highlight = Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
C = concentration
c = carcinogen
COPC = chemical of potential concern
dw = dry weight
ELCR = excess lifetime cancer risk = screening level estimate of carcinogenic risk based on C_{sed}/SLV_{sed} only (i.e. single medium).
HH = human health
HI = hazard index = screening level estimate of non-carcinogenic risk based on C_{sed}/SLV_{sed} only (i.e. single medium).
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
max =maximum
mg/kg = milligrams per kilogram

Table M-45
Identification of COPCs in Sediment at Goose Island - Recreational Fisher
Bradford Island - River Operable Unit
(2 of 2)

n = non-carcinogen
NA = not applicable
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
sed = sediment
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UPL = 95% upper prediction limit

Notes
Only detected chemicals selected as a Goose Island-Crayfish Tissue COPC or Forebay-Smallmouth Bass Tissue COPC are shown in this table. Reporting limits for non-detected chemicals are evaluated separately.
Sum non-carcinogenic is not calculated because there are no non-carcinogenic Chemicals of Interest.
Hierarchy was developed to determine Screening Levels Values for Sediment; 1. DEQ HH General/Recreational Bioaccumulative SLVs and 2. Surrogates used as noted in Appendix J-4e.
Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.

Footnotes
(1) Sample size was less than 20 so detection frequency was not taken into consideration for COPC selection.
(2) An individual dioxin-like congener may not qualify as a COPC based on DEQ's screening methodology. However, all dioxin-like congeners are retained as COPCs since they contribute to Total PCBs as Congeners and TEQs which are selected as COPCs.
(3) PCB Congener 157 co-elutes with PCB Congener 156.
(4) Non-cancer based sediment SLVs may not be adequately protective of cancer endpoint.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens
Sum carcinogenic C/SLV (ELCR) = summation of C/SLV of all carcinogens. Total PCBs As Congeners were the only form of PCB that were used in the summation.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if-inorganic site concentration exceeds reference and one of the following conditions:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium

For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table M-46
Summary of COPCs - Forebay AOPC
Bradford Island - River Operable Unit
(1 of 3)

Media	Receptor	HI	ELCR	COPCs
Random Forebay Tissue - Crayfish	Subsistence Fisher	0.672	7.5E-04	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl 2,3',4,4',5,5'-Hexachlorobiphenyl 2,3',4,4',5'-Pentachlorobiphenyl 2,3,4,4',5-Pentachlorobiphenyl 2,3',4,4',5-Pentachlorobiphenyl 3,3',4,4',5-Pentachlorobiphenyl Arsenic Total PCBs As Congeners (KM, capped; NDs at MDL) Total PCBs As Mammalian TEQ (KM, capped; NDs at MDL)
Random Forebay Tissue - Smallmouth Bass	Subsistence Fisher	6.92	3.4E-02	2,3,3',4,4',5,5'-Heptachlorobiphenyl **2,3,3',4,4',5-Hexachlorobiphenyl +** **2,3,3',4,4',5'-Hexachlorobiphenyl** **2,3,3',4,4'-Pentachlorobiphenyl** 2,3',4,4',5,5'-Hexachlorobiphenyl **2,3',4,4',5'-Pentachlorobiphenyl** 2,3,4,4',5-Pentachlorobiphenyl 2,3',4,4',5-Pentachlorobiphenyl **3,3',4,4',5-Pentachlorobiphenyl** 3,3',4,4'-Tetrachlorobiphenyl 3,4,4',5-Tetrachlorobiphenyl Aroclor 1242 **Aroclor 1254** **Barium** Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Bis(2-ethylhexyl) Phthalate Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene Mercury [#] **Total PCBs As Aroclors** **(NDs at MDL)** **Total PCBs As Congeners** **(KM, capped; NDs at MDL)** **Total PCBs As Mammalian TEQ** **(KM, capped; NDs at MDL)**
Random Forebay Sediment	Subsistence Fisher	-	7.5E-05	2,3,3',4,4',5,5'-Heptachlorobiphenyl 2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl 2,3,3',4,4'-Pentachlorobiphenyl 2,3',4,4',5,5'-Hexachlorobiphenyl 2,3',4,4',5'-Pentachlorobiphenyl 2,3,4,4',5-Pentachlorobiphenyl 2,3',4,4',5-Pentachlorobiphenyl 3,3',4,4',5-Pentachlorobiphenyl Aroclor 1254 Bis(2-ethylhexyl) Phthalate Total PCBs As Aroclors (NDs at MDL) Total PCBs As Congeners (KM, capped; NDs at MDL) Total PCBs As Mammalian TEQ (KM, capped; NDs at MDL)

Table M-46
Summary of COPCs - Forebay AOPC
Bradford Island - River Operable Unit
(2 of 3)

Media	Receptor	HI	ELCR	COPCs
Random Forebay Tissue - Crayfish	Recreational Fisher	0.0829	9.2E-05	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl 2,3,3',4,4',5,5'-Heptachlorobiphenyl 2,3,3',4,4'-Pentachlorobiphenyl 2,3',4,4',5,5'-Hexachlorobiphenyl 2,3,4,4',5-Pentachlorobiphenyl 2,3',4,4',5'-Pentachlorobiphenyl 2,3',4,4',5-Pentachlorobiphenyl 3,3',4,4',5-Pentachlorobiphenyl 3,3',4,4'-Tetrachlorobiphenyl 3,4,4',5-Tetrachlorobiphenyl Arsenic Total PCBs As Congeners (KM, capped; NDs at MDL) Total PCBs As Mammalian TEQ (KM, capped; NDs at MDL)
Random Forebay Tissue - Smallmouth Bass	Recreational Fisher	1.24	4.1E-03	2,3,3',4,4',5,5'-Heptachlorobiphenyl 2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl 2,3,3',4,4'-Pentachlorobiphenyl 2,3',4,4',5,5'-Hexachlorobiphenyl **2,3',4,4',5'-Pentachlorobiphenyl** 2,3,4,4',5-Pentachlorobiphenyl 2,3',4,4',5-Pentachlorobiphenyl **3,3',4,4',5-Pentachlorobiphenyl** 3,3',4,4'-Tetrachlorobiphenyl 3,4,4',5-Tetrachlorobiphenyl Aroclor 1242 Aroclor 1254 Barium # Benzo(a)pyrene Dibenz(a,h)anthracene Mercury # Total PCBs As Aroclors (NDs at MDL) **Total PCBs As Congeners** **(KM, capped; NDs at MDL)** **Total PCBs As Mammalian TEQ** **(KM, capped; NDs at MDL)**
Random Forebay Sediment	Recreational Fisher	-	9.2E-06	2,3,3',4,4',5,5'-Heptachlorobiphenyl 2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl 2,3,3',4,4'-Pentachlorobiphenyl 2,3',4,4',5,5'-Hexachlorobiphenyl 2,3',4,4',5'-Pentachlorobiphenyl 2,3,4,4',5-Pentachlorobiphenyl 2,3',4,4',5-Pentachlorobiphenyl 3,3',4,4',5-Pentachlorobiphenyl 3,3',4,4'-Tetrachlorobiphenyl Aroclor 1254 Total PCBs As Aroclors (NDs at MDL) Total PCBs As Congeners (KM, capped; NDs at MDL) Total PCBs As Mammalian TEQ (KM, capped; NDs at MDL)

Table M-46
Summary of COPCs - Forebay AOPC
Bradford Island - River Operable Unit
(3 of 3)

Media	Receptor	HI	ELCR	COPCs
Forebay Surface Water	Potable Water User	0.192	2.7E-05	2,3,3',4,4',5,5'-Heptachlorobiphenyl 2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl 2,3,3',4,4'-Pentachlorobiphenyl 2,3',4,4',5,5'-Hexachlorobiphenyl 2,3',4,4',5-Pentachlorobiphenyl 3,3',4,4'-Tetrachlorobiphenyl Arsenic Total PCBs As Congeners (KM, capped; NDs at MDL) Total PCBs As Mammalian TEQ (KM, capped; NDs at MDL)
	Bioaccumulation	NE	NE	2,3,3',4,4',5,5'-Heptachlorobiphenyl 2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl 2,3,3',4,4'-Pentachlorobiphenyl 2,3',4,4',5,5'-Hexachlorobiphenyl 2,3',4,4',5-Pentachlorobiphenyl 3,3',4,4'-Tetrachlorobiphenyl Aluminum Arsenic Lead Total PCBs As Congeners (KM, capped; NDs at MDL) Total PCBs As Mammalian TEQ (KM, capped; NDs at MDL)
Eagle Creek Sediment	Wader	NE	NE	Anthracene # Aroclor 1248 Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Carbazole Chrysene Diesel Range Organics # Fluoranthene # Indeno(1,2,3-cd)pyrene Phenanthrene # Pyrene # Total PCBs As Aroclors (NDs at MDL)
Goose Island Tissue - Crayfish	Subsistence Fisher	NE	NE	Total PCBs As Congeners (KM, capped; NDs at MDL)
Goose Island Sediment	Subsistence Fisher	NE	NE	2,3,3',4,4'-Pentachlorobiphenyl 2,3',4,4',5-Pentachlorobiphenyl Aroclor 1254 Bis(2-ethylhexyl) Phthalate Total PCBs As Aroclors (NDs at MDL) Total PCBs As Congeners (KM, capped; NDs at MDL) Total PCBs As Mammalian TEQ (KM, capped; NDs at MDL)
Goose Island Tissue - Crayfish	Recreational Fisher	NE	NE	None
Goose Island Sediment	Recreational Fisher	NE	NE	Aroclor 1254 Total PCBs As Aroclors (NDs at MDL) Total PCBs As Congeners (KM, capped; NDs at MDL)

Bold = COPCs with ELCR >1E-04 or HQ >10
-- = no data
= non-carcinogenic COPC
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV.
COPC = chemicals of potential concern
ELCR = excess lifetime cancer risk based on Sum of C/SLV x 1E-06 for carcinogenic COPCs
HI = hazard index based on Sum of C/SLV for non-carcinogenic COPCs
HQ = hazard quotient
NE = Cumulative HI and ELCR not evaluated. These pathways were evaluated only to see if additional COPCs were identified for River OU.
PCBs = polychlorinated biphenyls

APPENDIX N
ECOLOGICAL RISK SCREENING ASSESSMENT

Table N-1
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(1 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)							
Antimony	0-1 ft	4.20	5	0.840	No	No	No
Cadmium	0-1 ft	2.09	32	0.0653	No	No	No
Lead	0-1 ft	741	120	6.18	Yes	Yes	**Yes**
Mercury	0-1 ft	4.15	0.3	13.8	Yes	Yes	**Yes**
Silver	0-1 ft	1.50	560	0.00268	No	No	No
Zinc	0-1 ft	635	160	3.97	Yes	No	**Yes**
Antimony	0-3 ft	4.20	5	0.840	No	No	No
Arsenic	0-3 ft	30.1	18	1.67	Yes	No	**Yes**
Cadmium	0-3 ft	3.54	32	0.111	No	No	No
Lead	0-3 ft	1,660	120	13.8	Yes	Yes	**Yes**
Mercury	0-3 ft	4.15	0.3	13.8	Yes	Yes	**Yes**
Silver	0-3 ft	1.50	560	0.00268	No	No	No
Zinc	0-3 ft	1,140	160	7.13	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)							
Dibutyltin	0-1 ft	20.2	NA	- -	- -	- -	Yes - No SLV
Monobutyltin	0-1 ft	38.0	NA	- -	- -	- -	Yes - No SLV
Tributyltin	0-1 ft	165	NA	- -	- -	- -	Yes - No SLV
Dibutyltin	0-3 ft	20.2	NA	- -	- -	- -	Yes - No SLV
Monobutyltin	0-3 ft	38.0	NA	- -	- -	- -	Yes - No SLV
Tributyltin	0-3 ft	165	NA	- -	- -	- -	Yes - No SLV
PESTICIDES (ug/kg)							
4,4'-DDT	0-1 ft	28.0	NA	- -	- -	- -	Yes - No SLV
Total DDTs	0-1 ft	29.9	NA	- -	- -	- -	Yes - No SLV
Chlordane (technical)	0-1 ft	1,560	NA	- -	- -	- -	Yes - No SLV
4,4'-DDT	0-3 ft	28.0	NA	- -	- -	- -	Yes - No SLV
Total DDTs	0-3 ft	29.9	NA	- -	- -	- -	Yes - No SLV
Chlordane (technical)	0-3 ft	1,560	NA	- -	- -	- -	Yes - No SLV
Heptachlor	0-3 ft	3.07	1,000	0.00307	No	No	No

Table N-1
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(2 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
PCBs (ug/kg)							
Aroclor 1248	0-1 ft	968	40,000	0.0242	No	No	No
Aroclor 1254	0-1 ft	78.6	40,000	0.00197	No	No	No
Aroclor 1260	0-1 ft	660	40,000	0.0165	No	No	No
Total PCBs (Aroclors)	0-1 ft	996	40,000	0.0249	No	No	No
Aroclor 1248	0-3 ft	968	40,000	0.0242	No	No	No
Aroclor 1254	0-3 ft	86.1	40,000	0.00215	No	No	No
Aroclor 1260	0-3 ft	660	40,000	0.0165	No	No	No
Total PCBs (Aroclors)	0-3 ft	996	40,000	0.0249	No	No	No
HERBICIDES (ug/kg)							
2,4,5-T	0-1 ft	93.0	NA	- -	- -	- -	Yes - No SLV
Dichloroprop	0-1 ft	180	NA	- -	- -	- -	Yes - No SLV
MCPP	0-1 ft	14,000	NA	- -	- -	- -	Yes - No SLV
2,4,5-T	0-3 ft	93.0	NA	- -	- -	- -	Yes - No SLV
Dichloroprop	0-3 ft	180	NA	- -	- -	- -	Yes - No SLV
MCPP	0-3 ft	14,000	NA	- -	- -	- -	Yes - No SLV
VOCs (ug/kg)							
1,2,4-Trimethylbenzene	0-1 ft	14,300	200,000	0.0715	No	No	No
1,3,5-Trimethylbenzene	0-1 ft	5,410	200,000	0.0271	No	No	No
Dichloromethane (Methylene Chloride)	0-1 ft	1,000	NA	- -	- -	- -	Yes - No SLV
Ethylbenzene	0-1 ft	2,700	NA	- -	- -	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	9,800	NA	- -	- -	- -	Yes - No SLV
Naphthalene	0-1 ft	8,360	10,000	0.836	No	No	No
Tetrachloroethene (PCE)	0-1 ft	65.0	10,000	0.00650	No	No	No
Toluene	0-1 ft	5.30	200,000	0.0000265	No	No	No
1,2,4-Trimethylbenzene	0-3 ft	14,300	200,000	0.0715	No	No	No
1,3,5-Trimethylbenzene	0-3 ft	5,410	200,000	0.0271	No	No	No
Dichloromethane (Methylene Chloride)	0-3 ft	1,000	NA	- -	- -	- -	Yes - No SLV
Naphthalene	0-3 ft	8,360	10,000	0.836	No	No	No
Tetrachloroethene (PCE)	0-3 ft	65.0	10,000	0.00650	No	No	No

Table N-1
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(3 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Toluene	0-3 ft	5.30	200,000	0.0000265	No	No	No
SVOCs (ug/kg)							
Benzoic Acid	0-1 ft	553	200,000	0.00277	No	No	No
Bis(2-ethylhexyl) Phthalate	0-1 ft	21,000	NA	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-1 ft	68.7	200,000	0.000344	No	No	No
Carbazole	0-1 ft	2,650	NA	- -	- -	- -	Yes - No SLV
Dibenzofuran	0-1 ft	810	NA	- -	- -	- -	Yes - No SLV
Diethyl Phthalate	0-1 ft	73.4	100,000	0.000734	No	No	No
Di-n-butyl Phthalate	0-1 ft	1,800	200,000	0.00900	No	No	No
Pentachlorophenol	0-1 ft	201	5,000	0.0402	No	No	No
Benzoic Acid	0-3 ft	553	200,000	0.00277	No	No	No
Bis(2-ethylhexyl) Phthalate	0-3 ft	21,000	NA	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-3 ft	68.7	200,000	0.000344	No	No	No
Carbazole	0-3 ft	2,840	NA	- -	- -	- -	Yes - No SLV
Dibenzofuran	0-3 ft	810	NA	- -	- -	- -	Yes - No SLV
Diethyl Phthalate	0-3 ft	73.4	100,000	0.000734	No	No	No
Di-n-butyl Phthalate	0-3 ft	1,800	200,000	0.00900	No	No	No
Pentachlorophenol	0-3 ft	201	5,000	0.0402	No	No	No
PAHs (ug/kg)							
2-Methylnaphthalene	0-1 ft	1,530	NA (6)	0.153	No	No	No
Acenaphthene	0-1 ft	2,600	20,000	0.130	No	No	No
Acenaphthylene	0-1 ft	78.1	NA (6)	0.00781	No	No	No
Anthracene	0-1 ft	2,700	NA (6)	0.270	No	No	No
Fluorene	0-1 ft	1,200	NA (6)	0.120	No	No	No
Naphthalene	0-1 ft	823	10,000	0.0823	No	No	No
Phenanthrene	0-1 ft	12,000	NA (6)	1.20	Yes	No	**Yes**
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	18,674	NA (6)	1.87	Yes	No	**Yes**
Benzo(a)anthracene	0-1 ft	32,000	1,200	26.7	Yes	Yes	**Yes**
Benzo(a)pyrene	0-1 ft	33,000	1,200	27.5	Yes	Yes	**Yes**

Table N-1
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(4 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Benzo(b)fluoranthene	0-1 ft	65,000	1,200	54.2	Yes	Yes	**Yes**
Benzo(g,h,i)perylene	0-1 ft	18,000	NA (7)	15.0	Yes	Yes	**Yes**
Benzo(k)fluoranthene	0-1 ft	65,000	1,200	54.2	Yes	Yes	**Yes**
Benzofluoranthenes, Total	0-1 ft	14,700	NA (7)	12.3	Yes	Yes	**Yes**
Chrysene	0-1 ft	32,000	1,200	26.7	Yes	Yes	**Yes**
Dibenz(a,h)anthracene	0-1 ft	9,900	1,200	8.25	Yes	Yes	**Yes**
Fluoranthene	0-1 ft	54,000	NA (7)	45.0	Yes	Yes	**Yes**
Indeno(1,2,3-cd)pyrene	0-1 ft	19,000	1,200	15.8	Yes	Yes	**Yes**
Pyrene	0-1 ft	40,000	NA (7)	33.3	Yes	Yes	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	367,900	1,200	307	Yes	Yes	**Yes**
2-Methylnaphthalene	0-3 ft	1,530	NA (6)	0.153	No	No	No
Acenaphthene	0-3 ft	2,600	20,000	0.130	No	No	No
Acenaphthylene	0-3 ft	111	NA (6)	0.0111	No	No	No
Anthracene	0-3 ft	8,440	NA (6)	0.844	No	No	No
Fluorene	0-3 ft	1,610	NA (6)	0.161	No	No	No
Naphthalene	0-3 ft	823	10,000	0.0823	No	No	No
Phenanthrene	0-3 ft	21,900	NA (6)	2.19	Yes	No	**Yes**
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	34,767	NA (6)	3.48	Yes	No	**Yes**
Benzo(a)anthracene	0-3 ft	32,000	1,200	26.7	Yes	Yes	**Yes**
Benzo(a)pyrene	0-3 ft	34,000	1,200	28.3	Yes	Yes	**Yes**
Benzo(b)fluoranthene	0-3 ft	65,000	1,200	54.2	Yes	Yes	**Yes**
Benzo(g,h,i)perylene	0-3 ft	18,000	NA (7)	15.0	Yes	Yes	**Yes**
Benzo(k)fluoranthene	0-3 ft	65,000	1,200	54.2	Yes	Yes	**Yes**
Benzofluoranthenes, Total	0-3 ft	31,300	NA (7)	26.1	Yes	Yes	**Yes**
Chrysene	0-3 ft	35,300	1,200	29.4	Yes	Yes	**Yes**
Dibenz(a,h)anthracene	0-3 ft	9,900	1,200	8.25	Yes	Yes	**Yes**
Fluoranthene	0-3 ft	54,000	NA (7)	45.0	Yes	Yes	**Yes**
Indeno(1,2,3-cd)pyrene	0-3 ft	20,000	1,200	16.7	Yes	Yes	**Yes**

Table N-1
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(5 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Pyrene	0-3 ft	67,100	NA (7)	55.9	Yes	Yes	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	367,900	1,200	307	Yes	Yes	**Yes**
TPH (mg/kg)							
Diesel Range Organics	0-1 ft	1,000	NA	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	23,900	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	9,450	NA	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	1,000	NA	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	23,900	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	9,450	NA	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

Hierarchy of Terrestrial Plant SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(3) Efroymson RA, ME Wil, GW Suter II, and AC Wooten. 1997. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. November. ORNL. ES/ER/TM-85/R3.

Table N-1
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(6 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)

(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Individual COIs in a Given Media

(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

Tij = Risk ratios for contaminant *i* in medium *j*

Q = Receptor designator

Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).

Q = 1 for terrestrial T&E species and all aquatic species

Q = 5 for all common terrestrial species

For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

(6) The SLV for naphthalene was used to screen the individual and total LPAHs without SLVs.

(7) The SLV for the benzo(a)pyrene was used to screen the individual HPAHs without SLVs.

Table N-2
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(1 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)							
Antimony	0-1 ft	4.20	78	0.0538	No	No	No
Cadmium	0-1 ft	2.09	140	0.0149	No	No	No
Lead	0-1 ft	741	1,700	0.436	No	No	No
Mercury	0-1 ft	4.15	0.1	41.5	Yes	Yes	**Yes**
Silver	0-1 ft	1.50	50	0.0300	No	No	No
Zinc	0-1 ft	635	120	5.29	Yes	Yes	**Yes**
Antimony	0-3 ft	4.20	78	0.0538	No	No	No
Arsenic	0-3 ft	30.1	60	0.502	No	No	No
Cadmium	0-3 ft	3.54	140	0.0253	No	No	No
Lead	0-3 ft	1,660	1,700	0.976	No	No	No
Mercury	0-3 ft	4.15	0.1	41.5	Yes	Yes	**Yes**
Silver	0-3 ft	1.50	50	0.0300	No	No	No
Zinc	0-3 ft	1,140	120	9.50	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)							
Dibutyltin	0-1 ft	20.2	NA	- -	- -	- -	Yes - No SLV
Monobutyltin	0-1 ft	38.0	NA	- -	- -	- -	Yes - No SLV
Tributyltin	0-1 ft	165	NA	- -	- -	- -	Yes - No SLV
Dibutyltin	0-3 ft	20.2	NA	- -	- -	- -	Yes - No SLV
Monobutyltin	0-3 ft	38.0	NA	- -	- -	- -	Yes - No SLV
Tributyltin	0-3 ft	165	NA	- -	- -	- -	Yes - No SLV
PESTICIDES (ug/kg)							
4,4'-DDT	0-1 ft	28.0	NA	- -	- -	- -	Yes - No SLV
Total DDTs	0-1 ft	29.9	NA	- -	- -	- -	Yes - No SLV
Chlordane (technical)	0-1 ft	1,560	NA	- -	- -	- -	Yes - No SLV
4,4'-DDT	0-3 ft	28.0	NA	- -	- -	- -	Yes - No SLV
Total DDTs	0-3 ft	29.9	NA	- -	- -	- -	Yes - No SLV
Chlordane (technical)	0-3 ft	1,560	NA	- -	- -	- -	Yes - No SLV
Heptachlor	0-3 ft	3.07	NA	- -	- -	- -	Yes - No SLV
PCBs (ug/kg)							
Aroclor 1248	0-1 ft	968	2,510	0.386	No	No	No
Aroclor 1254	0-1 ft	78.6	2,510	0.0313	No	No	No

Table N-2
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(2 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Aroclor 1260	0-1 ft	660	2,510	0.263	No	No	No
Total PCBs (Aroclors)	0-1 ft	996	2,510	0.397	No	No	No
Aroclor 1248	0-3 ft	968	2,510	0.386	No	No	No
Aroclor 1254	0-3 ft	86.1	2,510	0.0343	No	No	No
Aroclor 1260	0-3 ft	660	2,510	0.263	No	No	No
Total PCBs (Aroclors)	0-3 ft	996	2,510	0.397	No	No	No
HERBICIDES (ug/kg)							
2,4,5-T	0-1 ft	93.0	NA	- -	- -	- -	Yes - No SLV
Dichloroprop	0-1 ft	180	NA	- -	- -	- -	Yes - No SLV
MCPP	0-1 ft	14,000	NA	- -	- -	- -	Yes - No SLV
2,4,5-T	0-3 ft	93.0	NA	- -	- -	- -	Yes - No SLV
Dichloroprop	0-3 ft	180	NA	- -	- -	- -	Yes - No SLV
MCPP	0-3 ft	14,000	NA	- -	- -	- -	Yes - No SLV
VOCs (ug/kg)							
1,2,4-Trimethylbenzene	0-1 ft	14,300	NA	- -	- -	- -	Yes - No SLV
1,3,5-Trimethylbenzene	0-1 ft	5,410	NA	- -	- -	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-1 ft	1,000	NA	- -	- -	- -	Yes - No SLV
Ethylbenzene	0-1 ft	2,700	2,260	1.19	Yes	No	**Yes**
m,p-Xylenes	0-1 ft	9,800	NA	- -	- -	- -	Yes - No SLV
Naphthalene	0-1 ft	8,360	NA [6]	0.288	No	No	No
Tetrachloroethene (PCE)	0-1 ft	65.0	NA	- -	- -	- -	Yes - No SLV
Toluene	0-1 ft	5.30	NA	- -	- -	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-3 ft	14,300	NA	- -	- -	- -	Yes - No SLV
1,3,5-Trimethylbenzene	0-3 ft	5,410	NA	- -	- -	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-3 ft	1,000	NA	- -	- -	- -	Yes - No SLV
Naphthalene	0-3 ft	8,360	NA [6]	0.288	No	No	No
Tetrachloroethene (PCE)	0-3 ft	65.0	NA	- -	- -	- -	Yes - No SLV
Toluene	0-3 ft	5.30	NA	- -	- -	- -	Yes - No SLV
SVOCs (ug/kg)							
Benzoic Acid	0-1 ft	553	NA	- -	- -	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-1 ft	21,000	NA	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-1 ft	68.7	NA	- -	- -	- -	Yes - No SLV

Table N-2
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(3 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Carbazole	0-1 ft	2,650	2,260	1.17	Yes	No	**Yes**
Dibenzofuran	0-1 ft	810	NA	- -	- -	- -	Yes - No SLV
Diethyl Phthalate	0-1 ft	73.4	NA	- -	- -	- -	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	1,800	NA	- -	- -	- -	Yes - No SLV
Pentachlorophenol	0-1 ft	201	31,000	0.00648	No	No	No
Benzoic Acid	0-3 ft	553	NA	- -	- -	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-3 ft	21,000	NA	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-3 ft	68.7	NA	- -	- -	- -	Yes - No SLV
Carbazole	0-3 ft	2,840	2,260	1.26	Yes	No	**Yes**
Dibenzofuran	0-3 ft	810	NA	- -	- -	- -	Yes - No SLV
Diethyl Phthalate	0-3 ft	73.4	NA	- -	- -	- -	Yes - No SLV
Di-n-butyl Phthalate	0-3 ft	1,800	NA	- -	- -	- -	Yes - No SLV
Pentachlorophenol	0-3 ft	201	31,000	0.00648	No	No	No
PAHs (ug/kg)							
2-Methylnaphthalene	0-1 ft	1,530	NA [6]	0.0528	No	No	No
Acenaphthene	0-1 ft	2,600	NA [6]	0.0897	No	No	No
Acenaphthylene	0-1 ft	78.1	NA [6]	0.00269	No	No	No
Anthracene	0-1 ft	2,700	NA [6]	0.0931	No	No	No
Fluorene	0-1 ft	1,200	NA [6]	0.0414	No	No	No
Naphthalene	0-1 ft	823	NA [6]	0.0284	No	No	No
Phenanthrene	0-1 ft	12,000	NA [6]	0.414	No	No	No
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	18,674	29,000	0.644	No	No	No
Benzo(a)anthracene	0-1 ft	32,000	NA [7]	1.78	Yes	No	**Yes**
Benzo(a)pyrene	0-1 ft	33,000	NA [7]	1.83	Yes	No	**Yes**
Benzo(b)fluoranthene	0-1 ft	65,000	NA [7]	3.61	Yes	No	**Yes**
Benzo(g,h,i)perylene	0-1 ft	18,000	NA [7]	1.00	Yes	No	**Yes**
Benzo(k)fluoranthene	0-1 ft	65,000	NA [7]	3.61	Yes	No	**Yes**
Benzofluoranthenes, Total	0-1 ft	14,700	NA [7]	0.817	No	No	No
Chrysene	0-1 ft	32,000	NA [7]	1.78	Yes	No	**Yes**

Table N-2
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(4 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Dibenz(a,h)anthracene	0-1 ft	9,900	NA (7)	0.550	No	No	No
Fluoranthene	0-1 ft	54,000	NA (7)	3.00	Yes	No	**Yes**
Indeno(1,2,3-cd)pyrene	0-1 ft	19,000	NA (7)	1.06	Yes	No	**Yes**
Pyrene	0-1 ft	40,000	NA (7)	2.22	Yes	No	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	367,900	18,000	20.4	Yes	Yes	**Yes**
2-Methylnaphthalene	0-3 ft	1,530	NA (6)	0.0528	No	No	No
Acenaphthene	0-3 ft	2,600	NA (6)	0.0897	No	No	No
Acenaphthylene	0-3 ft	111	NA (6)	0.00383	No	No	No
Anthracene	0-3 ft	8,440	NA (6)	0.291	No	No	No
Fluorene	0-3 ft	1,610	NA (6)	0.0555	No	No	No
Naphthalene	0-3 ft	823	NA (6)	0.0284	No	No	No
Phenanthrene	0-3 ft	21,900	NA (6)	0.755	No	No	No
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	34,767	29,000	1.20	Yes	No	**Yes**
Benzo(a)anthracene	0-3 ft	32,000	NA (7)	1.78	Yes	No	**Yes**
Benzo(a)pyrene	0-3 ft	34,000	NA (7)	1.89	Yes	No	**Yes**
Benzo(b)fluoranthene	0-3 ft	65,000	NA (7)	3.61	Yes	No	**Yes**
Benzo(g,h,i)perylene	0-3 ft	18,000	NA (7)	1.00	Yes	No	**Yes**
Benzo(k)fluoranthene	0-3 ft	65,000	NA (7)	3.61	Yes	No	**Yes**
Benzofluoranthenes, Total	0-3 ft	31,300	NA (7)	1.74	Yes	No	**Yes**
Chrysene	0-3 ft	35,300	NA (7)	1.96	Yes	No	**Yes**
Dibenz(a,h)anthracene	0-3 ft	9,900	NA (7)	0.550	No	No	No
Fluoranthene	0-3 ft	54,000	NA (7)	3.00	Yes	No	**Yes**
Indeno(1,2,3-cd)pyrene	0-3 ft	20,000	NA (7)	1.11	Yes	No	**Yes**
Pyrene	0-3 ft	67,100	NA (7)	3.73	Yes	No	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	367,900	18,000	20.4	Yes	Yes	**Yes**
TPH (mg/kg)							
Diesel Range Organics	0-1 ft	1,000	NA	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	23,900	NA	- -	- -	- -	Yes - No SLV

Table N-2
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(5 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Residual Range Organics	0-1 ft	9,450	NA	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	1,000	NA	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	23,900	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	9,450	NA	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

Hierarchy of Terrestrial Invertebrate SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(3) RA Efroymson. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process, Nov 1997 Revision. ORNL ES/ER/TM-126/R2.

(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

Table N-2
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(6 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)

Tij = Risk ratios for contaminant *i* in medium *j*

Q = Receptor designator

Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).

Q = 1 for terrestrial T&E species and all aquatic species

Q = 5 for all common terrestrial species

For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

(6) The SLV for Total LPAHs was used to screen the individual LPAHs to determine which individuals are driving Total LPAH risk, if any.

(7) The SLV for Total HPAHs was used to screen the individual HPAHs to determine which individuals are driving Total HPAH risk, if any.

Table N-3
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(1 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)									
Antimony	0-1 ft	1.36	0.176	7.7	Yes	Yes	No	--	**Yes**
Cadmium	0-1 ft	0.974	0.77	1.26	Yes	No	Yes	Yes	**Yes**
Lead	0-1 ft	332	25.5	13.0	Yes	Yes	Yes	Yes	**Yes**
Mercury	0-1 ft	1.57	0.066	23.8	Yes	Yes	Yes	Yes	**Yes**
Silver	0-1 ft	0.468	4.2	0.111	No	No	Yes	Yes	No
Zinc	0-1 ft	207	71.7	2.89	Yes	No	Yes	Yes	**Yes**
Antimony	0-3 ft	1.48	0.176	8.4	Yes	Yes	No	--	**Yes**
Arsenic	0-3 ft	10.5	43	0.244	No	No	Yes	Yes	No
Cadmium	0-3 ft	1.17	0.77	1.52	Yes	No	Yes	Yes	**Yes**
Lead	0-3 ft	511	25.5	20.0	Yes	Yes	Yes	Yes	**Yes**
Mercury	0-3 ft	1.45	0.066	22.0	Yes	Yes	Yes	Yes	**Yes**
Silver	0-3 ft	0.450	4.2	0.107	No	No	Yes	Yes	No
Zinc	0-3 ft	417	71.7	5.82	Yes	Yes	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)									
Dibutyltin	0-1 ft	20.2	28,000	0.000721	No	No	No	--	No
Monobutyltin	0-1 ft	38.0	28,000	0.00136	No	No	No	--	No
Tributyltin	0-1 ft	165	28,000	0.00589	No	No	Yes	No	**Yes-Bio**
Dibutyltin	0-3 ft	20.1	28,000	0.000718	No	No	No	--	No
Monobutyltin	0-3 ft	38.0	28,000	0.00136	No	No	No	--	No
Tributyltin	0-3 ft	60.1	28,000	0.00215	No	No	Yes	No	**Yes-Bio**
PESTICIDES (ug/kg)									
4,4'-DDT	0-1 ft	12.2	93	0.131	No	No	Yes	Yes	No
Total DDTs	0-1 ft	13.9	93	0.149	No	No	Yes	Yes	No
Chlordane (technical)	0-1 ft	1,560	9,000	0.173	No	No	Yes	No	**Yes-Bio**
4,4'-DDT	0-3 ft	11.8	93	0.127	No	No	Yes	Yes	No
Total DDTs	0-3 ft	13.3	93	0.14	No	No	Yes	Yes	No
Chlordane (technical)	0-3 ft	1,560	9,000	0.173	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-3 ft	2.86	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)									
Aroclor 1248	0-1 ft	386	655	0.589	No	No	Yes	Yes	No
Aroclor 1254	0-1 ft	22.5	655	0.0344	No	No	Yes	Yes	No
Aroclor 1260	0-1 ft	251	655	0.383	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-1 ft	429	655	0.655	No	No	Yes	Yes	No
Aroclor 1248	0-3 ft	364	655	0.556	No	No	Yes	Yes	No
Aroclor 1254	0-3 ft	31.1	655	0.0475	No	No	Yes	Yes	No

Table N-3
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(2 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Aroclor 1260	0-3 ft	190	655	0.290	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-3 ft	410	655	0.626	No	No	Yes	Yes	No
HERBICIDES (ug/kg)									
2,4,5-T	0-1 ft	71.6	93	0.770	No	No	No	- -	No
Dichloroprop	0-1 ft	175	93	1.88	Yes	No	No	- -	**Yes**
MCPP	0-1 ft	11,700	93	126	Yes	Yes	No	- -	**Yes**
2,4,5-T	0-3 ft	70.3	93	0.756	No	No	No	- -	No
Dichloroprop	0-3 ft	174	93	1.87	Yes	No	No	- -	**Yes**
MCPP	0-3 ft	11,200	93	120	Yes	Yes	No	- -	**Yes**
VOCs (ug/kg)									
1,2,4-Trimethylbenzene	0-1 ft	3,030	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
1,3,5-Trimethylbenzene	0-1 ft	1,200	NA	- -	- -	- -	No	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-1 ft	12	NA	- -	- -	- -	No	- -	Yes - No SLV
Ethylbenzene	0-1 ft	2,700	NA	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	9,800	NA	- -	- -	- -	No	- -	Yes - No SLV
Naphthalene	0-1 ft	4,190	NA	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-1 ft	16.7	NA	- -	- -	- -	No	- -	Yes - No SLV
Toluene	0-1 ft	1.80	NA	- -	- -	- -	No	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-3 ft	2,790	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
1,3,5-Trimethylbenzene	0-3 ft	1,110	NA	- -	- -	- -	No	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-3 ft	12	NA	- -	- -	- -	No	- -	Yes - No SLV
Naphthalene	0-3 ft	3,830	NA	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-3 ft	16.5	NA	- -	- -	- -	No	- -	Yes - No SLV
Toluene	0-3 ft	1.64	NA	- -	- -	- -	No	- -	Yes - No SLV
SVOCs (ug/kg)									
Benzoic Acid	0-1 ft	200	NA	- -	- -	- -	No	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-1 ft	9,680	4,500	2.15	Yes	No	Yes	No	**Yes**
Butyl Benzyl Phthalate	0-1 ft	36.6	450	0.0813	No	No	Yes	No	**Yes-Bio**
Carbazole	0-1 ft	751	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-1 ft	152	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Diethyl Phthalate	0-1 ft	50.0	NA	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	232	450	0.516	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-1 ft	103	2,100	0.0490	No	No	Yes	Yes	No
Benzoic Acid	0-3 ft	218	NA	- -	- -	- -	No	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-3 ft	6,380	4,500	1.42	Yes	No	Yes	No	**Yes**
Butyl Benzyl Phthalate	0-3 ft	34.9	450	0.0776	No	No	Yes	No	**Yes-Bio**

Table N-3
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(3 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Carbazole	0-3 ft	964	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-3 ft	164	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Diethyl Phthalate	0-3 ft	38.9	NA	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-3 ft	217	450	0.482	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-3 ft	99	2,100	0.0470	No	No	Yes	Yes	No
PAHs (ug/kg)									
2-Methylnaphthalene	0-1 ft	213	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthene	0-1 ft	713	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthylene	0-1 ft	29.2	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Anthracene	0-1 ft	924	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluorene	0-1 ft	222	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Naphthalene	0-1 ft	172	NA	- -	- -	- -	No	- -	Yes - No SLV
Phenanthrene	0-1 ft	3,660	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	5,810	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)anthracene	0-1 ft	8,340	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)pyrene	0-1 ft	8,700	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(b)fluoranthene	0-1 ft	16,000	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(g,h,i)perylene	0-1 ft	4,590	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(k)fluoranthene	0-1 ft	30,200	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzofluoranthenes, Total	0-1 ft	14,700	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Chrysene	0-1 ft	8,400	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenz(a,h)anthracene	0-1 ft	4,230	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluoranthene	0-1 ft	14,500	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	0-1 ft	5,040	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Pyrene	0-1 ft	12,300	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	90,158	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
2-Methylnaphthalene	0-3 ft	199	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthene	0-3 ft	913	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthylene	0-3 ft	34.9	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Anthracene	0-3 ft	1,930	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluorene	0-3 ft	324	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Naphthalene	0-3 ft	157	NA	- -	- -	- -	No	- -	Yes - No SLV
Phenanthrene	0-3 ft	5,780	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	9,226	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)anthracene	0-3 ft	9,960	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)pyrene	0-3 ft	11,200	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**

Table N-3
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(4 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Benzo(b)fluoranthene	0-3 ft	15,200	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(g,h,i)perylene	0-3 ft	5,820	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(k)fluoranthene	0-3 ft	26,300	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzofluoranthenes, Total	0-3 ft	31,300	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Chrysene	0-3 ft	11,000	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenz(a,h)anthracene	0-3 ft	2,060	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluoranthene	0-3 ft	17,500	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	0-3 ft	6,800	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Pyrene	0-3 ft	18,800	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	101,525	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
TPH (mg/kg)									
Diesel Range Organics	0-1 ft	3670	NA	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	307	NA	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	17,700	NA	- -	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	3340	NA	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	157	NA	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	16,000	NA	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Avian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

Table N-3
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(5 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)

(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.

(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Individual COIs in a Given Media

(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

Tij = Risk ratios for contaminant *i* in medium *j*

Q = Receptor designator

Assumptions: Cij = Lower of 95% UCL and maximum concentration for wildlife species (birds and mammals).

Q = 1 for terrestrial T&E species and all aquatic species

Q = 5 for all common terrestrial species

For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-4
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(1 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
INORGANICS (mg/kg)									
Antimony	0-1 ft	1.36	0.27	5.037	Yes	Yes	No	--	**Yes**
Cadmium	0-1 ft	0.974	0.36	2.71	Yes	No	Yes	Yes	No
Lead	0-1 ft	332	56	5.93	Yes	Yes	Yes	Yes	**Yes**
Mercury	0-1 ft	1.57	0.146	10.8	Yes	Yes	Yes	Yes	**Yes**
Silver	0-1 ft	0.468	14	0.0334	No	No	Yes	Yes	No
Zinc	0-1 ft	207	79	2.62	Yes	No	Yes	Yes	No
Antimony	0-3 ft	1.48	0.27	5.48	Yes	Yes	No	--	**Yes**
Arsenic	0-3 ft	10.5	46	0.228	No	No	Yes	Yes	No
Cadmium	0-3 ft	1.17	0.36	3.25	Yes	No	Yes	Yes	No
Lead	0-3 ft	511	56	9.13	Yes	Yes	Yes	Yes	**Yes**
Mercury	0-3 ft	1.45	0.146	9.93	Yes	Yes	Yes	Yes	**Yes**
Silver	0-3 ft	0.450	14	0.0321	No	No	Yes	Yes	No
Zinc	0-3 ft	417	79	5.28	Yes	Yes	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)									
Dibutyltin	0-1 ft	20.2	1,300,000	0.0000155	No	No	No	--	No
Monobutyltin	0-1 ft	38.0	1,300,000	0.0000292	No	No	No	--	No
Tributyltin	0-1 ft	165	1,300,000	0.000127	No	No	Yes	No	**Yes-Bio**
Dibutyltin	0-3 ft	20.1	1,300,000	0.0000155	No	No	No	--	No
Monobutyltin	0-3 ft	38.0	1,300,000	0.0000292	No	No	No	--	No
Tributyltin	0-3 ft	60.1	1,300,000	0.0000462	No	No	Yes	No	**Yes-Bio**
PESTICIDES (ug/kg)									
4,4'-DDT	0-1 ft	12.2	21	0.581	No	No	Yes	Yes	No
Total DDTs	0-1 ft	13.9	21	0.661	No	No	Yes	Yes	No
Chlordane (technical)	0-1 ft	1,560	250,000	0.00624	No	No	Yes	No	**Yes-Bio**
4,4'-DDT	0-3 ft	11.8	21	0.562	No	No	Yes	Yes	No
Total DDTs	0-3 ft	13.3	21	0.635	No	No	Yes	Yes	No
Chlordane (technical)	0-3 ft	1,560	250,000	0.00624	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-3 ft	2.86	15,000	0.000191	No	No	Yes	No	**Yes-Bio**
PCBs (ug/kg)									
Aroclor 1248	0-1 ft	386	371	1.04	Yes	No	Yes	Yes	No
Aroclor 1254	0-1 ft	22.5	371	0.0606	No	No	Yes	Yes	No
Aroclor 1260	0-1 ft	251	371	0.677	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-1 ft	429	371	1.16	Yes	No	Yes	Yes	No
Aroclor 1248	0-3 ft	364	371	0.981	No	No	Yes	Yes	No
Aroclor 1254	0-3 ft	31.1	371	0.0838	No	No	Yes	Yes	No
Aroclor 1260	0-3 ft	190	371	0.512	No	No	Yes	Yes	No

Table N-4
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(2 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Total PCBs (Aroclors)	0-3 ft	410	371	1.10	Yes	No	Yes	Yes	No
HERBICIDES (ug/kg)									
2,4,5-T	0-1 ft	71.6	21	3.41	Yes	No	No	--	No
Dichloroprop	0-1 ft	175	21	8.33	Yes	Yes	No	--	**Yes**
MCPP	0-1 ft	11,700	21	557	Yes	Yes	No	--	**Yes**
2,4,5-T	0-3 ft	70.3	21	3.35	Yes	No	No	--	No
Dichloroprop	0-3 ft	174	21	8.29	Yes	Yes	No	--	**Yes**
MCPP	0-3 ft	11,200	21	533	Yes	Yes	No	--	**Yes**
VOCs (ug/kg)									
1,2,4-Trimethylbenzene	0-1 ft	3,030	1,440,000	0.00210	No	No	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-1 ft	1,200	1,440,000	0.000833	No	No	No	- -	No
Dichloromethane (Methylene Chloride)	0-1 ft	12	730,000	0.0000164	No	No	No	- -	No
Ethylbenzene	0-1 ft	2,700	NA	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	9,800	120,000	0.0817	No	No	No	- -	No
Naphthalene	0-1 ft	4,190	NA [6]	0.0419	No	No	No	- -	No
Tetrachloroethene (PCE)	0-1 ft	16.7	80,000	0.000209	No	No	No	- -	No
Toluene	0-1 ft	1.80	1,440,000	0.00000125	No	No	No	- -	No
1,2,4-Trimethylbenzene	0-3 ft	2,790	1,440,000	0.00194	No	No	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-3 ft	1,110	1,440,000	0.000771	No	No	No	- -	No
Dichloromethane (Methylene Chloride)	0-3 ft	12	730,000	0.0000164	No	No	No	- -	No
Naphthalene	0-3 ft	3,830	NA [6]	0.0383	No	No	No	- -	No
Tetrachloroethene (PCE)	0-3 ft	16.5	80,000	0.000206	No	No	No	- -	No
Toluene	0-3 ft	1.64	1,440,000	0.00000114	No	No	No	- -	No
SVOCs (ug/kg)									
Benzoic Acid	0-1 ft	200	1,440,000	0.000139	No	No	No	- -	No
Bis(2-ethylhexyl) Phthalate	0-1 ft	9,680	1,020,000	0.00949	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-1 ft	36.6	30,000,000	0.00000122	No	No	Yes	No	**Yes-Bio**
Carbazole	0-1 ft	751	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-1 ft	152	2	76.0	Yes	Yes	Yes	No	**Yes**
Diethyl Phthalate	0-1 ft	50.0	250,000,000	0.000000200	No	No	No	- -	No
Di-n-butyl Phthalate	0-1 ft	232	30,000,000	0.00000773	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-1 ft	103	2,800	0.0368	No	No	Yes	Yes	No
Benzoic Acid	0-3 ft	218	1,440,000	0.000151	No	No	No	- -	No
Bis(2-ethylhexyl) Phthalate	0-3 ft	6,380	1,020,000	0.00625	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-3 ft	34.9	30,000,000	0.00000116	No	No	Yes	No	**Yes-Bio**
Carbazole	0-3 ft	964	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-3 ft	164	2	82.0	Yes	Yes	Yes	No	**Yes**

Table N-4
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(3 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Diethyl Phthalate	0-3 ft	38.9	250,000,000	0.000000156	No	No	No	- -	No
Di-n-butyl Phthalate	0-3 ft	217	30,000,000	0.00000723	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-3 ft	99	2,800	0.0353	No	No	Yes	Yes	No
PAHs (ug/kg)									
2-Methylnaphthalene	0-1 ft	213	NA (6)	0.00213	No	No	Yes	Incl in tLPAH	No
Acenaphthene	0-1 ft	713	NA (6)	0.00713	No	No	Yes	Incl in tLPAH	No
Acenaphthylene	0-1 ft	29.2	NA (6)	0.000292	No	No	Yes	Incl in tLPAH	No
Anthracene	0-1 ft	924	NA (6)	0.00924	No	No	Yes	Incl in tLPAH	No
Fluorene	0-1 ft	222	NA (6)	0.00222	No	No	Yes	Incl in tLPAH	No
Naphthalene	0-1 ft	172	NA (6)	0.00172	No	No	No	- -	No
Phenanthrene	0-1 ft	3,660	NA (6)	0.0366	No	No	Yes	Incl in tLPAH	No
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	5,810	100,000	0.0581	No	No	Yes	Yes	No
Benzo(a)anthracene	0-1 ft	8,340	NA (7)	7.58	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzo(a)pyrene	0-1 ft	8,700	NA (7)	7.91	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzo(b)fluoranthene	0-1 ft	16,000	NA (7)	14.5	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzo(g,h,i)perylene	0-1 ft	4,590	NA (7)	4.17	Yes	No	Yes	Incl in tHPAH	No
Benzo(k)fluoranthene	0-1 ft	30,200	NA (7)	27.5	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzofluoranthenes, Total	0-1 ft	14,700	NA (7)	13.4	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Chrysene	0-1 ft	8,400	NA (7)	7.64	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Dibenz(a,h)anthracene	0-1 ft	4,230	NA (7)	3.85	Yes	No	Yes	Incl in tHPAH	No
Fluoranthene	0-1 ft	14,500	NA (7)	13.2	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Indeno(1,2,3-cd)pyrene	0-1 ft	5,040	NA (7)	4.58	Yes	No	Yes	Incl in tHPAH	No
Pyrene	0-1 ft	12,300	NA (7)	11.2	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	90,158	1,100	82.0	Yes	Yes	Yes	Yes	**Yes**
2-Methylnaphthalene	0-3 ft	199	NA (6)	0.00199	No	No	Yes	Incl in tLPAH	No
Acenaphthene	0-3 ft	913	NA (6)	0.00913	No	No	Yes	Incl in tLPAH	No
Acenaphthylene	0-3 ft	34.9	NA (6)	0.000349	No	No	Yes	Incl in tLPAH	No
Anthracene	0-3 ft	1,930	NA (6)	0.0193	No	No	Yes	Incl in tLPAH	No
Fluorene	0-3 ft	324	NA (6)	0.00324	No	No	Yes	Incl in tLPAH	No
Naphthalene	0-3 ft	157	NA (6)	0.00157	No	No	No	- -	No
Phenanthrene	0-3 ft	5,780	NA (6)	0.0578	No	No	Yes	Incl in tLPAH	No
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	9,226	100,000	0.0923	No	No	Yes	Yes	No

Table N-4
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(4 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Benzo(a)anthracene	0-3 ft	9,960	NA [7]	9.05	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzo(a)pyrene	0-3 ft	11,200	NA [7]	10.2	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzo(b)fluoranthene	0-3 ft	15,200	NA [7]	13.8	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzo(g,h,i)perylene	0-3 ft	5,820	NA [7]	5.29	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzo(k)fluoranthene	0-3 ft	26,300	NA [7]	23.9	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzofluoranthenes, Total	0-3 ft	31,300	NA [7]	28.5	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Chrysene	0-3 ft	11,000	NA [7]	10.0	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Dibenz(a,h)anthracene	0-3 ft	2,060	NA [7]	1.87	Yes	No	Yes	Incl in tHPAH	No
Fluoranthene	0-3 ft	17,500	NA [7]	15.9	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Indeno(1,2,3-cd)pyrene	0-3 ft	6,800	NA [7]	6.18	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Pyrene	0-3 ft	18,800	NA [7]	17.1	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	101,525	1,100	92.3	Yes	Yes	Yes	Yes	**Yes**
TPH (mg/kg)									
Diesel Range Organics	0-1 ft	3670	NA	- -	- -	- -			Yes - No SLV
Gasoline Range Organics	0-1 ft	307	NA	- -	- -	- -			Yes - No SLV
Residual Range Organics	0-1 ft	17,700	NA	- -	- -	- -			Yes - No SLV
Diesel Range Organics	0-3 ft	3340	NA	- -	- -	- -			Yes - No SLV
Gasoline Range Organics	0-3 ft	157	NA	- -	- -	- -			Yes - No SLV
Residual Range Organics	0-3 ft	16,000	NA	- -	- -	- -			Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
Incl in tHPAH = COI is included in the Total HPAH Screening
Incl in tLPAH = COI is included in the Total LPAH Screening
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

Table N-4
Identification of CPECs in Soil at Landfill AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(5 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Mammalian SLV Selection (see Appendix J-5a)

For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.

(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Individual COIs in a Given Media

(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.

Tij = Risk ratios for contaminant *i* in medium *j*

Q = Receptor designator

Assumptions: Cij = Lower of 95% UCL and maximum concentration for wildlife species (birds and mammals).

Q = 1 for terrestrial T&E species and all aquatic species

Q = 5 for all common terrestrial species

For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

(6) The SLV for Total LPAHs was used to screen the individual LPAHs to determine which individuals are driving Total LPAH risk, if any.

(7) The SLV for Total HPAHs was used to screen the individual HPAHs to determine which individuals are driving Total HPAH risk, if any.

Table N-5
Identification of CPECs in Groundwater, Seep Water, and Surface Water at Landfill AOPC - Individual COIs for Aquatic Organisms
Bradford Island - Upland Operable Unit
(1 of 3)

Chemicals of Interest	Medium	Dissolved or Total (D or T)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	Chemical is a Concern for Aquatic Organisms (Tij>1)?	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (9) (Q = 1)
INORGANICS (mg/L)								
Arsenic	Groundwater	D	0.00749	0.15	0.0499	No	Yes	**Yes-Bio**
Barium	Groundwater	D	0.134	0.004	33.5	Yes	No	**Yes**
Calcium	Groundwater	D	91.6	116	0.790	No	No	No
Iron	Groundwater	D	31.0	1.0	31.0	Yes	No	**Yes**
Lead	Groundwater	D	0.000524	0.0014	0.365	No	Yes	**Yes-Bio**
Magnesium	Groundwater	D	16.3	82	0.199	No	No	No
Manganese	Groundwater	D	3.50	0.12	29.2	Yes	No	**Yes**
Nickel	Groundwater	D	0.0186	0.034	0.551	No	No	No
Potassium	Groundwater	D	7.47	53	0.141	No	No	No
Sodium	Groundwater	D	648	680	0.953	No	No	No
Zinc	Groundwater	D	0.196	0.077	2.56	Yes	Yes	**Yes**
Antimony	Seep Water	D	0.00228	1.00	0.00228	No	No	No
Arsenic	Seep Water	D	0.00100	0.15	0.00667	No	Yes	**Yes-Bio**
Barium	Seep Water	D	0.277	0.004	69.3	Yes	No	**Yes**
Calcium	Seep Water	D	76.4	116	0.659	No	No	No
Copper	Seep Water	D	0.00109	0.006	0.188	No	No	No
Iron	Seep Water	D	3.21	1.0	3.21	Yes	No	**Yes**
Lead	Seep Water	D	0.0000650	0.0014	0.0452	No	Yes	**Yes-Bio**
Magnesium	Seep Water	D	16.6	82	0.202	No	No	No
Manganese	Seep Water	D	1.48	0.12	12.3	Yes	No	**Yes**
Nickel	Seep Water	D	0.00222	0.034	0.0658	No	No	No
Potassium	Seep Water	D	4.16	53	0.0785	No	No	No
Sodium	Seep Water	D	19.7	680	0.0290	No	No	No
Zinc	Seep Water	D	0.0856	0.077	1.12	Yes	Yes	**Yes**
Arsenic	Surface Water	D	0.00101	0.15	0.00673	No	Yes	**Yes-Bio**
Calcium	Surface Water	D	20.5	116	0.177	No	No	No
Iron	Surface Water	D	0.00920	1.0	0.00920	No	No	No
Lead	Surface Water	D	0.0000160	0.0014	0.0111	No	Yes	**Yes-Bio**
Magnesium	Surface Water	D	6.33	82	0.0772	No	No	No
Manganese	Surface Water	D	0.00101	0.12	0.00842	No	No	No
Potassium	Surface Water	D	1.51	53	0.0285	No	No	No
Sodium	Surface Water	D	7.90	680	0.0116	No	No	No
BUTYLTINS (ug/L)								
Dibutyltin	Groundwater	T	0.0586	0.063	0.930	No	No	No

Table N-5
Identification of CPECs in Groundwater, Seep Water, and Surface Water at Landfill AOPC - Individual COIs for Aquatic Organisms
Bradford Island - Upland Operable Unit
(2 of 3)

Chemicals of Interest	Medium	Dissolved or Total (D or T)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	Chemical is a Concern for Aquatic Organisms (Tij>1)?	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (9) (Q = 1)
Monobutyltin	Groundwater	T	0.0254	0.063	0.403	No	No	No
Tributyltin	Groundwater	T	0.0364	0.063	0.578	No	Yes	**Yes-Bio**
HERBICIDES (ug/L)								
4-Nitrophenol	Groundwater	T	0.840	150	0.00560	No	No	No
Pentachlorophenol	Groundwater	T	0.112	15	0.00747	No	Yes	**Yes-Bio**
VOCs (ug/L)								
1,2,4-Trimethylbenzene	Groundwater	T	5.20	7.3	0.712	No	Yes	**Yes-Bio**
Acetone	Groundwater	T	10.2	1,500	0.00680	No	No	No
Chloroform	Groundwater	T	0.498	1,240	0.000402	No	No	No
Isopropylbenzene	Groundwater	T	3.42	7.3	0.468	No	Yes	**Yes-Bio**
n-Propylbenzene	Groundwater	T	1.32	7.3	0.181	No	Yes	**Yes-Bio**
Tetrachloroethene (PCE)	Groundwater	T	2.80	840	0.00333	No	No	No
Vinyl Chloride	Groundwater	T	0.307	1,300	0.000236	No	No	No
Chloroform	Seep Water	T	2.80	1,240	0.00226	No	No	No
Tetrachloroethene (PCE)	Seep Water	T	4.40	840	0.00524	No	No	No
SVOCs (ug/L)								
Bis(2-ethylhexyl) Phthalate	Groundwater	T	4.70	3.0	1.57	Yes	Yes	**Yes**
Diethyl Phthalate	Groundwater	T	0.873	210	0.00416	No	No	No
Di-n-octyl Phthalate	Groundwater	T	4.61	708	0.00651	No	Yes	**Yes-Bio**
Isophorone	Groundwater	T	0.177	2,340	0.0000756	No	No	No
Benzoic Acid	Seep Water	T	5.88	42	0.140	No	No	No
PAHs (ug/L)								
2-Methylnaphthalene	Groundwater	T	0.175	72.16	0.00243	No	Yes	**Yes-Bio**
Acenaphthene	Groundwater	T	0.158	55.85	0.002829	No	Yes	**Yes-Bio**
Naphthalene	Groundwater	T	0.0873	193.5	0.000451	No	No	No
Phenanthrene	Groundwater	T	0.591	6.3	0.0938	No	Yes	**Yes-Bio**
TPH (mg/L)								
Diesel Range Organics	Groundwater	T	0.388	NA	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	Groundwater	T	0.0604	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	Groundwater	T	0.344	NA	- -	- -	- -	Yes - No SLV
Diesel Range Organics	Seep Water	T	0.130	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	Seep Water	T	0.130	NA	- -	- -	- -	Yes - No SLV
Diesel Range Organics	Surface Water	T	0.0300	NA	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest

Table N-5
Identification of CPECs in Groundwater, Seep Water, and Surface Water at Landfill AOPC - Individual COIs for Aquatic Organisms
Bradford Island - Upland Operable Unit
(3 of 3)

Chemicals of Interest	Medium	Dissolved or Total (D or T)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	Chemical is a Concern for Aquatic Organisms (Tij>1)?	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (9) (Q = 1)

NA = not available
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) In addition to seep water and surface water concentrations, concentrations in groundwater were compared to Selected Level II SLVs for surface water as a conservative measure (in the event that groundwater discharges to surface water).

Hierarchy of Aquatic Organisms SLV Selection (see Appendix J-5b)

(2) USEPA 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.
(3) Oregon Department of Environmental Quality (DEQ). Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Table 33A).
(4) DEQ 1998. Updated 2001. Guidance for Ecological risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.
(5) Suter GW II, and CL Tsao. 1996. Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on Oak Ridge Reservation: 1996 Revision. ORNL, Oak Ridge, TN. 104pp. ES/ER/TM-96/R2.
(6) USEPA 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. November. EPA-600-R-02-013.
(7) Canadian Council of Resource and Environment Ministers. 2007. Canadian Water Quality Guidelines for the Protection of Aquatic Life. December Accessed on 1/20/10 at http://ceqg-rcqe.ccme.ca/.
(8) Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34 pages.

Individual COIs in a Given Media

(9) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLV ij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Lower of Maximum detected concentration and 95% UCL (for aquatic receptors).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-6
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(1 of 5)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)								
Antimony	0-1 ft	4.20	5	0.840	0.00242	No	No	No
Cadmium	0-1 ft	2.09	32	0.0653	0.000188	No	No	No
Lead	0-1 ft	741	120	6.18	0.0178	No	No	No
Mercury	0-1 ft	4.15	0.3	13.8	0.0399	Yes	No	**Yes**
Silver	0-1 ft	1.50	560	0.00268	0.00000773	No	No	No
Zinc	0-1 ft	635	160	3.97	0.0114	No	No	No
Antimony	0-3 ft	4.20	5	0.840	0.00209	No	No	No
Arsenic	0-3 ft	30.1	18	1.67	0.00416	No	No	No
Cadmium	0-3 ft	3.54	32	0.111	0.000275	No	No	No
Lead	0-3 ft	1,660	120	13.8	0.0344	Yes	No	**Yes**
Mercury	0-3 ft	4.15	0.3	13.8	0.0344	Yes	No	**Yes**
Silver	0-3 ft	1.50	560	0.00268	0.00000667	No	No	No
Zinc	0-3 ft	1,140	160	7.13	0.0177	No	No	No
BUTYLTINS (ug/kg)								
Dibutyltin	0-1 ft	20.2	NA	- -	- -	- -	- -	Yes - No SLV
Monobutyltin	0-1 ft	38.0	NA	- -	- -	- -	- -	Yes - No SLV
Tributyltin	0-1 ft	165	NA	- -	- -	- -	- -	Yes - No SLV
Dibutyltin	0-3 ft	20.2	NA	- -	- -	- -	- -	Yes - No SLV
Monobutyltin	0-3 ft	38.0	NA	- -	- -	- -	- -	Yes - No SLV
Tributyltin	0-3 ft	165	NA	- -	- -	- -	- -	Yes - No SLV
PESTICIDES (ug/kg)								
4,4'-DDT	0-1 ft	28.0	NA	- -	- -	- -	- -	Yes - No SLV
Total DDTs	0-1 ft	29.9	NA	- -	- -	- -	- -	Yes - No SLV
Chlordane (technical)	0-1 ft	1,560	NA	- -	- -	- -	- -	Yes - No SLV
4,4'-DDT	0-3 ft	28.0	NA	- -	- -	- -	- -	Yes - No SLV
Total DDTs	0-3 ft	29.9	NA	- -	- -	- -	- -	Yes - No SLV
Chlordane (technical)	0-3 ft	1,560	NA	- -	- -	- -	- -	Yes - No SLV
Heptachlor	0-3 ft	3.07	1,000	0.00307	0.00000764	No	No	No
PCBs (ug/kg)								
Aroclor 1248	0-1 ft	968	40,000	0.0242	0.0000698	No	No	No
Aroclor 1254	0-1 ft	78.6	40,000	0.00197	0.00000567	No	No	No
Aroclor 1260	0-1 ft	660	40,000	0.0165	0.0000476	No	No	No
Aroclor 1248	0-3 ft	968	40,000	0.0242	0.0000602	No	No	No

Table N-6
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(2 of 5)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
Aroclor 1254	0-3 ft	86.1	40,000	0.00215	0.00000536	No	No	No
Aroclor 1260	0-3 ft	660	40,000	0.0165	0.0000411	No	No	No
HERBICIDES (ug/kg)								
2,4,5-T	0-1 ft	93.0	NA	- -	- -	- -	- -	Yes - No SLV
Dichloroprop	0-1 ft	180	NA	- -	- -	- -	- -	Yes - No SLV
MCPP	0-1 ft	14,000	NA	- -	- -	- -	- -	Yes - No SLV
2,4,5-T	0-3 ft	93.0	NA	- -	- -	- -	- -	Yes - No SLV
Dichloroprop	0-3 ft	180	NA	- -	- -	- -	- -	Yes - No SLV
MCPP	0-3 ft	14,000	NA	- -	- -	- -	- -	Yes - No SLV
VOCs (ug/kg)								
1,2,4-Trimethylbenzene	0-1 ft	14,300	200,000	0.0715	0.000206	No	No	No
1,3,5-Trimethylbenzene	0-1 ft	5,410	200,000	0.0271	0.0000780	No	No	No
Dichloromethane (Methylene Chloride)	0-1 ft	1,000	NA	- -	- -	- -	- -	Yes - No SLV
Ethylbenzene	0-1 ft	2,700	NA	- -	- -	- -	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	9,800	NA	- -	- -	- -	- -	Yes - No SLV
Naphthalene	0-1 ft	8,360	10,000	0.836	0.00241	No	No	No
Tetrachloroethene (PCE)	0-1 ft	65.0	10,000	0.00650	0.0000187	No	No	No
Toluene	0-1 ft	5.30	200,000	0.0000265	0.0000000764	No	No	No
1,2,4-Trimethylbenzene	0-3 ft	14,300	200,000	0.07150	0.000178	No	No	No
1,3,5-Trimethylbenzene	0-3 ft	5,410	200,000	0.0271	0.0000673	No	No	No
Dichloromethane (Methylene Chloride)	0-3 ft	1,000	NA	- -	- -	- -	- -	Yes - No SLV
Naphthalene	0-3 ft	8,360	10,000	0.836	0.00208	No	No	No
Tetrachloroethene (PCE)	0-3 ft	65.0	10,000	0.00650	0.0000162	No	No	No
Toluene	0-3 ft	5.30	200,000	0.0000265	0.0000000660	No	No	No
SVOCs (ug/kg)								
Benzoic Acid	0-1 ft	553	200,000	0.00277	0.00000797	No	No	No
Bis(2-ethylhexyl) Phthalate	0-1 ft	21,000	NA	- -	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-1 ft	68.7	200,000	0.000344	0.000000991	No	No	No
Carbazole	0-1 ft	2,650	NA	- -	- -	- -	- -	Yes - No SLV
Dibenzofuran	0-1 ft	810	NA	- -	- -	- -	- -	Yes - No SLV
Diethyl Phthalate	0-1 ft	73.4	100,000	0.000734	0.00000212	No	No	No
Di-n-butyl Phthalate	0-1 ft	1,800	200,000	0.00900	0.0000260	No	No	No
Pentachlorophenol	0-1 ft	201	5,000	0.0402	0.000116	No	No	No
Benzoic Acid	0-3 ft	553	200,000	0.00277	0.00000688	No	No	No

Table N-6
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(3 of 5)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
Bis(2-ethylhexyl) Phthalate	0-3 ft	21,000	NA	- -	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-3 ft	68.7	200,000	0.000344	0.000000855	No	No	No
Carbazole	0-3 ft	2,840	NA	- -	- -	- -	- -	Yes - No SLV
Dibenzofuran	0-3 ft	810	NA	- -	- -	- -	- -	Yes - No SLV
Diethyl Phthalate	0-3 ft	73.4	100,000	0.000734	0.00000183	No	No	No
Di-n-butyl Phthalate	0-3 ft	1,800	200,000	0.00900	0.0000224	No	No	No
Pentachlorophenol	0-3 ft	201	5,000	0.0402	0.000100	No	No	No
PAHs (ug/kg)								
2-Methylnaphthalene	0-1 ft	1,530	NA (6)	0.153	0.000441	No	No	No
Acenaphthene	0-1 ft	2,600	20,000	0.130	0.000375	No	No	No
Acenaphthylene	0-1 ft	78.1	NA (6)	0.00781	0.0000225	No	No	No
Anthracene	0-1 ft	2,700	NA (6)	0.270	0.000779	No	No	No
Fluorene	0-1 ft	1,200	NA (6)	0.120	0.000346	No	No	No
Naphthalene	0-1 ft	823	10,000	0.082	0.000237	No	No	No
Phenanthrene	0-1 ft	12,000	NA (6)	1.20	0.00346	No	No	No
Benzo(a)anthracene	0-1 ft	32,000	1,200	26.7	0.0769	Yes	No	**Yes**
Benzo(a)pyrene	0-1 ft	33,000	1,200	27.5	0.0793	Yes	No	**Yes**
Benzo(b)fluoranthene	0-1 ft	65,000	1,200	54.2	0.156	Yes	Yes	**Yes**
Benzo(g,h,i)perylene	0-1 ft	18,000	NA (7)	15.0	0.0433	Yes	No	**Yes**
Benzo(k)fluoranthene	0-1 ft	65,000	1,200	54.2	0.156	Yes	Yes	**Yes**
Benzofluoranthenes, Total	0-1 ft	14,700	NA (7)	12.3	0.0353	Yes	No	**Yes**
Chrysene	0-1 ft	32,000	1,200	26.7	0.0769	Yes	No	**Yes**
Dibenz(a,h)anthracene	0-1 ft	9,900	1,200	8.25	0.0238	No	No	No
Fluoranthene	0-1 ft	54,000	NA (7)	45.0	0.130	Yes	No	**Yes**
Indeno(1,2,3-cd)pyrene	0-1 ft	19,000	1,200	15.8	0.0457	Yes	No	**Yes**
Pyrene	0-1 ft	40,000	NA (7)	33.3	0.0961	Yes	No	**Yes**
2-Methylnaphthalene	0-3 ft	1,530	NA (6)	0.153	0.000381	No	No	No
Acenaphthene	0-3 ft	2,600	20,000	0.130	0.000324	No	No	No
Acenaphthylene	0-3 ft	111	NA (6)	0.0111	0.0000276	No	No	No
Anthracene	0-3 ft	8,440	NA (6)	0.844	0.00210	No	No	No
Fluorene	0-3 ft	1,610	NA (6)	0.161	0.000401	No	No	No
Naphthalene	0-3 ft	823	10,000	0.082	0.000205	No	No	No

Table N-6
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(4 of 5)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
Phenanthrene	0-3 ft	21,900	NA (6)	2.19	0.00545	No	No	No
Benzo(a)anthracene	0-3 ft	32,000	1,200	26.7	0.0664	Yes	No	**Yes**
Benzo(a)pyrene	0-3 ft	34,000	1,200	28.3	0.0705	Yes	No	**Yes**
Benzo(b)fluoranthene	0-3 ft	65,000	1,200	54.2	0.135	Yes	Yes	**Yes**
Benzo(g,h,i)perylene	0-3 ft	18,000	NA (7)	15.0	0.0373	Yes	No	**Yes**
Benzo(k)fluoranthene	0-3 ft	65,000	1,200	54.2	0.135	Yes	Yes	**Yes**
Benzofluoranthenes, Total	0-3 ft	31,300	NA (7)	26.1	0.0649	Yes	No	**Yes**
Chrysene	0-3 ft	35,300	1,200	29.4	0.0732	Yes	No	**Yes**
Dibenz(a,h)anthracene	0-3 ft	9,900	1,200	8.25	0.0205	No	No	No
Fluoranthene	0-3 ft	54,000	NA (7)	45.0	0.112	Yes	No	**Yes**
Indeno(1,2,3-cd)pyrene	0-3 ft	20,000	1,200	16.7	0.0415	Yes	No	**Yes**
Pyrene	0-3 ft	67,100	NA (7)	55.9	0.139	Yes	Yes	**Yes**
TPH (mg/kg)								
Diesel Range Organics	0-1 ft	1,000	NA	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	23,900	NA	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	9,450	NA	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	1,000	NA	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	23,900	NA	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	9,450	NA	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

Hierarchy of Terrestrial Plant SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.

(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

Table N-6
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(5 of 5)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)

(3) Efroymson RA, ME Wil, GW Suter II, and AC Wooten. 1997. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. November. ORNL. ES/ER/TM-85/R3.

(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Multiple COIs Simultaneously within a Given Medium

(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.

Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific

Q = Receptor designator

0-1 ft bgs Soil Interval

Nij = total number of *i* contaminants in medium *j* = 37

Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 347

0-3 ft bgs Soil Interval

Nij = total number of *i* contaminants in medium *j* = 39

Tj (0-3 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 402

Assumptions: Q = 1 for terrestrial T&E species and all aquatic species

Q = 5 for all common terrestrial species

For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

(6) The SLV for naphthalene was used to screen the individual and total LPAHs without SLVs.

(7) The SLV for the benzo(a)pyrene was used to screen the individual HPAHs without SLVs.

Table N-7
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(1 of 5)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)								
Antimony	0-1 ft	4.20	78	0.0538	0.00075	No	No	No
Cadmium	0-1 ft	2.09	140	0.0149	0.00021	No	No	No
Lead	0-1 ft	741	1,700	0.436	0.00614	No	No	No
Mercury	0-1 ft	4.15	0.1	41.5	0.585	Yes	Yes	**Yes**
Silver	0-1 ft	1.50	50	0.0300	0.00042	No	No	No
Zinc	0-1 ft	635	120	5.29	0.0745	Yes	No	**Yes**
Antimony	0-3 ft	4.20	78	0.0538	0.000709	No	No	No
Arsenic	0-3 ft	30.1	60	0.502	0.00660	No	No	No
Cadmium	0-3 ft	3.54	140	0.0253	0.000333	No	No	No
Lead	0-3 ft	1,660	1,700	0.976	0.0128	No	No	No
Mercury	0-3 ft	4.15	0.1	41.5	0.546	Yes	Yes	**Yes**
Silver	0-3 ft	1.50	50	0.0300	0.000395	No	No	No
Zinc	0-3 ft	1,140	120	9.50	0.125	Yes	No	**Yes**
BUTYLTINS (ug/kg)								
Dibutyltin	0-1 ft	20.2	NA	- -	- -	- -	- -	Yes - No SLV
Monobutyltin	0-1 ft	38.0	NA	- -	- -	- -	- -	Yes - No SLV
Tributyltin	0-1 ft	165	NA	- -	- -	- -	- -	Yes - No SLV
Dibutyltin	0-3 ft	20.2	NA	- -	- -	- -	- -	Yes - No SLV
Monobutyltin	0-3 ft	38.0	NA	- -	- -	- -	- -	Yes - No SLV
Tributyltin	0-3 ft	165	NA	- -	- -	- -	- -	Yes - No SLV
PESTICIDES (ug/kg)								
4,4'-DDT	0-1 ft	28.0	NA	- -	- -	- -	- -	Yes - No SLV
Total DDTs	0-1 ft	29.9	NA	- -	- -	- -	- -	Yes - No SLV
Chlordane (technical)	0-1 ft	1,560	NA	- -	- -	- -	- -	Yes - No SLV
4,4'-DDT	0-3 ft	28.0	NA	- -	- -	- -	- -	Yes - No SLV
Total DDTs	0-3 ft	29.9	NA	- -	- -	- -	- -	Yes - No SLV
Chlordane (technical)	0-3 ft	1,560	NA	- -	- -	- -	- -	Yes - No SLV
Heptachlor	0-3 ft	3.07	NA	- -	- -	- -	- -	Yes - No SLV
PCBs (ug/kg)								
Aroclor 1248	0-1 ft	968	2,510	0.386	0.00543	No	No	No
Aroclor 1254	0-1 ft	78.6	2,510	0.0313	0.000441	No	No	No
Aroclor 1260	0-1 ft	660	2,510	0.263	0.00370	No	No	No
Aroclor 1248	0-3 ft	968	2,510	0.386	0.00507	No	No	No
Aroclor 1254	0-3 ft	86.1	2,510	0.0343	0.000451	No	No	No

Table N-7
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(2 of 5)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
Aroclor 1260	0-3 ft	660	2,510	0.263	0.00346	No	No	No
HERBICIDES (ug/kg)								
2,4,5-T	0-1 ft	93.0	NA	- -	- -	- -	- -	Yes - No SLV
Dichloroprop	0-1 ft	180	NA	- -	- -	- -	- -	Yes - No SLV
MCPP	0-1 ft	14,000	NA	- -	- -	- -	- -	Yes - No SLV
2,4,5-T	0-3 ft	93.0	NA	- -	- -	- -	- -	Yes - No SLV
Dichloroprop	0-3 ft	180	NA	- -	- -	- -	- -	Yes - No SLV
MCPP	0-3 ft	14,000	NA	- -	- -	- -	- -	Yes - No SLV
VOCs (ug/kg)								
1,2,4-Trimethylbenzene	0-1 ft	14,300	NA	- -	- -	- -	- -	Yes - No SLV
1,3,5-Trimethylbenzene	0-1 ft	5,410	NA	- -	- -	- -	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-1 ft	1,000	NA	- -	- -	- -	- -	Yes - No SLV
Ethylbenzene	0-1 ft	2,700	2,260	1.19	0.0168	No	No	No
m,p-Xylenes	0-1 ft	9,800	NA	- -	- -	- -	- -	Yes - No SLV
Naphthalene	0-1 ft	8,360	NA	- -	- -	- -	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-1 ft	65.0	NA	- -	- -	- -	- -	Yes - No SLV
Toluene	0-1 ft	5.30	NA	- -	- -	- -	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-3 ft	14,300	NA	- -	- -	- -	- -	Yes - No SLV
1,3,5-Trimethylbenzene	0-3 ft	5,410	NA	- -	- -	- -	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-3 ft	1,000	NA	- -	- -	- -	- -	Yes - No SLV
Naphthalene	0-3 ft	8,360	NA	- -	- -	- -	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-3 ft	65.0	NA	- -	- -	- -	- -	Yes - No SLV
Toluene	0-3 ft	5.30	NA	- -	- -	- -	- -	Yes - No SLV
SVOCs (ug/kg)								
Benzoic Acid	0-1 ft	553	NA	- -	- -	- -	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-1 ft	21,000	NA	- -	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-1 ft	68.7	NA	- -	- -	- -	- -	Yes - No SLV
Carbazole	0-1 ft	2,650	2,260	1.17	0.0165	No	No	No
Dibenzofuran	0-1 ft	810	NA	- -	- -	- -	- -	Yes - No SLV
Diethyl Phthalate	0-1 ft	73.4	NA	- -	- -	- -	- -	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	1,800	NA	- -	- -	- -	- -	Yes - No SLV
Pentachlorophenol	0-1 ft	201	31,000	0.00648	0.0000913	No	No	No
Benzoic Acid	0-3 ft	553	NA	- -	- -	- -	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-3 ft	21,000	NA	- -	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-3 ft	68.7	NA	- -	- -	- -	- -	Yes - No SLV

Table N-7
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(3 of 5)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
Carbazole	0-3 ft	2,840	2,260	1.26	0.0165	No	No	No
Dibenzofuran	0-3 ft	810	NA	- -	- -	- -	- -	Yes - No SLV
Diethyl Phthalate	0-3 ft	73.4	NA	- -	- -	- -	- -	Yes - No SLV
Di-n-butyl Phthalate	0-3 ft	1,800	NA	- -	- -	- -	- -	Yes - No SLV
Pentachlorophenol	0-3 ft	201	31,000	0.00648	0.0000853	No	No	No
PAHs (ug/kg)								
2-Methylnaphthalene	0-1 ft	1,530	NA	- -	- -	- -	- -	Incl in tLPAH
Acenaphthene	0-1 ft	2,600	NA	- -	- -	- -	- -	Incl in tLPAH
Acenaphthylene	0-1 ft	78.1	NA	- -	- -	- -	- -	Incl in tLPAH
Anthracene	0-1 ft	2,700	NA	- -	- -	- -	- -	Incl in tLPAH
Fluorene	0-1 ft	1,200	NA	- -	- -	- -	- -	Incl in tLPAH
Naphthalene	0-1 ft	823	NA	- -	- -	- -	- -	Incl in tLPAH
Phenanthrene	0-1 ft	12,000	NA	- -	- -	- -	- -	Incl in tLPAH
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	18,674	29,000	0.644	0.00907	No	No	No
Benzo(a)anthracene	0-1 ft	32,000	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(a)pyrene	0-1 ft	33,000	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(b)fluoranthene	0-1 ft	65,000	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(g,h,i)perylene	0-1 ft	18,000	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(k)fluoranthene	0-1 ft	65,000	NA	- -	- -	- -	- -	Incl in tHPAH
Benzofluoranthenes, Total	0-1 ft	14,700	NA	- -	- -	- -	- -	Incl in tHPAH
Chrysene	0-1 ft	32,000	NA	- -	- -	- -	- -	Incl in tHPAH
Dibenz(a,h)anthracene	0-1 ft	9,900	NA	- -	- -	- -	- -	Incl in tHPAH
Fluoranthene	0-1 ft	54,000	NA	- -	- -	- -	- -	Incl in tHPAH
Indeno(1,2,3-cd)pyrene	0-1 ft	19,000	NA	- -	- -	- -	- -	Incl in tHPAH
Pyrene	0-1 ft	40,000	NA	- -	- -	- -	- -	Incl in tHPAH
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	367,900	18,000	20.4	0.288	Yes	No	**Yes**
2-Methylnaphthalene	0-3 ft	1,530	NA	- -	- -	- -	- -	Incl in tLPAH
Acenaphthene	0-3 ft	2,600	NA	- -	- -	- -	- -	Incl in tLPAH
Acenaphthylene	0-3 ft	111	NA	- -	- -	- -	- -	Incl in tLPAH
Anthracene	0-3 ft	8,440	NA	- -	- -	- -	- -	Incl in tLPAH
Fluorene	0-3 ft	1,610	NA	- -	- -	- -	- -	Incl in tLPAH
Naphthalene	0-3 ft	823	NA	- -	- -	- -	- -	Incl in tLPAH
Phenanthrene	0-3 ft	21,900	NA	- -	- -	- -	- -	Incl in tLPAH
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	34,767	29,000	1.20	0.0158	No	No	No
Benzo(a)anthracene	0-3 ft	32,000	NA	- -	- -	- -	- -	Incl in tHPAH

Table N-7
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(4 of 5)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
Benzo(a)pyrene	0-3 ft	34,000	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(b)fluoranthene	0-3 ft	65,000	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(g,h,i)perylene	0-3 ft	18,000	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(k)fluoranthene	0-3 ft	65,000	NA	- -	- -	- -	- -	Incl in tHPAH
Benzofluoranthenes, Total	0-3 ft	31,300	NA	- -	- -	- -	- -	Incl in tHPAH
Chrysene	0-3 ft	35,300	NA	- -	- -	- -	- -	Incl in tHPAH
Dibenz(a,h)anthracene	0-3 ft	9,900	NA	- -	- -	- -	- -	Incl in tHPAH
Fluoranthene	0-3 ft	54,000	NA	- -	- -	- -	- -	Incl in tHPAH
Indeno(1,2,3-cd)pyrene	0-3 ft	20,000	NA	- -	- -	- -	- -	Incl in tHPAH
Pyrene	0-3 ft	67,100	NA	- -	- -	- -	- -	Incl in tHPAH
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	367,900	18,000	20.4	0.269	Yes	No	**Yes**
TPH (mg/kg)								
Diesel Range Organics	0-1 ft	1,000	NA	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	23,900	NA	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	9,450	NA	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	1,000	NA	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	23,900	NA	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	9,450	NA	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
Incl in tHPAH = COI is included in the Total HPAH Screening
Incl in tLPAH = COI is included in the Total LPAH Screening
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

Hierarchy of Terrestrial Invertebrate SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

Table N-7
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(5 of 5)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)

(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.

(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

(3) RA Efroymson. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process, Nov 1997 Revision. ORNL ES/ER/TM-126/R2.

(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Multiple COIs Simultaneously within a Given Medium

(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.

Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific

Q = Receptor designator

0-1 ft bgs Soil Interval

Nij = total number of *i* contaminants in medium *j* = 14

Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 71.5

0-3 ft bgs Soil Interval

Nij = total number of *i* contaminants in medium *j* = 14

Tj (0-3 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 76.2

Assumptions: Q = 1 for terrestrial T&E species and all aquatic species

Q = 5 for all common terrestrial species

For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-8
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(1 of 4)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)										
Antimony	0-1 ft	1.36	0.176	7.73	0.0426	No	No	No	--	No
Cadmium	0-1 ft	0.974	0.77	1.26	0.00697	No	No	Yes	Yes	No
Lead	0-1 ft	332	25.5	13.0	0.0718	Yes	No	Yes	Yes	**Yes**
Mercury	0-1 ft	1.57	0.066	23.8	0.131	Yes	No	Yes	Yes	**Yes**
Silver	0-1 ft	0.468	4.2	0.111	0.000614	No	No	Yes	Yes	No
Zinc	0-1 ft	207	71.7	2.89	0.0159	No	No	Yes	Yes	No
Antimony	0-3 ft	1.48	0.176	8.41	0.0456	Yes	No	No	--	**Yes**
Arsenic	0-3 ft	10.5	43	0.244	0.00132	No	No	Yes	Yes	No
Cadmium	0-3 ft	1.17	0.77	1.52	0.00824	No	No	Yes	Yes	No
Lead	0-3 ft	511	25.5	20.0	0.109	Yes	No	Yes	Yes	**Yes**
Mercury	0-3 ft	1.45	0.066	22.0	0.119	Yes	No	Yes	Yes	**Yes**
Silver	0-3 ft	0.450	4.2	0.107	0.000581	No	No	Yes	Yes	No
Zinc	0-3 ft	417	71.7	5.82	0.0315	No	No	Yes	Yes	No
BUTYLTINS (ug/kg)										
Dibutyltin	0-1 ft	20.2	28,000	0.000721	0.00000398	No	No	No	--	No
Monobutyltin	0-1 ft	38.0	28,000	0.00136	0.00000748	No	No	No	--	No
Tributyltin	0-1 ft	165	28,000	0.00589	0.0000325	No	No	Yes	No	**Yes-Bio**
Dibutyltin	0-3 ft	20.1	28,000	0.000718	0.00000389	No	No	No	--	No
Monobutyltin	0-3 ft	38.0	28,000	0.00136	0.00000736	No	No	No	--	No
Tributyltin	0-3 ft	60.1	28,000	0.00215	0.0000116	No	No	Yes	No	**Yes-Bio**
PESTICIDES (ug/kg)										
4,4'-DDT	0-1 ft	12.2	93	0.131	0.000723	No	No	Yes	Yes	No
Total DDTs	0-1 ft	13.9	93	0.149	0.000823	No	No	Yes	Yes	No
Chlordane (technical)	0-1 ft	1,560	9,000	0.173	0.000956	No	No	Yes	No	**Yes-Bio**
4,4'-DDT	0-3 ft	11.8	93	0.127	0.000688	No	No	Yes	Yes	No
Total DDTs	0-3 ft	13.3	93	0.143	0.000778	No	No	Yes	Yes	No
Chlordane (technical)	0-3 ft	1,560	9,000	0.173	0.000940	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-3 ft	2.86	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)										
Aroclor 1248	0-1 ft	386	655	0.589	0.00325	No	No	Yes	Yes	No
Aroclor 1254	0-1 ft	22.5	655	0.0344	0.000189	No	No	Yes	Yes	No
Aroclor 1260	0-1 ft	251	655	0.383	0.00211	No	No	Yes	Yes	No
Aroclor 1248	0-3 ft	364	655	0.556	0.00301	No	No	Yes	Yes	No
Aroclor 1254	0-3 ft	31.1	655	0.0475	0.000257	No	No	Yes	Yes	No
Aroclor 1260	0-3 ft	190	655	0.290	0.00157	No	No	Yes	Yes	No
HERBICIDES (ug/kg)										
2,4,5-T	0-1 ft	71.6	93	0.770	0.00424	No	No	No	- -	No
Dichloroprop	0-1 ft	175	93	1.88	0.0104	No	No	No	- -	No
MCPP	0-1 ft	11,700	93	126	0.694	Yes	Yes	No	- -	**Yes**
2,4,5-T	0-3 ft	70.3	93	0.756	0.00410	No	No	No	- -	No

Table N-8
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(2 of 4)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Dichloroprop	0-3 ft	174	93	1.87	0.0101	No	No	No	- -	No
MCPP	0-3 ft	11,200	93	120	0.653	Yes	Yes	No	- -	**Yes**
VOCs (ug/kg)										
1,2,4-Trimethylbenzene	0-1 ft	3,030	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
1,3,5-Trimethylbenzene	0-1 ft	1,200	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-1 ft	12	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Ethylbenzene	0-1 ft	2,700	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	9,800	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Naphthalene	0-1 ft	4,190	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-1 ft	16.7	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Toluene	0-1 ft	1.80	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-3 ft	2,790	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
1,3,5-Trimethylbenzene	0-3 ft	1,110	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-3 ft	12	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Naphthalene	0-3 ft	3,830	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-3 ft	16.5	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Toluene	0-3 ft	1.64	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
SVOCs (ug/kg)										
Benzoic Acid	0-1 ft	200	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-1 ft	9,680	4,500	2.15	0.0119	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-1 ft	36.6	450	0.0813	0.000448	No	No	Yes	No	**Yes-Bio**
Carbazole	0-1 ft	751	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-1 ft	152	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Diethyl Phthalate	0-1 ft	50.0	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	232	450	0.516	0.00284	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-1 ft	103	2,100	0.0490	0.000270	No	No	Yes	Yes	No
Benzoic Acid	0-3 ft	218	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-3 ft	6,380	4,500	1.42	0.00769	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-3 ft	34.9	450	0.0776	0.000421	No	No	Yes	No	**Yes-Bio**
Carbazole	0-3 ft	964	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-3 ft	164	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Diethyl Phthalate	0-3 ft	38.9	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-3 ft	217	450	0.482	0.00262	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-3 ft	99	2,100	0.0470	0.000255	No	No	Yes	Yes	No
PAHs (ug/kg)										
2-Methylnaphthalene	0-1 ft	213	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthene	0-1 ft	713	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthylene	0-1 ft	29.2	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Anthracene	0-1 ft	924	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluorene	0-1 ft	222	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Naphthalene	0-1 ft	172	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Phenanthrene	0-1 ft	3,660	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**

Table N-8
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(3 of 4)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	5,810	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)anthracene	0-1 ft	8,340	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)pyrene	0-1 ft	8,700	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(b)fluoranthene	0-1 ft	16,000	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(g,h,i)perylene	0-1 ft	4,590	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(k)fluoranthene	0-1 ft	30,200	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzofluoranthenes, Total	0-1 ft	14,700	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Chrysene	0-1 ft	8,400	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenz(a,h)anthracene	0-1 ft	4,230	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluoranthene	0-1 ft	14,500	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	0-1 ft	5,040	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Pyrene	0-1 ft	12,300	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	90,158	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
2-Methylnaphthalene	0-3 ft	199	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthene	0-3 ft	913	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthylene	0-3 ft	34.9	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Anthracene	0-3 ft	1,930	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluorene	0-3 ft	324	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Naphthalene	0-3 ft	157	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Phenanthrene	0-3 ft	5,780	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	9,226	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)anthracene	0-3 ft	9,960	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)pyrene	0-3 ft	11,200	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(b)fluoranthene	0-3 ft	15,200	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(g,h,i)perylene	0-3 ft	5,820	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(k)fluoranthene	0-3 ft	26,300	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzofluoranthenes, Total	0-3 ft	31,300	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Chrysene	0-3 ft	11,000	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenz(a,h)anthracene	0-3 ft	2,060	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluoranthene	0-3 ft	17,500	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	0-3 ft	6,800	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Pyrene	0-3 ft	18,800	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	101,525	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
TPH (mg/kg)										
Diesel Range Organics	0-1 ft	3670	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	307	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	17,700	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	3340	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	157	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	16,000	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).

Table N-8
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(4 of 4)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)

CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.

Hierarchy of Avian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7
72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 21
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 181
0-3 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 22
Tj (0-3 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 184
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-9
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(1 of 4)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
INORGANICS (mg/kg)										
Antimony	0-1 ft	1.36	0.27	5.04	0.00666	No	No	No	--	No
Cadmium	0-1 ft	0.974	0.36	2.71	0.00358	No	No	Yes	Yes	No
Lead	0-1 ft	332	56	5.93	0.00784	No	No	Yes	Yes	No
Mercury	0-1 ft	1.57	0.146	10.8	0.0142	No	No	Yes	Yes	No
Silver	0-1 ft	0.468	14	0.0334	0.0000442	No	No	Yes	Yes	No
Zinc	0-1 ft	207	79	2.62	0.00346	No	No	Yes	Yes	No
Antimony	0-3 ft	1.48	0.27	5.48	0.00726	No	No	No	--	No
Arsenic	0-3 ft	10.5	46	0.228	0.000302	No	No	Yes	Yes	No
Cadmium	0-3 ft	1.17	0.36	3.25	0.00430	No	No	Yes	Yes	No
Lead	0-3 ft	511	56	9.13	0.0121	No	No	Yes	Yes	No
Mercury	0-3 ft	1.45	0.146	9.93	0.0132	No	No	Yes	Yes	No
Silver	0-3 ft	0.450	14	0.0321	0.0000426	No	No	Yes	Yes	No
Zinc	0-3 ft	417	79	5.28	0.00699	No	No	Yes	Yes	No
BUTYLTINS (ug/kg)										
Dibutyltin	0-1 ft	20.2	1,300,000	0.0000155	0.0000000205	No	No	No	--	No
Monobutyltin	0-1 ft	38.0	1,300,000	0.0000292	0.0000000386	No	No	No	--	No
Tributyltin	0-1 ft	165	1,300,000	0.000127	0.000000168	No	No	Yes	No	**Yes-Bio**
Dibutyltin	0-3 ft	20.1	1,300,000	0.0000155	0.0000000205	No	No	No	--	No
Monobutyltin	0-3 ft	38.0	1,300,000	0.0000292	0.0000000387	No	No	No	--	No
Tributyltin	0-3 ft	60.1	1,300,000	0.0000462	0.0000000612	No	No	Yes	No	**Yes-Bio**
PESTICIDES (ug/kg)										
4,4'-DDT	0-1 ft	12.2	21	0.581	0.000768	No	No	Yes	Yes	No
Total DDTs	0-1 ft	13.9	21	0.661	0.000874	No	No	Yes	Yes	No
Chlordane (technical)	0-1 ft	1,560	250,000	0.00624	0.00000825	No	No	Yes	No	**Yes-Bio**
4,4'-DDT	0-3 ft	11.8	21	0.562	0.000744	No	No	Yes	Yes	No
Total DDTs	0-3 ft	13.3	21	0.635	0.000841	No	No	Yes	Yes	No
Chlordane (technical)	0-3 ft	1,560	250,000	0.00624	0.00000827	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-3 ft	2.86	15,000	0.000191	0.000000253	No	No	Yes	No	**Yes-Bio**
PCBs (ug/kg)										
Aroclor 1248	0-1 ft	386	371	1.04	0.00138	No	No	Yes	Yes	No
Aroclor 1254	0-1 ft	22.5	371	0.0606	0.0000802	No	No	Yes	Yes	No
Aroclor 1260	0-1 ft	251	371	0.677	0.000894	No	No	Yes	Yes	No
Aroclor 1248	0-3 ft	364	371	0.981	0.00130	No	No	Yes	Yes	No
Aroclor 1254	0-3 ft	31.1	371	0.0838	0.000111	No	No	Yes	Yes	No
Aroclor 1260	0-3 ft	190	371	0.512	0.000678	No	No	Yes	Yes	No
HERBICIDES (ug/kg)										
2,4,5-T	0-1 ft	71.6	21	3.41	0.00451	No	No	No	--	No
Dichloroprop	0-1 ft	175	21	8.33	0.0110	No	No	No	--	No
MCPP	0-1 ft	11,700	21	557	0.736	No	No	No	--	No
2,4,5-T	0-3 ft	70.3	21	3.35	0.00443	No	No	No	--	No
Dichloroprop	0-3 ft	174	21	8.29	0.0110	No	No	No	--	No
MCPP	0-3 ft	11,200	21	533	0.706	No	No	No	--	No

Table N-9
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(2 of 4)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
VOCs (ug/kg)										
1,2,4-Trimethylbenzene	0-1 ft	3,030	1,440,000	0.00210	0.00000278	No	No	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-1 ft	1,200	1,440,000	0.000833	0.00000110	No	No	No	- -	No
Dichloromethane (Methylene Chloride)	0-1 ft	12	730,000	0.0000164	0.0000000217	No	No	No	- -	No
Ethylbenzene	0-1 ft	2,700	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	9,800	120,000	0.0817	0.000108	No	No	No	- -	No
Naphthalene	0-1 ft	4,190	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-1 ft	16.7	80,000	0.000209	0.000000276	No	No	No	- -	No
Toluene	0-1 ft	1.80	1,440,000	0.00000125	0.00000000165	No	No	No	- -	No
1,2,4-Trimethylbenzene	0-3 ft	2,790	1,440,000	0.00194	0.00000257	No	No	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-3 ft	1,110	1,440,000	0.000771	0.00000102	No	No	No	- -	No
Dichloromethane (Methylene Chloride)	0-3 ft	12	730,000	0.0000164	0.0000000218	No	No	No	- -	No
Naphthalene	0-3 ft	3,830	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-3 ft	16.5	80,000	0.000206	0.000000273	No	No	No	- -	No
Toluene	0-3 ft	1.64	1,440,000	0.00000114	0.00000000151	No	No	No	- -	No
SVOCs (ug/kg)										
Benzoic Acid	0-1 ft	200	1,440,000	0.000139	0.000000184	No	No	No	- -	No
Bis(2-ethylhexyl) Phthalate	0-1 ft	9,680	1,020,000	0.00949	0.0000125	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-1 ft	36.6	30,000,000	0.00000122	0.00000000161	No	No	Yes	No	**Yes-Bio**
Carbazole	0-1 ft	751	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-1 ft	152	2	76.0	0.100	No	No	Yes	No	**Yes-Bio**
Diethyl Phthalate	0-1 ft	50.0	250,000,000	0.000000200	0.000000000264	No	No	No	- -	No
Di-n-butyl Phthalate	0-1 ft	232	30,000,000	0.00000773	0.00000001022	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-1 ft	103	2,800	0.0368	0.0000486	No	No	Yes	Yes	No
Benzoic Acid	0-3 ft	218	1,440,000	0.000151	0.000000201	No	No	No	- -	No
Bis(2-ethylhexyl) Phthalate	0-3 ft	6,380	1,020,000	0.00625	0.00000829	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-3 ft	34.9	30,000,000	0.00000116	0.00000000154	No	No	Yes	No	**Yes-Bio**
Carbazole	0-3 ft	964	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-3 ft	164	2	82.0	0.109	No	No	Yes	No	**Yes-Bio**
Diethyl Phthalate	0-3 ft	38.9	250,000,000	0.000000156	0.000000000206	No	No	No	- -	No
Di-n-butyl Phthalate	0-3 ft	217	30,000,000	0.00000723	0.00000000958	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-3 ft	99	2,800	0.0353	0.0000467	No	No	Yes	Yes	No
PAHs (ug/kg)										
2-Methylnaphthalene	0-1 ft	213	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Acenaphthene	0-1 ft	713	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Acenaphthylene	0-1 ft	29.2	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Anthracene	0-1 ft	924	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Fluorene	0-1 ft	222	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Naphthalene	0-1 ft	172	NA	- -	- -	- -	- -	No	- -	No
Phenanthrene	0-1 ft	3,660	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	5,810	100,000	0.0581	0.0000768	No	No	Yes	Yes	No
Benzo(a)anthracene	0-1 ft	8,340	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(a)pyrene	0-1 ft	8,700	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No

Table N-9
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(3 of 4)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Benzo(b)fluoranthene	0-1 ft	16,000	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(g,h,i)perylene	0-1 ft	4,590	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(k)fluoranthene	0-1 ft	30,200	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzofluoranthenes, Total	0-1 ft	14,700	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Chrysene	0-1 ft	8,400	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Dibenz(a,h)anthracene	0-1 ft	4,230	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Fluoranthene	0-1 ft	14,500	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Indeno(1,2,3-cd)pyrene	0-1 ft	5,040	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Pyrene	0-1 ft	12,300	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	90,158	1,100	82.0	0.108	No	No	Yes	Yes	No
2-Methylnaphthalene	0-3 ft	199	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Acenaphthene	0-3 ft	913	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Acenaphthylene	0-3 ft	34.9	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Anthracene	0-3 ft	1,930	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Fluorene	0-3 ft	324	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Naphthalene	0-3 ft	157	NA	- -	- -	- -	- -	No	- -	No
Phenanthrene	0-3 ft	5,780	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	9,226	100,000	0.092	0.000122	No	No	Yes	Yes	No
Benzo(a)anthracene	0-3 ft	9,960	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(a)pyrene	0-3 ft	11,200	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(b)fluoranthene	0-3 ft	15,200	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(g,h,i)perylene	0-3 ft	5,820	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(k)fluoranthene	0-3 ft	26,300	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzofluoranthenes, Total	0-3 ft	31,300	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Chrysene	0-3 ft	11,000	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Dibenz(a,h)anthracene	0-3 ft	2,060	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Fluoranthene	0-3 ft	17,500	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Indeno(1,2,3-cd)pyrene	0-3 ft	6,800	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Pyrene	0-3 ft	18,800	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	101,525	1,100	92.3	0.122	No	No	Yes	Yes	No
TPH (mg/kg)										
Diesel Range Organics	0-1 ft	3670	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	307	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	17,700	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	3340	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	157	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	16,000	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons

Table N-9
Identification of CPECs in Soil at Landfill AOPC - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(4 of 4)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)

Incl in tHPAH = COI is included in the Total HPAH Screening
Incl in tLPAH = COI is included in the Total LPAH Screening
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Mammalian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 32
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 757
0-3 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 33
Tj (0-3 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 755
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-10
Identification of CPECs in Groundwater, Seep Water, and Surface Water at Landfill AOPC - Multiple COIs for Aquatic Organisms
Bradford Island - Upland Operable Unit
(1 of 3)

Chemicals of Interest	Medium	Dissolved or Total (D or T)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	(Tij/Tj) (9)	Chemical is a Concern for Aquatic Organisms? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (9) (Q = 1)
INORGANICS (mg/L)									
Arsenic	Groundwater	D	0.00749	0.15	0.0499	0.000479	No	Yes	**Yes-Bio**
Barium	Groundwater	D	0.134	0.004	33.5	0.321	Yes	No	**Yes**
Calcium	Groundwater	D	91.6	116	0.790	0.00757	No	No	No
Iron	Groundwater	D	31.0	1.0	31.0	0.297	Yes	No	**Yes**
Lead	Groundwater	D	0.000524	0.0014	0.365	0.00350	No	Yes	**Yes-Bio**
Magnesium	Groundwater	D	16.3	82	0.199	0.00191	No	No	No
Manganese	Groundwater	D	3.50	0.12	29.2	0.280	Yes	No	**Yes**
Nickel	Groundwater	D	0.0186	0.034	0.551	0.00529	No	No	No
Potassium	Groundwater	D	7.47	53	0.141	0.00135	No	No	No
Sodium	Groundwater	D	648	680	0.953	0.00914	No	No	No
Zinc	Groundwater	D	0.196	0.077	2.56	0.0245	No	Yes	**Yes-Bio**
Antimony	Seep Water	D	0.00228	1.00	0.00228	0.0000261	No	No	No
Arsenic	Seep Water	D	0.00100	0.15	0.00667	0.0000763	No	Yes	**Yes-Bio**
Barium	Seep Water	D	0.277	0.004	69.3	0.793	Yes	No	**Yes**
Calcium	Seep Water	D	76.4	116	0.659	0.00754	No	No	No
Copper	Seep Water	D	0.00109	0.006	0.188	0.00216	No	No	No
Iron	Seep Water	D	3.21	1.0	3.21	0.0368	No	No	No
Lead	Seep Water	D	0.0000650	0.0014	0.0452	0.000518	No	Yes	**Yes-Bio**
Magnesium	Seep Water	D	16.6	82	0.202	0.00232	No	No	No
Manganese	Seep Water	D	1.48	0.12	12.3	0.141	Yes	No	**Yes**
Nickel	Seep Water	D	0.00222	0.034	0.0658	0.000753	No	No	No
Potassium	Seep Water	D	4.16	53	0.0785	0.000899	No	No	No
Sodium	Seep Water	D	19.7	680	0.0290	0.000332	No	No	No
Zinc	Seep Water	D	0.0856	0.077	1.12	0.0128	No	Yes	**Yes-Bio**
Arsenic	Surface Water	D	0.00101	0.15	0.00673	0.0204	No	Yes	**Yes-Bio**
Calcium	Surface Water	D	20.5	116	0.177	0.536	No	No	No
Iron	Surface Water	D	0.00920	1.0	0.00920	0.0279	No	No	No
Lead	Surface Water	D	0.0000160	0.0014	0.0111	0.0338	No	Yes	**Yes-Bio**
Magnesium	Surface Water	D	6.33	82	0.0772	0.234	No	No	No
Manganese	Surface Water	D	0.00101	0.12	0.00842	0.0255	No	No	No
Potassium	Surface Water	D	1.51	53	0.0285	0.0865	No	No	No
Sodium	Surface Water	D	7.90	680	0.0116	0.0353	No	No	No
BUTYLTINS (ug/L)									
Dibutyltin	Groundwater	T	0.0586	0.063	0.930	0.00892	No	No	No
Monobutyltin	Groundwater	T	0.0254	0.063	0.403	0.00387	No	No	No

Table N-10
Identification of CPECs in Groundwater, Seep Water, and Surface Water at Landfill AOPC - Multiple COIs for Aquatic Organisms
Bradford Island - Upland Operable Unit
(2 of 3)

Chemicals of Interest	Medium	Dissolved or Total (D or T)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	(Tij/Tj) (9)	Chemical is a Concern for Aquatic Organisms? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (9) (Q = 1)
Tributyltin	Groundwater	T	0.0364	0.063	0.578	0.00554	No	Yes	**Yes-Bio**
HERBICIDES (ug/L)									
4-Nitrophenol	Groundwater	T	0.840	150	0.00560	0.0000537	No	No	No
Pentachlorophenol	Groundwater	T	0.112	15	0.00747	0.0000716	No	Yes	**Yes-Bio**
VOCs (ug/L)									
1,2,4-Trimethylbenzene	Groundwater	T	5.20	7.3	0.712	0.00683	No	Yes	**Yes-Bio**
Acetone	Groundwater	T	10.2	1,500	0.00680	0.0000652	No	No	No
Chloroform	Groundwater	T	0.498	1,240	0.000402	0.00000385	No	No	No
Isopropylbenzene	Groundwater	T	3.42	7.3	0.468	0.00449	No	Yes	**Yes-Bio**
n-Propylbenzene	Groundwater	T	1.32	7.3	0.181	0.00173	No	Yes	**Yes-Bio**
Tetrachloroethene (PCE)	Groundwater	T	2.80	840	0.00333	0.0000320	No	No	No
Vinyl Chloride	Groundwater	T	0.307	1,300	0.000236	0.00000227	No	No	No
Chloroform	Seep Water	T	2.80	1,240	0.00226	0.0000259	No	No	No
Tetrachloroethene (PCE)	Seep Water	T	4.40	840	0.00524	0.0000600	No	No	No
SVOCs (ug/L)									
Bis(2-ethylhexyl) Phthalate	Groundwater	T	4.70	3.0	1.57	0.0150	No	Yes	**Yes-Bio**
Diethyl Phthalate	Groundwater	T	0.873	210	0.00416	0.0000399	No	No	No
Di-n-octyl Phthalate	Groundwater	T	4.61	708	0.00651	0.0000625	No	Yes	**Yes-Bio**
Isophorone	Groundwater	T	0.177	2,340	0.0000756	0.000000726	No	No	No
Benzoic Acid	Seep Water	T	5.88	42	0.140	0.00160	No	No	No
PAHs (ug/L)									
2-Methylnaphthalene	Groundwater	T	0.175	72.16	0.00243	0.0000233	No	Yes	**Yes-Bio**
Acenaphthene	Groundwater	T	0.158	55.85	0.00283	0.0000271	No	Yes	**Yes-Bio**
Naphthalene	Groundwater	T	0.0873	193.5	0.000451	0.00000433	No	No	No
Phenanthrene	Groundwater	T	0.591	6.3	0.0938	0.000900	No	Yes	**Yes-Bio**
TPH (mg/L)									
Diesel Range Organics	Groundwater	T	0.388	NA	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	Groundwater	T	0.0604	NA	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	Groundwater	T	0.344	NA	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	Seep Water	T	0.130	NA	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	Seep Water	T	0.130	NA	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	Surface Water	T	0.0300	NA	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
SLV = screening level value

Table N-10
Identification of CPECs in Groundwater, Seep Water, and Surface Water at Landfill AOPC - Multiple COIs for Aquatic Organisms
Bradford Island - Upland Operable Unit
(3 of 3)

Chemicals of Interest	Medium	Dissolved or Total (D or T)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	(Tij/Tj) (9)	Chemical is a Concern for Aquatic Organisms? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (9) (Q = 1)

T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) In addition to seep water and surface water concentrations, concentrations in groundwater were compared to Selected Level II SLVs for surface water as a conservative measure (in the event that groundwater discharges to surface water).

Hierarchy of Aquatic Organisms SLV Selection (see Appendix J-5b)
(2) USEPA 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.
(3) Oregon Department of Environmental Quality (DEQ). Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Table 33A).
(4) DEQ 1998. Updated 2001. Guidance for Ecological risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.
(5) Suter GW II, and CL Tsao. 1996. Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on Oak Ridge Reservation: 1996 Revision. ORNL, Oak Ridge, TN. 104pp. ES/ER/TM-96/R2.
(6) USEPA 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. November. EPA-600-R-02-
(7) Canadian Council of Resource and Environment Ministers. 2007. Canadian Water Quality Guidelines for the Protection of Aquatic Life. December Accessed on 1/20/10 at http://ceqg-
(8) Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34 pages.

Multiple COIs Simultaneously within a Given Medium
(9) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
Groundwater
Nij = total number of i contaminants in medium j = 31
Tj (GW) = sum of toxicity ratios for all contaminants in medium j = 104
Seep Water
Nij = total number of i contaminants in medium j = 16
Tj (Seep) = sum of toxicity ratios for all contaminants in medium j = 87.3
Surface Water
Nij = total number of *i* contaminants in medium *j* = 8
Tj (SW) = sum of toxicity ratios for all contaminants in medium *j* = 0.330
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-11
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(1 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)							
Antimony	0-1 ft	13.7	5	2.74	Yes	No	**Yes**
Arsenic	0-1 ft	80.9	18	4.49	Yes	No	**Yes**
Cadmium	0-1 ft	17.3	32	0.541	No	No	No
Chromium	0-1 ft	2,650	28.1	94.3	Yes	Yes	**Yes**
Lead	0-1 ft	3,260	120	27.2	Yes	Yes	**Yes**
Nickel	0-1 ft	1,060	38	27.9	Yes	Yes	**Yes**
Selenium	0-1 ft	0.900	0.52	1.73	Yes	No	**Yes**
Silver	0-1 ft	0.431	560	0.000770	No	No	No
Zinc	0-1 ft	1,160	160	7.25	Yes	Yes	**Yes**
Antimony	0-3 ft	13.7	5	2.74	Yes	No	**Yes**
Arsenic	0-3 ft	80.9	18	4.49	Yes	No	**Yes**
Cadmium	0-3 ft	17.3	32	0.541	No	No	No
Chromium	0-3 ft	2,650	28.1	94.3	Yes	Yes	**Yes**
Lead	0-3 ft	3,260	120	27.2	Yes	Yes	**Yes**
Nickel	0-3 ft	1,060	38	27.9	Yes	Yes	**Yes**
Selenium	0-3 ft	0.900	0.52	1.73	Yes	No	**Yes**
Silver	0-3 ft	0.431	560	0.000770	No	No	No
Zinc	0-3 ft	1,160	160	7.25	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)							
Dibutyltin	0-1 ft	210	NA	- -	- -	- -	Yes - No SLV
Monobutyltin	0-1 ft	108	NA	- -	- -	- -	Yes - No SLV
Tributyltin	0-1 ft	1,860	NA	- -	- -	- -	Yes - No SLV
Dibutyltin	0-3 ft	210	NA	- -	- -	- -	Yes - No SLV
Monobutyltin	0-3 ft	108	NA	- -	- -	- -	Yes - No SLV
Tributyltin	0-3 ft	1,860	NA	- -	- -	- -	Yes - No SLV
PESTICIDES (ug/kg)							
4,4'-DDD	0-1 ft	0.990	NA	- -	- -	- -	Yes - No SLV
4,4'-DDE	0-1 ft	2.44	NA	- -	- -	- -	Yes - No SLV
4,4'-DDT	0-1 ft	140	NA	- -	- -	- -	Yes - No SLV
Total DDTs	0-1 ft	144	NA	- -	- -	- -	Yes - No SLV
BHC (delta)	0-1 ft	3.03	NA	- -	- -	- -	Yes - No SLV
BHC (gamma) Lindane	0-1 ft	9.68	NA	- -	- -	- -	Yes - No SLV
Chlordane (alpha)	0-1 ft	1.50	NA	- -	- -	- -	Yes - No SLV
Chlordane (gamma)	0-1 ft	97.0	NA	- -	- -	- -	Yes - No SLV
Dieldrin	0-1 ft	0.823	NA	- -	- -	- -	Yes - No SLV
Endosulfan I	0-1 ft	6.45	NA	- -	- -	- -	Yes - No SLV
Endosulfan II	0-1 ft	1.99	NA	- -	- -	- -	Yes - No SLV
Endosulfan Sulfate	0-1 ft	3.30	NA	- -	- -	- -	Yes - No SLV

Table N-11
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(2 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Endrin	0-1 ft	17.0	NA	- -	- -	- -	Yes - No SLV
Endrin Aldehyde	0-1 ft	16.0	NA	- -	- -	- -	Yes - No SLV
Endrin Ketone	0-1 ft	13.0	NA	- -	- -	- -	Yes - No SLV
Heptachlor	0-1 ft	2.90	1,000	0.00290	No	No	No
Methoxychlor	0-1 ft	1.20	NA	- -	- -	- -	Yes - No SLV
4,4'-DDD	0-3 ft	0.990	NA	- -	- -	- -	Yes - No SLV
4,4'-DDE	0-3 ft	2.44	NA	- -	- -	- -	Yes - No SLV
4,4'-DDT	0-3 ft	140	NA	- -	- -	- -	Yes - No SLV
Total DDTs	0-3 ft	144	NA	- -	- -	- -	Yes - No SLV
BHC (delta)	0-3 ft	3.03	NA	- -	- -	- -	Yes - No SLV
BHC (gamma) Lindane	0-3 ft	9.68	NA	- -	- -	- -	Yes - No SLV
Chlordane (alpha)	0-3 ft	1.50	NA	- -	- -	- -	Yes - No SLV
Chlordane (gamma)	0-3 ft	97.0	NA	- -	- -	- -	Yes - No SLV
Dieldrin	0-3 ft	0.823	NA	- -	- -	- -	Yes - No SLV
Endosulfan I	0-3 ft	6.45	NA	- -	- -	- -	Yes - No SLV
Endosulfan II	0-3 ft	1.99	NA	- -	- -	- -	Yes - No SLV
Endosulfan Sulfate	0-3 ft	3.30	NA	- -	- -	- -	Yes - No SLV
Endrin	0-3 ft	17.0	NA	- -	- -	- -	Yes - No SLV
Endrin Aldehyde	0-3 ft	16.0	NA	- -	- -	- -	Yes - No SLV
Endrin Ketone	0-3 ft	13.0	NA	- -	- -	- -	Yes - No SLV
Heptachlor	0-3 ft	2.90	1,000	0.00290	No	No	No
Methoxychlor	0-3 ft	1.20	NA	- -	- -	- -	Yes - No SLV
PCBs (ug/kg)							
Aroclor 1254	0-1 ft	1,700	40,000	0.0425	No	No	No
Aroclor 1260	0-1 ft	690	40,000	0.0173	No	No	No
Total PCBs (Aroclors)	0-1 ft	2,140	40,000	0.0535	No	No	No
Aroclor 1254	0-3 ft	1,700	40,000	0.0425	No	No	No
Aroclor 1260	0-3 ft	690	40,000	0.0173	No	No	No
Total PCBs (Aroclors)	0-3 ft	2,140	40,000	0.0535	No	No	No
VOCs (ug/kg)							
1,1,1-Trichloroethane (TCA)	0-1 ft	0.580	NA	- -	- -	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-1 ft	0.523	200,000	0.00000262	No	No	No
1,3,5-Trimethylbenzene	0-1 ft	0.125	200,000	0.000000625	No	No	No
2-Butanone (MEK)	0-1 ft	50.0	NA	- -	- -	- -	Yes - No SLV
2-Hexanone	0-1 ft	8.80	NA	- -	- -	- -	Yes - No SLV
4-Isopropyltoluene	0-1 ft	12.0	200,000	0.0000600	No	No	No
4-Methyl-2-pentanone (MIBK)	0-1 ft	1.20	NA	- -	- -	- -	Yes - No SLV
Acetone	0-1 ft	540	NA	- -	- -	- -	Yes - No SLV
Benzene	0-1 ft	1.20	NA	- -	- -	- -	Yes - No SLV

Table N-11
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(3 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Bromomethane	0-1 ft	5.00	NA	- -	- -	- -	Yes - No SLV
Carbon Disulfide	0-1 ft	6.90	NA	- -	- -	- -	Yes - No SLV
Chloroform	0-1 ft	19.0	NA	- -	- -	- -	Yes - No SLV
Chloromethane	0-1 ft	0.250	NA	- -	- -	- -	Yes - No SLV
Dichlorodifluoromethane	0-1 ft	94.0	NA	- -	- -	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-1 ft	460	NA	- -	- -	- -	Yes - No SLV
Ethylbenzene	0-1 ft	0.320	NA	- -	- -	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	0.440	NA	- -	- -	- -	Yes - No SLV
Naphthalene	0-1 ft	1.50	10,000	0.000150	No	No	No
o-Xylene	0-1 ft	0.180	1,000	0.000180	No	No	No
Tetrachloroethene (PCE)	0-1 ft	3.10	10,000	0.000310	No	No	No
Toluene	0-1 ft	5.80	200,000	0.0000290	No	No	No
Trichloroethene (TCE)	0-1 ft	0.171	NA	- -	- -	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-3 ft	14,300	200,000	0.0715	No	No	No
1,3,5-Trimethylbenzene	0-3 ft	6,500	200,000	0.0325	No	No	No
2-Butanone (MEK)	0-3 ft	50.0	NA	- -	- -	- -	Yes - No SLV
2-Hexanone	0-3 ft	8.80	NA	- -	- -	- -	Yes - No SLV
4-Isopropyltoluene	0-3 ft	161	200,000	0.000805	No	No	No
4-Methyl-2-pentanone (MIBK)	0-3 ft	1.20	NA	- -	- -	- -	Yes - No SLV
Acetone	0-3 ft	540	NA	- -	- -	- -	Yes - No SLV
Benzene	0-3 ft	1.20	NA	- -	- -	- -	Yes - No SLV
Bromomethane	0-3 ft	5.00	NA	- -	- -	- -	Yes - No SLV
Carbon Disulfide	0-3 ft	6.90	NA	- -	- -	- -	Yes - No SLV
Chloroform	0-3 ft	19.0	NA	- -	- -	- -	Yes - No SLV
Dichlorodifluoromethane	0-3 ft	94.0	NA	- -	- -	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-3 ft	460	NA	- -	- -	- -	Yes - No SLV
Ethylbenzene	0-3 ft	37.4	NA	- -	- -	- -	Yes - No SLV
m,p-Xylenes	0-3 ft	7,400	NA	- -	- -	- -	Yes - No SLV
Naphthalene	0-3 ft	19.5	10,000	0.00195	No	No	No
n-Propylbenzene	0-3 ft	122	NA	- -	- -	- -	Yes - No SLV
o-Xylene	0-3 ft	3,200	1,000	3.20	Yes	No	**Yes**
Tetrachloroethene (PCE)	0-3 ft	420,000	10,000	42.0	Yes	Yes	**Yes**
Toluene	0-3 ft	39,000	200,000	0.195	No	No	No
Trichloroethene (TCE)	0-3 ft	6,080	NA	- -	- -	- -	Yes - No SLV
SVOCs (ug/kg)							
Benzoic Acid	0-1 ft	980	200,000	0.00490	No	No	No
Bis(2-ethylhexyl) Phthalate	0-1 ft	260,000	NA	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-1 ft	124	200,000	0.000620	No	No	No
Carbazole	0-1 ft	530	NA	- -	- -	- -	Yes - No SLV

Table N-11
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(4 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Dibenzofuran	0-1 ft	220	NA	- -	- -	- -	Yes - No SLV
Dimethyl Phthalate	0-1 ft	41.0	NA	- -	- -	- -	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	280	200,000	0.00140	No	No	No
Di-n-octyl Phthalate	0-1 ft	127	200,000	0.000635	No	No	No
Pentachlorophenol	0-1 ft	32.0	5,000	0.00640	No	No	No
Phenol	0-1 ft	3.70	70,000	0.0000529	No	No	No
Benzoic Acid	0-3 ft	980	200,000	0.00490	No	No	No
Bis(2-ethylhexyl) Phthalate	0-3 ft	260,000	NA	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-3 ft	124	200,000	0.000620	No	No	No
Carbazole	0-3 ft	530	NA	- -	- -	- -	Yes - No SLV
Dibenzofuran	0-3 ft	485	NA	- -	- -	- -	Yes - No SLV
Dimethyl Phthalate	0-3 ft	41.0	NA	- -	- -	- -	Yes - No SLV
Di-n-butyl Phthalate	0-3 ft	280	200,000	0.00140	No	No	No
Di-n-octyl Phthalate	0-3 ft	127	200,000	0.000635	No	No	No
Pentachlorophenol	0-3 ft	32.0	5,000	0.00640	No	No	No
Phenol	0-3 ft	35.0	70,000	0.0005000	No	No	No
PAHs (ug/kg)							
2-Methylnaphthalene	0-1 ft	150	NA (6)	0.0150	No	No	No
Acenaphthene	0-1 ft	470	20,000	0.0235	No	No	No
Acenaphthylene	0-1 ft	87.7	NA (6)	0.00877	No	No	No
Anthracene	0-1 ft	832	NA (6)	0.0832	No	No	No
Fluorene	0-1 ft	462	NA (6)	0.0462	No	No	No
Naphthalene	0-1 ft	1.5	10,000	0.000150	No	No	No
Phenanthrene	0-1 ft	4,000	NA (6)	0.400	No	No	No
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	5,687	NA (6)	0.569	No	No	No
Benzo(a)anthracene	0-1 ft	6,440	1,200	5.37	Yes	Yes	**Yes**
Benzo(a)pyrene	0-1 ft	6,470	1,200	5.39	Yes	Yes	**Yes**
Benzo(b)fluoranthene	0-1 ft	4,100	1,200	3.42	Yes	No	**Yes**
Benzo(g,h,i)perylene	0-1 ft	3,830	NA (7)	3.19	Yes	No	**Yes**
Benzo(k)fluoranthene	0-1 ft	1,400	1,200	1.17	Yes	No	**Yes**
Benzofluoranthenes, Total	0-1 ft	12,100	NA (7)	10.1	Yes	Yes	**Yes**
Chrysene	0-1 ft	7,590	1,200	6.33	Yes	Yes	**Yes**
Dibenz(a,h)anthracene	0-1 ft	1,430	1,200	1.19	Yes	No	**Yes**
Fluoranthene	0-1 ft	20,700	NA (7)	17.3	Yes	Yes	**Yes**
Indeno(1,2,3-cd)pyrene	0-1 ft	3,910	1,200	3.26	Yes	No	**Yes**
Pyrene	0-1 ft	21,900	NA (7)	18.3	Yes	Yes	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	72,270	1,200	60.2	Yes	Yes	**Yes**

Table N-11
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(5 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
2-Methylnaphthalene	0-3 ft	150	NA (6)	0.0150	No	No	No
Acenaphthene	0-3 ft	3,200	20,000	0.160	No	No	No
Acenaphthylene	0-3 ft	295	NA (6)	0.0295	No	No	No
Anthracene	0-3 ft	2,040	NA (6)	0.204	No	No	No
Fluorene	0-3 ft	779	NA (6)	0.0779	No	No	No
Naphthalene	0-3 ft	19.5	10,000	0.00195	No	No	No
Phenanthrene	0-3 ft	6,550	NA (6)	0.655	No	No	No
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	13,120	NA (6)	1.31	Yes	No	**Yes**
Benzo(a)anthracene	0-3 ft	12,300	1,200	10.3	Yes	Yes	**Yes**
Benzo(a)pyrene	0-3 ft	11,700	1,200	9.75	Yes	Yes	**Yes**
Benzo(b)fluoranthene	0-3 ft	4,100	1,200	3.42	Yes	No	**Yes**
Benzo(g,h,i)perylene	0-3 ft	3,830	NA (7)	3.19	Yes	No	**Yes**
Benzo(k)fluoranthene	0-3 ft	1,400	1,200	1.17	Yes	No	**Yes**
Benzofluoranthenes, Total	0-3 ft	16,300	NA (7)	13.6	Yes	Yes	**Yes**
Chrysene	0-3 ft	12,000	1,200	10.0	Yes	Yes	**Yes**
Dibenz(a,h)anthracene	0-3 ft	1,430	1,200	1.19	Yes	No	**Yes**
Fluoranthene	0-3 ft	28,600	NA (7)	23.8	Yes	Yes	**Yes**
Indeno(1,2,3-cd)pyrene	0-3 ft	4,170	1,200	3.48	Yes	No	**Yes**
Pyrene	0-3 ft	32,000	NA (7)	26.7	Yes	Yes	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	105,200	1,200	87.7	Yes	Yes	**Yes**
TPH (mg/kg)							
Diesel Range Organics	0-1 ft	1,090	NA	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	3.49	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	2,300	NA	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	1,440	NA	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	3,960	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	2,300	NA	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
For lead, the maximum concentration is from unseived samples.
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available

Table N-11
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(6 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)

ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

Hierarchy of Terrestrial Plant SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(3) Efroymson RA, ME Wil, GW Suter II, and AC Wooten. 1997. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. November. ORNL. ES/ER/TM-85/R3.

(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).
(6) The SLV for naphthalene was used to screen the individual and total LPAHs without SLVs.
(7) The SLV for the benzo(a)pyrene was used to screen the individual HPAHs without SLVs.

Table N-12
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(1 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)							
Antimony	0-1 ft	13.7	78	0.176	No	No	No
Arsenic	0-1 ft	80.9	60	1.35	Yes	No	**Yes**
Cadmium	0-1 ft	17.3	140	0.124	No	No	No
Chromium	0-1 ft	2,650	28.1	94.3	Yes	Yes	**Yes**
Lead	0-1 ft	3,260	1,700	1.92	Yes	No	**Yes**
Nickel	0-1 ft	1,060	280	3.79	Yes	No	**Yes**
Selenium	0-1 ft	0.900	4.1	0.220	No	No	No
Silver	0-1 ft	0.431	50	0.00862	No	No	No
Zinc	0-1 ft	1,160	120	9.67	Yes	Yes	**Yes**
Antimony	0-3 ft	13.7	78	0.176	No	No	No
Arsenic	0-3 ft	80.9	60	1.35	Yes	No	**Yes**
Cadmium	0-3 ft	17.3	140	0.124	No	No	No
Chromium	0-3 ft	2,650	28.1	94.3	Yes	Yes	**Yes**
Lead	0-3 ft	3,260	1,700	1.92	Yes	No	**Yes**
Nickel	0-3 ft	1,060	280	3.79	Yes	No	**Yes**
Selenium	0-3 ft	0.900	4.1	0.220	No	No	No
Silver	0-3 ft	0.431	50	0.008620	No	No	No
Zinc	0-3 ft	1,160	120	9.67	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)							
Dibutyltin	0-1 ft	210	NA	- -	- -	- -	Yes - No SLV
Monobutyltin	0-1 ft	108	NA	- -	- -	- -	Yes - No SLV
Tributyltin	0-1 ft	1,860	NA	- -	- -	- -	Yes - No SLV
Dibutyltin	0-3 ft	210	NA	- -	- -	- -	Yes - No SLV
Monobutyltin	0-3 ft	108	NA	- -	- -	- -	Yes - No SLV
Tributyltin	0-3 ft	1,860	NA	- -	- -	- -	Yes - No SLV
PESTICIDES (ug/kg)							
4,4'-DDD	0-1 ft	0.990	NA	- -	- -	- -	Yes - No SLV
4,4'-DDE	0-1 ft	2.44	NA	- -	- -	- -	Yes - No SLV
4,4'-DDT	0-1 ft	140	NA	- -	- -	- -	Yes - No SLV
Total DDTs	0-1 ft	144	NA	- -	- -	- -	Yes - No SLV
BHC (delta)	0-1 ft	3.03	NA	- -	- -	- -	Yes - No SLV
BHC (gamma) Lindane	0-1 ft	9.68	NA	- -	- -	- -	Yes - No SLV
Chlordane (alpha)	0-1 ft	1.50	NA	- -	- -	- -	Yes - No SLV
Chlordane (gamma)	0-1 ft	97.0	NA	- -	- -	- -	Yes - No SLV
Dieldrin	0-1 ft	0.823	NA	- -	- -	- -	Yes - No SLV
Endosulfan I	0-1 ft	6.45	NA	- -	- -	- -	Yes - No SLV
Endosulfan II	0-1 ft	1.99	NA	- -	- -	- -	Yes - No SLV
Endosulfan Sulfate	0-1 ft	3.30	NA	- -	- -	- -	Yes - No SLV

Table N-12
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(2 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Endrin	0-1 ft	17.0	NA	- -	- -	- -	Yes - No SLV
Endrin Aldehyde	0-1 ft	16.0	NA	- -	- -	- -	Yes - No SLV
Endrin Ketone	0-1 ft	13.0	NA	- -	- -	- -	Yes - No SLV
Heptachlor	0-1 ft	2.90	NA	- -	- -	- -	Yes - No SLV
Methoxychlor	0-1 ft	1.20	NA	- -	- -	- -	Yes - No SLV
4,4'-DDD	0-3 ft	0.990	NA	- -	- -	- -	Yes - No SLV
4,4'-DDE	0-3 ft	2.44	NA	- -	- -	- -	Yes - No SLV
4,4'-DDT	0-3 ft	140	NA	- -	- -	- -	Yes - No SLV
Total DDTs	0-3 ft	144	NA	- -	- -	- -	Yes - No SLV
BHC (delta)	0-3 ft	3.03	NA	- -	- -	- -	Yes - No SLV
BHC (gamma) Lindane	0-3 ft	9.68	NA	- -	- -	- -	Yes - No SLV
Chlordane (alpha)	0-3 ft	1.50	NA	- -	- -	- -	Yes - No SLV
Chlordane (gamma)	0-3 ft	97.0	NA	- -	- -	- -	Yes - No SLV
Dieldrin	0-3 ft	0.823	NA	- -	- -	- -	Yes - No SLV
Endosulfan I	0-3 ft	6.45	NA	- -	- -	- -	Yes - No SLV
Endosulfan II	0-3 ft	1.99	NA	- -	- -	- -	Yes - No SLV
Endosulfan Sulfate	0-3 ft	3.30	NA	- -	- -	- -	Yes - No SLV
Endrin	0-3 ft	17.0	NA	- -	- -	- -	Yes - No SLV
Endrin Aldehyde	0-3 ft	16.0	NA	- -	- -	- -	Yes - No SLV
Endrin Ketone	0-3 ft	13.0	NA	- -	- -	- -	Yes - No SLV
Heptachlor	0-3 ft	2.90	NA	- -	- -	- -	Yes - No SLV
Methoxychlor	0-3 ft	1.20	NA	- -	- -	- -	Yes - No SLV
PCBs (ug/kg)							
Aroclor 1254	0-1 ft	1,700	2,510	0.677	No	No	No
Aroclor 1260	0-1 ft	690	2,510	0.275	No	No	No
Total PCBs (Aroclors)	0-1 ft	2,140	2,510	0.853	No	No	No
Aroclor 1254	0-3 ft	1,700	2,510	0.677	No	No	No
Aroclor 1260	0-3 ft	690	2,510	0.275	No	No	No
Total PCBs (Aroclors)	0-3 ft	2,140	2,510	0.853	No	No	No
VOCs (ug/kg)							
1,1,1-Trichloroethane (TCA)	0-1 ft	0.580	NA	- -	- -	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-1 ft	0.523	NA	- -	- -	- -	Yes - No SLV
1,3,5-Trimethylbenzene	0-1 ft	0.125	NA	- -	- -	- -	Yes - No SLV
2-Butanone (MEK)	0-1 ft	50.0	NA	- -	- -	- -	Yes - No SLV
2-Hexanone	0-1 ft	8.80	NA	- -	- -	- -	Yes - No SLV
4-Isopropyltoluene	0-1 ft	12.0	NA	- -	- -	- -	Yes - No SLV
4-Methyl-2-pentanone (MIBK)	0-1 ft	1.20	NA	- -	- -	- -	Yes - No SLV
Acetone	0-1 ft	540	NA	- -	- -	- -	Yes - No SLV
Benzene	0-1 ft	1.20	NA	- -	- -	- -	Yes - No SLV

Table N-12
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(3 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Bromomethane	0-1 ft	5.00	NA	- -	- -	- -	Yes - No SLV
Carbon Disulfide	0-1 ft	6.90	NA	- -	- -	- -	Yes - No SLV
Chloroform	0-1 ft	19.0	NA	- -	- -	- -	Yes - No SLV
Chloromethane	0-1 ft	0.250	NA	- -	- -	- -	Yes - No SLV
Dichlorodifluoromethane	0-1 ft	94.0	NA	- -	- -	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-1 ft	460	NA	- -	- -	- -	Yes - No SLV
Ethylbenzene	0-1 ft	0.320	2,260	0.000142	No	No	No
m,p-Xylenes	0-1 ft	0.440	NA	- -	- -	- -	Yes - No SLV
Naphthalene	0-1 ft	1.50	NA [(6)]	0.0000517	No	No	No
o-Xylene	0-1 ft	0.180	NA	- -	- -	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-1 ft	3.10	NA	- -	- -	- -	Yes - No SLV
Toluene	0-1 ft	5.80	NA	- -	- -	- -	Yes - No SLV
Trichloroethene (TCE)	0-1 ft	0.171	NA	- -	- -	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-3 ft	14,300	NA	- -	- -	- -	Yes - No SLV
1,3,5-Trimethylbenzene	0-3 ft	6,500	NA	- -	- -	- -	Yes - No SLV
2-Butanone (MEK)	0-3 ft	50.0	NA	- -	- -	- -	Yes - No SLV
2-Hexanone	0-3 ft	8.80	NA	- -	- -	- -	Yes - No SLV
4-Isopropyltoluene	0-3 ft	161	NA	- -	- -	- -	Yes - No SLV
4-Methyl-2-pentanone (MIBK)	0-3 ft	1.20	NA	- -	- -	- -	Yes - No SLV
Acetone	0-3 ft	540	NA	- -	- -	- -	Yes - No SLV
Benzene	0-3 ft	1.20	NA	- -	- -	- -	Yes - No SLV
Bromomethane	0-3 ft	5.00	NA	- -	- -	- -	Yes - No SLV
Carbon Disulfide	0-3 ft	6.90	NA	- -	- -	- -	Yes - No SLV
Chloroform	0-3 ft	19.0	NA	- -	- -	- -	Yes - No SLV
Dichlorodifluoromethane	0-3 ft	94.0	NA	- -	- -	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-3 ft	460	NA	- -	- -	- -	Yes - No SLV
Ethylbenzene	0-3 ft	37.4	2,260	0.0165	No	No	No
m,p-Xylenes	0-3 ft	7,400	NA	- -	- -	- -	Yes - No SLV
Naphthalene	0-3 ft	19.5	NA [(6)]	0.000672	No	No	No
n-Propylbenzene	0-3 ft	122	NA	- -	- -	- -	Yes - No SLV
o-Xylene	0-3 ft	3,200	NA	- -	- -	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-3 ft	420,000	NA	- -	- -	- -	Yes - No SLV
Toluene	0-3 ft	39,000	NA	- -	- -	- -	Yes - No SLV
Trichloroethene (TCE)	0-3 ft	6,080	NA	- -	- -	- -	Yes - No SLV
SVOCs (ug/kg)							
Benzoic Acid	0-1 ft	980	NA	- -	- -	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-1 ft	260,000	NA	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-1 ft	124	NA	- -	- -	- -	Yes - No SLV

Table N-12
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(4 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Carbazole	0-1 ft	530	2,260	0.235	No	No	No
Dibenzofuran	0-1 ft	220	NA	- -	- -	- -	Yes - No SLV
Dimethyl Phthalate	0-1 ft	41.0	200,000	0.000205	No	No	No
Di-n-butyl Phthalate	0-1 ft	280	NA	- -	- -	- -	Yes - No SLV
Di-n-octyl Phthalate	0-1 ft	127	NA	- -	- -	- -	Yes - No SLV
Pentachlorophenol	0-1 ft	32.0	31,000	0.00103	No	No	No
Phenol	0-1 ft	3.70	30,000	0.000123	No	No	No
Benzoic Acid	0-3 ft	980	NA	- -	- -	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-3 ft	260,000	NA	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-3 ft	124	NA	- -	- -	- -	Yes - No SLV
Carbazole	0-3 ft	530	2,260	0.235	No	No	No
Dibenzofuran	0-3 ft	485	NA	- -	- -	- -	Yes - No SLV
Dimethyl Phthalate	0-3 ft	41.0	200,000	0.000205	No	No	No
Di-n-butyl Phthalate	0-3 ft	280	NA	- -	- -	- -	Yes - No SLV
Di-n-octyl Phthalate	0-3 ft	127	NA	- -	- -	- -	Yes - No SLV
Pentachlorophenol	0-3 ft	32.0	31,000	0.00103	No	No	No
Phenol	0-3 ft	35.0	30,000	0.00117	No	No	No
PAHs (ug/kg)							
2-Methylnaphthalene	0-1 ft	150	NA [6]	0.00517	No	No	No
Acenaphthene	0-1 ft	470	NA [6]	0.0162	No	No	No
Acenaphthylene	0-1 ft	87.7	NA [6]	0.00302	No	No	No
Anthracene	0-1 ft	832	NA [6]	0.0287	No	No	No
Fluorene	0-1 ft	462	NA [6]	0.0159	No	No	No
Naphthalene	0-1 ft	1.5	NA [6]	0.0000517	No	No	No
Phenanthrene	0-1 ft	4,000	NA [6]	0.138	No	No	No
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	5,687	29,000	0.196	No	No	No
Benzo(a)anthracene	0-1 ft	6,440	NA [7]	0.358	No	No	No
Benzo(a)pyrene	0-1 ft	6,470	NA [7]	0.359	No	No	No
Benzo(b)fluoranthene	0-1 ft	4,100	NA [7]	0.228	No	No	No
Benzo(g,h,i)perylene	0-1 ft	3,830	NA [7]	0.213	No	No	No
Benzo(k)fluoranthene	0-1 ft	1,400	NA [7]	0.0778	No	No	No
Benzofluoranthenes, Total	0-1 ft	12,100	NA [7]	0.672	No	No	No
Chrysene	0-1 ft	7,590	NA [7]	0.422	No	No	No
Dibenz(a,h)anthracene	0-1 ft	1,430	NA [7]	0.0794	No	No	No
Fluoranthene	0-1 ft	20,700	NA [7]	1.15	Yes	No	**Yes**

Table N-12
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(5 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
Indeno(1,2,3-cd)pyrene	0-1 ft	3,910	NA [7]	0.217	No	No	No
Pyrene	0-1 ft	21,900	NA [7]	1.22	Yes	No	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	72,270	18,000	4.02	Yes	No	**Yes**
2-Methylnaphthalene	0-3 ft	150	NA [6]	0.00517	No	No	No
Acenaphthene	0-3 ft	3,200	NA [6]	0.110	No	No	No
Acenaphthylene	0-3 ft	295	NA [6]	0.0102	No	No	No
Anthracene	0-3 ft	2,040	NA [6]	0.0703	No	No	No
Fluorene	0-3 ft	779	NA [6]	0.0269	No	No	No
Naphthalene	0-3 ft	19.5	NA [6]	0.000672	No	No	No
Phenanthrene	0-3 ft	6,550	NA [6]	0.226	No	No	No
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	13,120	29,000	0.452	No	No	No
Benzo(a)anthracene	0-3 ft	12,300	NA [7]	0.683	No	No	No
Benzo(a)pyrene	0-3 ft	11,700	NA [7]	0.650	No	No	No
Benzo(b)fluoranthene	0-3 ft	4,100	NA [7]	0.228	No	No	No
Benzo(g,h,i)perylene	0-3 ft	3,830	NA [7]	0.213	No	No	No
Benzo(k)fluoranthene	0-3 ft	1,400	NA [7]	0.0778	No	No	No
Benzofluoranthenes, Total	0-3 ft	16,300	NA [7]	0.906	No	No	No
Chrysene	0-3 ft	12,000	NA [7]	0.667	No	No	No
Dibenz(a,h)anthracene	0-3 ft	1,430	NA [7]	0.0794	No	No	No
Fluoranthene	0-3 ft	28,600	NA [7]	1.59	Yes	No	**Yes**
Indeno(1,2,3-cd)pyrene	0-3 ft	4,170	NA [7]	0.232	No	No	No
Pyrene	0-3 ft	32,000	NA [7]	1.78	Yes	No	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	105,200	18,000	5.84	Yes	Yes	**Yes**
TPH (mg/kg)							
Diesel Range Organics	0-1 ft	1,090	NA	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	3.49	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	2,300	NA	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	1,440	NA	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	3,960	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	2,300	NA	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
For lead, the maximum concentration is from unseived samples.
CPEC = chemical of potential ecological concern
COI = chemical of interest

Table N-12
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(6 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)

HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

Hierarchy of Terrestrial Invertebrate SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(3) RA Efroymson. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process, Nov 1997 Revision. ORNL ES/ER/TM-126/R2.

(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).
(6) The SLV for Total LPAHs was used to screen the individual LPAHs to determine which individuals are driving Total LPAH risk, if any.
(7) The SLV for Total HPAHs was used to screen the individual HPAHs to determine which individuals are driving Total HPAH risk, if any.

Table N-13
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(1 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)									
Antimony	0-1 ft	2.94	0.176	16.7	Yes	Yes	No	- -	**Yes**
Arsenic	0-1 ft	15.1	43	0.351	No	No	Yes	Yes	No
Cadmium	0-1 ft	3.20	0.77	4.16	Yes	No	Yes	Yes	**Yes**
Chromium	0-1 ft	720	28.1	25.6	Yes	Yes	Yes	Yes	**Yes**
Lead	0-1 ft	465	25.5	18.2	Yes	Yes	Yes	Yes	**Yes**
Nickel	0-1 ft	353	210	1.68	Yes	No	Yes	Yes	**Yes**
Selenium	0-1 ft	0.466	1.2	0.388	No	No	Yes	Yes	No
Silver	0-1 ft	0.187	4.2	0.0445	No	No	Yes	Yes	No
Zinc	0-1 ft	212	71.7	2.96	Yes	No	Yes	Yes	**Yes**
Antimony	0-3 ft	2.42	0.176	13.8	Yes	Yes	No	- -	**Yes**
Arsenic	0-3 ft	9.71	43	0.226	No	No	Yes	Yes	No
Cadmium	0-3 ft	2.63	0.77	3.42	Yes	No	Yes	Yes	**Yes**
Chromium	0-3 ft	579	28.1	20.6	Yes	Yes	Yes	Yes	**Yes**
Lead	0-3 ft	529	25.5	20.7	Yes	Yes	Yes	Yes	**Yes**
Nickel	0-3 ft	251	210	1.20	Yes	No	Yes	Yes	**Yes**
Selenium	0-3 ft	0.479	1.2	0.399	No	No	Yes	Yes	No
Silver	0-3 ft	0.152	4.2	0.0362	No	No	Yes	Yes	No
Zinc	0-3 ft	237	71.7	3.31	Yes	No	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)									
Dibutyltin	0-1 ft	34.6	28,000	0.00124	No	No	No	- -	No
Monobutyltin	0-1 ft	11.0	28,000	0.000393	No	No	No	- -	No
Tributyltin	0-1 ft	481	28,000	0.0172	No	No	Yes	No	**Yes-Bio**
Dibutyltin	0-3 ft	26.6	28,000	0.000950	No	No	No	- -	No
Monobutyltin	0-3 ft	8.62	28,000	0.000308	No	No	No	- -	No
Tributyltin	0-3 ft	248	28,000	0.00886	No	No	Yes	No	**Yes-Bio**
PESTICIDES (ug/kg)									
4,4'-DDD	0-1 ft	0.729	93	0.00784	No	No	Yes	Yes	No
4,4'-DDE	0-1 ft	0.632	93	0.00680	No	No	Yes	Yes	No
4,4'-DDT	0-1 ft	32.3	93	0.347	No	No	Yes	Yes	No
Total DDTs	0-1 ft	96	93	1.03	Yes	No	Yes	Yes	**Yes**
BHC (delta)	0-1 ft	1.54	8,000	0.000193	No	No	Yes	No	**Yes-Bio**
BHC (gamma) Lindane	0-1 ft	9.68	8,000	0.00121	No	No	Yes	No	**Yes-Bio**
Chlordane (alpha)	0-1 ft	0.815	9,000	0.0000906	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-1 ft	30.3	9,000	0.00337	No	No	Yes	No	**Yes-Bio**
Dieldrin	0-1 ft	0.488	22	0.0222	No	No	Yes	Yes	No
Endosulfan I	0-1 ft	2.69	42,000	0.0000640	No	No	Yes	No	**Yes-Bio**
Endosulfan II	0-1 ft	0.495	42,000	0.0000118	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-1 ft	0.953	42,000	0.0000227	No	No	Yes	No	**Yes-Bio**

Table N-13
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(2 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Endrin	0-1 ft	5.04	22	0.229	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-1 ft	3.87	22	0.176	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-1 ft	3.09	22	0.140	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-1 ft	0.464	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Methoxychlor	0-1 ft	1.05	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
4,4'-DDD	0-3 ft	0.721	93	0.00775	No	No	Yes	Yes	No
4,4'-DDE	0-3 ft	0.567	93	0.00610	No	No	Yes	Yes	No
4,4'-DDT	0-3 ft	79.4	93	0.854	No	No	Yes	Yes	No
Total DDTs	0-3 ft	82	93	0.880	No	No	Yes	Yes	No
BHC (delta)	0-3 ft	1.30	8,000	0.000163	No	No	Yes	No	**Yes-Bio**
BHC (gamma) Lindane	0-3 ft	1.06	8,000	0.000133	No	No	Yes	No	**Yes-Bio**
Chlordane (alpha)	0-3 ft	0.776	9,000	0.0000862	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-3 ft	20.4	9,000	0.00227	No	No	Yes	No	**Yes-Bio**
Dieldrin	0-3 ft	0.483	22	0.0220	No	No	Yes	Yes	No
Endosulfan I	0-3 ft	0.809	42,000	0.0000193	No	No	Yes	No	**Yes-Bio**
Endosulfan II	0-3 ft	0.447	42,000	0.0000106	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-3 ft	0.889	42,000	0.0000212	No	No	Yes	No	**Yes-Bio**
Endrin	0-3 ft	3.89	22	0.177	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-3 ft	3.44	22	0.156	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-3 ft	2.88	22	0.131	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-3 ft	0.415	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Methoxychlor	0-3 ft	1.04	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)									
Aroclor 1254	0-1 ft	292	655	0.446	No	No	Yes	Yes	No
Aroclor 1260	0-1 ft	203	655	0.310	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-1 ft	514	655	0.784	No	No	Yes	Yes	No
Aroclor 1254	0-3 ft	136	655	0.208	No	No	Yes	Yes	No
Aroclor 1260	0-3 ft	167	655	0.255	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-3 ft	419	655	0.640	No	No	Yes	Yes	No
VOCs (ug/kg)									
1,1,1-Trichloroethane (TCA)	0-1 ft	0.503	NA	- -	- -	- -	No	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-1 ft	0.230	NA	- -	- -	- -	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-1 ft	0.0621	NA	- -	- -	- -	No	- -	Yes - No SLV
2-Butanone (MEK)	0-1 ft	16.5	NA	- -	- -	- -	No	- -	Yes - No SLV
2-Hexanone	0-1 ft	5.25	NA	- -	- -	- -	No	- -	Yes - No SLV
4-Isopropyltoluene	0-1 ft	1.33	NA	- -	- -	- -	Yes	No	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-1 ft	0.574	NA	- -	- -	- -	No	- -	Yes - No SLV
Acetone	0-1 ft	156	NA	- -	- -	- -	No	- -	Yes - No SLV
Benzene	0-1 ft	0.524	NA	- -	- -	- -	No	- -	Yes - No SLV

Table N-13
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(3 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Bromomethane	0-1 ft	1.44	NA	- -	- -	- -	No	- -	Yes - No SLV
Carbon Disulfide	0-1 ft	1.14	NA	- -	- -	- -	No	- -	Yes - No SLV
Chloroform	0-1 ft	6.86	NA	- -	- -	- -	No	- -	Yes - No SLV
Chloromethane	0-1 ft	0.234	NA	- -	- -	- -	No	- -	Yes - No SLV
Dichlorodifluoromethane	0-1 ft	8.15	NA	- -	- -	- -	No	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-1 ft	140	NA	- -	- -	- -	No	- -	Yes - No SLV
Ethylbenzene	0-1 ft	0.132	NA	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	0.240	NA	- -	- -	- -	No	- -	Yes - No SLV
Naphthalene	0-1 ft	0.610	NA	- -	- -	- -	No	- -	Yes - No SLV
o-Xylene	0-1 ft	0.172	NA	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-1 ft	1.38	NA	- -	- -	- -	No	- -	Yes - No SLV
Toluene	0-1 ft	1.11	NA	- -	- -	- -	No	- -	Yes - No SLV
Trichloroethene (TCE)	0-1 ft	0.0766	NA	- -	- -	- -	No	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-3 ft	4,620	NA	- -	- -	- -	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-3 ft	1,630	NA	- -	- -	- -	No	- -	Yes - No SLV
2-Butanone (MEK)	0-3 ft	13.3	NA	- -	- -	- -	No	- -	Yes - No SLV
2-Hexanone	0-3 ft	5.12	NA	- -	- -	- -	No	- -	Yes - No SLV
4-Isopropyltoluene	0-3 ft	20.1	NA	- -	- -	- -	Yes	No	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-3 ft	0.525	NA	- -	- -	- -	No	- -	Yes - No SLV
Acetone	0-3 ft	122	NA	- -	- -	- -	No	- -	Yes - No SLV
Benzene	0-3 ft	0.463	NA	- -	- -	- -	No	- -	Yes - No SLV
Bromomethane	0-3 ft	1.11	NA	- -	- -	- -	No	- -	Yes - No SLV
Carbon Disulfide	0-3 ft	1.12	NA	- -	- -	- -	No	- -	Yes - No SLV
Chloroform	0-3 ft	5.70	NA	- -	- -	- -	No	- -	Yes - No SLV
Dichlorodifluoromethane	0-3 ft	6.74	NA	- -	- -	- -	No	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-3 ft	56.0	NA	- -	- -	- -	No	- -	Yes - No SLV
Ethylbenzene	0-3 ft	4.69	NA	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-3 ft	1,820	NA	- -	- -	- -	No	- -	Yes - No SLV
Naphthalene	0-3 ft	1.94	NA	- -	- -	- -	No	- -	Yes - No SLV
n-Propylbenzene	0-3 ft	35.5	NA	- -	- -	- -	No	No SLV	**Yes-Bio**
o-Xylene	0-3 ft	200	NA	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-3 ft	26,300	NA	- -	- -	- -	No	- -	Yes - No SLV
Toluene	0-3 ft	9,360	NA	- -	- -	- -	No	- -	Yes - No SLV
Trichloroethene (TCE)	0-3 ft	1,780	NA	- -	- -	- -	No	- -	Yes - No SLV
SVOCs (ug/kg)									
Benzoic Acid	0-1 ft	166	NA	- -	- -	- -	No	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-1 ft	98,000	4,500	21.8	Yes	Yes	Yes	No	**Yes**
Butyl Benzyl Phthalate	0-1 ft	17.1	450	0.0380	No	No	Yes	No	**Yes-Bio**
Carbazole	0-1 ft	144	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**

Table N-13
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(4 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Dibenzofuran	0-1 ft	42.4	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dimethyl Phthalate	0-1 ft	31.4	NA	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	80.4	450	0.179	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-1 ft	25.1	450	0.0558	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-1 ft	14.1	2,100	0.0067	No	No	Yes	Yes	No
Phenol	0-1 ft	2.28	NA	- -	- -	- -	No	- -	Yes - No SLV
Benzoic Acid	0-3 ft	132	NA	- -	- -	- -	No	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-3 ft	77,100	4,500	17.1	Yes	Yes	Yes	No	**Yes**
Butyl Benzyl Phthalate	0-3 ft	15.2	450	0.0338	No	No	Yes	No	**Yes-Bio**
Carbazole	0-3 ft	112	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-3 ft	122	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dimethyl Phthalate	0-3 ft	31.0	NA	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-3 ft	54.3	450	0.121	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-3 ft	22.5	450	0.0500	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-3 ft	13.3	2,100	0.00633	No	No	Yes	Yes	No
Phenol	0-3 ft	35.0	NA	- -	- -	- -	No	- -	Yes - No SLV
PAHs (ug/kg)									
2-Methylnaphthalene	0-1 ft	27.4	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthene	0-1 ft	172	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthylene	0-1 ft	17.4	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Anthracene	0-1 ft	338	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluorene	0-1 ft	154	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Naphthalene	0-1 ft	108	NA	- -	- -	- -	No	- -	Yes - No SLV
Phenanthrene	0-1 ft	1,260	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	1,849	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)anthracene	0-1 ft	1,750	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)pyrene	0-1 ft	1,760	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(b)fluoranthene	0-1 ft	1,950	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(g,h,i)perylene	0-1 ft	1,070	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(k)fluoranthene	0-1 ft	676	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzofluoranthenes, Total	0-1 ft	7,760	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Chrysene	0-1 ft	2,070	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenz(a,h)anthracene	0-1 ft	244	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluoranthene	0-1 ft	4,640	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	0-1 ft	1,130	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Pyrene	0-1 ft	4,780	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	18,577	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
2-Methylnaphthalene	0-3 ft	23.9	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**

Table N-13
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(5 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Acenaphthene	0-3 ft	652	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthylene	0-3 ft	29.6	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Anthracene	0-3 ft	772	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluorene	0-3 ft	227	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Naphthalene	0-3 ft	81.4	NA	- -	- -	- -	No	- -	Yes - No SLV
Phenanthrene	0-3 ft	2,910	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	5,036	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)anthracene	0-3 ft	2,450	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)pyrene	0-3 ft	2,390	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(b)fluoranthene	0-3 ft	2,210	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(g,h,i)perylene	0-3 ft	1,050	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(k)fluoranthene	0-3 ft	764	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzofluoranthenes, Total	0-3 ft	10,600	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Chrysene	0-3 ft	4,590	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenz(a,h)anthracene	0-3 ft	238	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluoranthene	0-3 ft	10,800	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	0-3 ft	1,160	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Pyrene	0-3 ft	11,700	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	40,758	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
TPH (mg/kg)									
Diesel Range Organics	0-1 ft	229	NA	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	2.29	NA	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	671	NA	- -	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	266	NA	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	1,030	NA	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	577	NA	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
For lead, the 95% UCL and maximum concentrations are from unseived samples.
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered

Table N-13
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(6 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)

UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Avian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Lower of 95% UCL and maximum concentration for wildlife species (birds and mammals).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-14
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(1 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
INORGANICS (mg/kg)									
Antimony	0-1 ft	2.94	0.27	10.9	Yes	Yes	No	- -	**Yes**
Arsenic	0-1 ft	15.1	46	0.328	No	No	Yes	Yes	No
Cadmium	0-1 ft	3.20	0.36	8.89	Yes	Yes	Yes	Yes	**Yes**
Chromium	0-1 ft	720	34	21.2	Yes	Yes	Yes	Yes	**Yes**
Lead	0-1 ft	465	56	8.30	Yes	Yes	Yes	Yes	**Yes**
Nickel	0-1 ft	353	130	2.72	Yes	No	Yes	Yes	No
Selenium	0-1 ft	0.466	0.63	0.740	No	No	Yes	Yes	No
Silver	0-1 ft	0.187	14	0.0134	No	No	Yes	Yes	No
Zinc	0-1 ft	212	79	2.68	Yes	No	Yes	Yes	No
Antimony	0-3 ft	2.42	0.27	8.96	Yes	Yes	No	- -	**Yes**
Arsenic	0-3 ft	9.71	46	0.211	No	No	Yes	Yes	No
Cadmium	0-3 ft	2.63	0.36	7.31	Yes	Yes	Yes	Yes	**Yes**
Chromium	0-3 ft	579	34	17.0	Yes	Yes	Yes	Yes	**Yes**
Lead	0-3 ft	529	56	9.45	Yes	Yes	Yes	Yes	**Yes**
Nickel	0-3 ft	251	130	1.93	Yes	No	Yes	Yes	No
Selenium	0-3 ft	0.479	0.63	0.760	No	No	Yes	Yes	No
Silver	0-3 ft	0.152	14	0.0109	No	No	Yes	Yes	No
Zinc	0-3 ft	237	79	3.00	Yes	No	Yes	Yes	No
BUTYLTINS (ug/kg)									
Dibutyltin	0-1 ft	34.6	1,300,000	0.0000266	No	No	No	- -	No
Monobutyltin	0-1 ft	11.0	1,300,000	0.00000846	No	No	No	- -	No
Tributyltin	0-1 ft	481	1,300,000	0.000370	No	No	Yes	No	**Yes-Bio**
Dibutyltin	0-3 ft	26.6	1,300,000	0.0000205	No	No	No	- -	No
Monobutyltin	0-3 ft	8.62	1,300,000	0.00000663	No	No	No	- -	No
Tributyltin	0-3 ft	248	1,300,000	0.000191	No	No	Yes	No	**Yes-Bio**
PESTICIDES (ug/kg)									
4,4'-DDD	0-1 ft	0.729	21	0.0347	No	No	Yes	Yes	No
4,4'-DDE	0-1 ft	0.632	21	0.0301	No	No	Yes	Yes	No
4,4'-DDT	0-1 ft	32.3	21	1.54	Yes	No	Yes	Yes	No
Total DDTs	0-1 ft	96	21	4.56	Yes	No	Yes	Yes	No
BHC (delta)	0-1 ft	1.54	1,000,000	0.00000154	No	No	Yes	No	**Yes-Bio**
BHC (gamma) Lindane	0-1 ft	9.68	1,000,000	0.00000968	No	No	Yes	No	**Yes-Bio**
Chlordane (alpha)	0-1 ft	0.815	250,000	0.00000326	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-1 ft	30.3	250,000	0.000121	No	No	Yes	No	**Yes-Bio**
Dieldrin	0-1 ft	0.488	4.9	0.100	No	No	Yes	Yes	No
Endosulfan I	0-1 ft	2.69	20,000	0.000135	No	No	Yes	No	**Yes-Bio**
Endosulfan II	0-1 ft	0.495	20,000	0.000025	No	No	Yes	No	**Yes-Bio**

Table N-14
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(2 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Endosulfan Sulfate	0-1 ft	0.953	20,000	0.0000477	No	No	Yes	No	**Yes-Bio**
Endrin	0-1 ft	5.04	4.9	1.03	Yes	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-1 ft	3.87	4.9	0.79	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-1 ft	3.09	4.9	0.631	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-1 ft	0.464	15,000	0.0000309	No	No	Yes	No SLV	**Yes-Bio**
Methoxychlor	0-1 ft	1.05	500,000	0.00000210	No	No	Yes	No SLV	**Yes-Bio**
4,4'-DDD	0-3 ft	0.721	21	0.0343	No	No	Yes	Yes	No
4,4'-DDE	0-3 ft	0.567	21	0.0270	No	No	Yes	Yes	No
4,4'-DDT	0-3 ft	79.4	21	3.78	Yes	No	Yes	Yes	No
Total DDTs	0-3 ft	82	21	3.90	Yes	No	Yes	Yes	No
BHC (delta)	0-3 ft	1.30	1,000,000	0.00000130	No	No	Yes	No	**Yes-Bio**
BHC (gamma) Lindane	0-3 ft	1.06	1,000,000	0.00000106	No	No	Yes	No	**Yes-Bio**
Chlordane (alpha)	0-3 ft	0.776	250,000	0.00000310	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-3 ft	20.4	250,000	0.0000816	No	No	Yes	No	**Yes-Bio**
Dieldrin	0-3 ft	0.483	4.9	0.0986	No	No	Yes	Yes	No
Endosulfan I	0-3 ft	0.809	20,000	0.0000405	No	No	Yes	No	**Yes-Bio**
Endosulfan II	0-3 ft	0.447	20,000	0.0000224	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-3 ft	0.889	20,000	0.0000445	No	No	Yes	No	**Yes-Bio**
Endrin	0-3 ft	3.89	4.9	0.794	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-3 ft	3.44	4.9	0.702	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-3 ft	2.88	4.9	0.588	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-3 ft	0.415	15,000	0.0000277	No	No	Yes	No SLV	**Yes-Bio**
Methoxychlor	0-3 ft	1.04	500,000	0.00000208	No	No	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)									
Aroclor 1254	0-1 ft	292	371	0.787	No	No	Yes	Yes	No
Aroclor 1260	0-1 ft	203	371	0.547	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-1 ft	514	371	1.38	Yes	No	Yes	Yes	No
Aroclor 1254	0-3 ft	136	371	0.367	No	No	Yes	Yes	No
Aroclor 1260	0-3 ft	167	371	0.450	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-3 ft	419	371	1.130	Yes	No	Yes	Yes	No
VOCs (ug/kg)									
1,1,1-Trichloroethane (TCA)	0-1 ft	0.503	55,550,000	0.00000000905	No	No	No	- -	No
1,2,4-Trimethylbenzene	0-1 ft	0.230	1,440,000	0.000000160	No	No	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-1 ft	0.0621	1,440,000	0.0000000431	No	No	No	- -	No
2-Butanone (MEK)	0-1 ft	16.5	200,000,000	0.0000000825	No	No	No	- -	No
2-Hexanone	0-1 ft	5.25	1,250,000	0.00000420	No	No	No	- -	No
4-Isopropyltoluene	0-1 ft	1.33	NA	- -	- -	- -	Yes	No	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-1 ft	0.574	1,250,000	0.000000459	No	No	No	- -	No
Acetone	0-1 ft	156	1,250,000	0.000125	No	No	No	- -	No

Table N-14
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(3 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Benzene	0-1 ft	0.524	3,300,000	0.000000159	No	No	No	- -	No
Bromomethane	0-1 ft	1.44	730,000	0.00000197	No	No	No	- -	No
Carbon Disulfide	0-1 ft	1.14	2,000,000	0.000000570	No	No	No	- -	No
Chloroform	0-1 ft	6.86	1,875,000	0.00000366	No	No	No	- -	No
Chloromethane	0-1 ft	0.234	730,000	0.000000321	No	No	No	- -	No
Dichlorodifluoromethane	0-1 ft	8.15	730,000	0.0000112	No	No	No	- -	No
Dichloromethane (Methylene Chloride)	0-1 ft	140	730,000	0.000192	No	No	No	- -	No
Ethylbenzene	0-1 ft	0.132	NA	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	0.240	120,000	0.00000200	No	No	No	- -	No
Naphthalene	0-1 ft	0.610	NA	- -	- -	- -	No	- -	Yes - No SLV
o-Xylene	0-1 ft	0.172	120,000	0.00000143	No	No	No	- -	No
Tetrachloroethene (PCE)	0-1 ft	1.38	80,000	0.0000173	No	No	No	- -	No
Toluene	0-1 ft	1.11	1,440,000	0.000000771	No	No	No	- -	No
Trichloroethene (TCE)	0-1 ft	0.0766	40,000	0.00000192	No	No	No	- -	No
1,2,4-Trimethylbenzene	0-3 ft	4,620	1,440,000	0.00321	No	No	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-3 ft	1,630	1,440,000	0.00113	No	No	No	- -	No
2-Butanone (MEK)	0-3 ft	13.3	200,000,000	0.0000000665	No	No	No	- -	No
2-Hexanone	0-3 ft	5.12	1,250,000	0.00000410	No	No	No	- -	No
4-Isopropyltoluene	0-3 ft	20.1	NA	- -	- -	- -	Yes	No	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-3 ft	0.525	1,250,000	0.000000420	No	No	No	- -	No
Acetone	0-3 ft	122	1,250,000	0.0000976	No	No	No	- -	No
Benzene	0-3 ft	0.463	3,300,000	0.000000140	No	No	No	- -	No
Bromomethane	0-3 ft	1.11	730,000	0.00000152	No	No	No	- -	No
Carbon Disulfide	0-3 ft	1.12	2,000,000	0.000000560	No	No	No	- -	No
Chloroform	0-3 ft	5.70	1,875,000	0.00000304	No	No	No	- -	No
Dichlorodifluoromethane	0-3 ft	6.74	730,000	0.00000923	No	No	No	- -	No
Dichloromethane (Methylene Chloride)	0-3 ft	56.0	730,000	0.0000767	No	No	No	- -	No
Ethylbenzene	0-3 ft	4.69	NA	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-3 ft	1,820	120,000	0.0152	No	No	No	- -	No
Naphthalene	0-3 ft	1.94	NA	- -	- -	- -	No	- -	Yes - No SLV
n-Propylbenzene	0-3 ft	35.5	NA	- -	- -	- -	No	No SLV	**Yes-Bio**
o-Xylene	0-3 ft	200	120,000	0.00167	No	No	No	- -	No
Tetrachloroethene (PCE)	0-3 ft	26,300	80,000	0.329	No	No	No	- -	No
Toluene	0-3 ft	9,360	1,440,000	0.00650	No	No	No	- -	No
Trichloroethene (TCE)	0-3 ft	1,780	40,000	0.0445	No	No	No	- -	No
SVOCs (ug/kg)									
Benzoic Acid	0-1 ft	166	1,440,000	0.000115	No	No	No	- -	No
Bis(2-ethylhexyl) Phthalate	0-1 ft	98,000	1,020,000	0.0961	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-1 ft	17.1	30,000,000	0.000000570	No	No	Yes	No	**Yes-Bio**

Table N-14
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(4 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Carbazole	0-1 ft	144	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-1 ft	42.4	2	21.2	Yes	Yes	Yes	No	**Yes**
Dimethyl Phthalate	0-1 ft	31.4	NA	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	80.4	30,000,000	0.00000268	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-1 ft	25.1	30,000,000	0.00000084	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-1 ft	14.1	2,800	0.00504	No	No	Yes	Yes	No
Phenol	0-1 ft	2.28	NA	- -	- -	- -	No	- -	Yes - No SLV
Benzoic Acid	0-3 ft	132	1,440,000	0.0000917	No	No	No	- -	No
Bis(2-ethylhexyl) Phthalate	0-3 ft	77,100	1,020,000	0.0756	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-3 ft	15.2	30,000,000	0.000000507	No	No	Yes	No	**Yes-Bio**
Carbazole	0-3 ft	112	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-3 ft	122	2	61.0	Yes	Yes	Yes	No	**Yes**
Dimethyl Phthalate	0-3 ft	31.0	NA	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-3 ft	54.3	30,000,000	0.00000181	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-3 ft	22.5	30,000,000	0.000000750	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-3 ft	13.3	2,800	0.00475	No	No	Yes	Yes	No
Phenol	0-3 ft	35.0	NA	- -	- -	- -	No	- -	Yes - No SLV
PAHs (ug/kg)									
2-Methylnaphthalene	0-1 ft	27.4	NA (6)	0.000274	No	No	Yes	Incl in tLPAH	No
Acenaphthene	0-1 ft	172	NA (6)	0.00172	No	No	Yes	Incl in tLPAH	No
Acenaphthylene	0-1 ft	17.4	NA (6)	0.000174	No	No	Yes	Incl in tLPAH	No
Anthracene	0-1 ft	338	NA (6)	0.00338	No	No	Yes	Incl in tLPAH	No
Fluorene	0-1 ft	154	NA (6)	0.00154	No	No	Yes	Incl in tLPAH	No
Naphthalene	0-1 ft	108	NA (6)	0.00108	No	No	No	- -	No
Phenanthrene	0-1 ft	1,260	NA (6)	0.0126	No	No	Yes	Incl in tLPAH	No
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	1,849	100,000	0.0185	No	No	Yes	Yes	No
Benzo(a)anthracene	0-1 ft	1,750	NA (7)	1.59	Yes	No	Yes	Incl in tHPAH	No
Benzo(a)pyrene	0-1 ft	1,760	NA (7)	1.60	Yes	No	Yes	Incl in tHPAH	No
Benzo(b)fluoranthene	0-1 ft	1,950	NA (7)	1.77	Yes	No	Yes	Incl in tHPAH	No
Benzo(g,h,i)perylene	0-1 ft	1,070	NA (7)	0.973	No	No	Yes	Incl in tHPAH	No
Benzo(k)fluoranthene	0-1 ft	676	NA (7)	0.615	No	No	Yes	Incl in tHPAH	No
Benzofluoranthenes, Total	0-1 ft	7,760	NA (7)	7.05	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Chrysene	0-1 ft	2,070	NA (7)	1.88	Yes	No	Yes	Incl in tHPAH	No
Dibenz(a,h)anthracene	0-1 ft	244	NA (7)	0.222	No	No	Yes	Incl in tHPAH	No
Fluoranthene	0-1 ft	4,640	NA (7)	4.22	Yes	No	Yes	Incl in tHPAH	No

Table N-14
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(5 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Indeno(1,2,3-cd)pyrene	0-1 ft	1,130	NA (7)	1.03	Yes	No	Yes	Incl in tHPAH	No
Pyrene	0-1 ft	4,780	NA (7)	4.35	Yes	No	Yes	Incl in tHPAH	No
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	18,577	1,100	16.9	Yes	Yes	Yes	Yes	**Yes**
2-Methylnaphthalene	0-3 ft	23.9	NA (6)	0.000239	No	No	Yes	Incl in tLPAH	No
Acenaphthene	0-3 ft	652	NA (6)	0.00652	No	No	Yes	Incl in tLPAH	No
Acenaphthylene	0-3 ft	29.6	NA (6)	0.000296	No	No	Yes	Incl in tLPAH	No
Anthracene	0-3 ft	772	NA (6)	0.00772	No	No	Yes	Incl in tLPAH	No
Fluorene	0-3 ft	227	NA (6)	0.00227	No	No	Yes	Incl in tLPAH	No
Naphthalene	0-3 ft	81.4	NA (6)	0.000814	No	No	No	- -	No
Phenanthrene	0-3 ft	2,910	NA (6)	0.0291	No	No	Yes	Incl in tLPAH	No
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	5,036	100,000	0.0504	No	No	Yes	Yes	No
Benzo(a)anthracene	0-3 ft	2,450	NA (7)	2.23	Yes	No	Yes	Incl in tHPAH	No
Benzo(a)pyrene	0-3 ft	2,390	NA (7)	2.17	Yes	No	Yes	Incl in tHPAH	No
Benzo(b)fluoranthene	0-3 ft	2,210	NA (7)	2.01	Yes	No	Yes	Incl in tHPAH	No
Benzo(g,h,i)perylene	0-3 ft	1,050	NA (7)	0.955	No	No	Yes	Incl in tHPAH	No
Benzo(k)fluoranthene	0-3 ft	764	NA (7)	0.695	No	No	Yes	Incl in tHPAH	No
Benzofluoranthenes, Total	0-3 ft	10,600	NA (7)	9.64	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Chrysene	0-3 ft	4,590	NA (7)	4.17	Yes	No	Yes	Incl in tHPAH	No
Dibenz(a,h)anthracene	0-3 ft	238	NA (7)	0.216	No	No	Yes	Incl in tHPAH	No
Fluoranthene	0-3 ft	10,800	NA (7)	9.82	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Indeno(1,2,3-cd)pyrene	0-3 ft	1,160	NA (7)	1.05	Yes	No	Yes	Incl in tHPAH	No
Pyrene	0-3 ft	11,700	NA (7)	10.6	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	40,758	1,100	37.1	Yes	Yes	Yes	Yes	**Yes**
TPH (mg/kg)									
Diesel Range Organics	0-1 ft	229	NA	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	2.29	NA	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	671	NA	- -	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	266	NA	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	1,030	NA	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	577	NA	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
For lead, the 95% UCL and maximum concentrations are from unseived samples.
CPEC = chemical of potential ecological concern
COI = chemical of interest

Table N-14
Identification of CPECs in Soil at Sandblast Area AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(6 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)

HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
Incl in tHPAH = COI is included in the Total HPAH Screening
Incl in tLPAH = COI is included in the Total LPAH Screening
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Mammalian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.

(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Lower of 95% UCL and maximum concentration for wildlife species (birds and mammals).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).
(6) The SLV for Total LPAHs was used to screen the individual LPAHs to determine which individuals are driving Total LPAH risk, if any.
(7) The SLV for Total HPAHs was used to screen the individual HPAHs to determine which individuals are driving Total HPAH risk, if any.

Table N-15
Identification of CPECs in Groundwater at Sandblast Area AOPC - Individual COIs for Aquatic Organisms
Bradford Island - Upland Operable Unit
(1 of 2)

Chemicals of Interest	Medium	Dissolved or Total (D or T)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	Chemical is a Concern for Aquatic Organisms (Tij>1)?	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (9) (Q = 1)
INORGANICS (mg/L)								
Arsenic	Groundwater	D	0.00303	0.15	0.0202	No	Yes	**Yes-Bio**
Calcium	Groundwater	D	44.3	116	0.382	No	No	No
Iron	Groundwater	D	0.0747	1.0	0.0747	No	No	No
Magnesium	Groundwater	D	14.0	82	0.171	No	No	No
Potassium	Groundwater	D	2.61	53	0.0492	No	No	No
Sodium	Groundwater	D	89.4	680	0.131	No	No	No
Vanadium	Groundwater	D	0.00133	0.020	0.0665	No	NA	No
BUTYLTINS (ug/L)								
Monobutyltin	Groundwater	T	0.0216	0.063	0.343	No	No	No
VOCs (ug/L)								
1,1,1-Trichloroethane (TCA)	Groundwater	T	1.90	11	0.173	No	No	No
1,1-Dichloroethane	Groundwater	T	5.00	47	0.106	No	No	No
1,1-Dichloroethene	Groundwater	T	2.10	25	0.0840	No	No	No
Carbon Disulfide	Groundwater	T	0.255	0.92	0.277	No	No	No
cis-1,2-Dichloroethene	Groundwater	T	658	590	1.12	Yes	No	**Yes**
Dichloromethane (Methylene Chloride)	Groundwater	T	0.175	2,200	0.0000795	No	No	No
Tetrachloroethene (PCE)	Groundwater	T	2.66	840	0.00317	No	No	No
Toluene	Groundwater	T	0.640	9.8	0.0653	No	No	No
trans-1,2-Dichloroethene	Groundwater	T	1.70	590	0.00288	No	No	No
Trichloroethene (TCE)	Groundwater	T	3.35	3,000	0.00112	No	No	No
Vinyl Chloride	Groundwater	T	1.10	1,300	0.000846	No	No	No
TPH (mg/L)								
Diesel Range Organics	Groundwater	T	0.0173	NA	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	Groundwater	T	0.0151	NA	- -	- -	- -	Yes - No SLV
PAHs (ug/L)								
2-Methylnaphthalene	Groundwater - DP	T	0.0833	72.16	0.00115	No	Yes	**Yes-Bio**
Acenaphthene	Groundwater - DP	T	0.0135	55.85	0.000242	No	Yes	**Yes-Bio**
Anthracene	Groundwater - DP	T	0.0126	13	0.000969	No	Yes	**Yes-Bio**
Benzo(a)pyrene	Groundwater - DP	T	0.00895	0.014	0.639	No	Yes	**Yes-Bio**
Dibenz(a,h)anthracene	Groundwater - DP	T	0.00671	0.2825	0.0238	No	Yes	**Yes-Bio**
Fluoranthene	Groundwater - DP	T	0.0311	6.16	0.00505	No	Yes	**Yes-Bio**
Fluorene	Groundwater - DP	T	0.0190	3.9	0.00487	No	Yes	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	Groundwater - DP	T	0.00797	0.275	0.0290	No	Yes	**Yes-Bio**
Pyrene	Groundwater - DP	T	0.0261	10.11	0.00258	No	Yes	**Yes-Bio**

This table only includes COIs detected > 5% and above the reference area (metals only).
For lead, the 95% UCL and maximum concentrations are from unseived samples.

Table N-15
Identification of CPECs in Groundwater at Sandblast Area AOPC - Individual COIs for Aquatic Organisms
Bradford Island - Upland Operable Unit
(2 of 2)

Chemicals of Interest	Medium	Dissolved or Total (D or T)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	Chemical is a Concern for Aquatic Organisms (Tij>1)?	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (9) (Q = 1)

CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) In addition to seep water and surface water concentrations, concentrations in groundwater were compared to Selected Level II SLVs for surface water as a conservative measure (in the event that groundwater discharges to surface water).

Hierarchy of Aquatic Organisms SLV Selection (see Appendix J-5b)
(2) USEPA 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.
(3) Oregon Department of Environmental Quality (DEQ). Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Table 33A).
(4) DEQ 1998. Updated 2001. Guidance for Ecological risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.
(5) Suter GW II, and CL Tsao. 1996. Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on Oak Ridge Reservation: 1996 Revision. ORNL, Oak Ridge, TN. 104pp. ES/ER/TM-96/R2.
(6) USEPA 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. November. EPA-600-R-02-013.
(7) Canadian Council of Resource and Environment Ministers. 2007. Canadian Water Quality Guidelines for the Protection of Aquatic Life. December Accessed on 1/20/10 at http://ceqg-rcqe.ccme.ca/.
(8) Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34 pages.

Individual COIs in a Given Media
(9) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLV ij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Lower of Maximum detected concentration and 95% UCL (for aquatic receptors).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-16
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(1 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)								
Antimony	0-1 ft	13.7	5	2.74	0.0113	No	No	No
Arsenic	0-1 ft	80.9	18	4.49	0.0186	No	No	No
Cadmium	0-1 ft	17.3	32	0.541	0.00224	No	No	No
Chromium	0-1 ft	2,650	28.1	94.3	0.390	Yes	Yes	**Yes**
Lead	0-1 ft	3,260	120	27.2	0.112	Yes	No	**Yes**
Nickel	0-1 ft	1,060	38	27.9	0.115	Yes	No	**Yes**
Selenium	0-1 ft	0.900	0.52	1.73	0.00716	No	No	No
Silver	0-1 ft	0.431	560	0.000770	0.00000318	No	No	No
Zinc	0-1 ft	1,160	160	7.25	0.0300	Yes	No	**Yes**
Antimony	0-3 ft	13.7	5	2.74	0.00858	No	No	No
Arsenic	0-3 ft	80.9	18	4.49	0.0141	No	No	No
Cadmium	0-3 ft	17.3	32	0.541	0.00169	No	No	No
Chromium	0-3 ft	2,650	28.1	94.3	0.295	Yes	Yes	**Yes**
Lead	0-3 ft	3,260	120	27.2	0.0851	Yes	No	**Yes**
Nickel	0-3 ft	1,060	38	27.9	0.0873	Yes	No	**Yes**
Selenium	0-3 ft	0.900	0.52	1.73	0.00542	No	No	No
Silver	0-3 ft	0.431	560	0.000770	0.00000241	No	No	No
Zinc	0-3 ft	1,160	160	7.25	0.0227	No	No	No
BUTYLTINS (ug/kg)								
Dibutyltin	0-1 ft	210	NA	- -	- -	- -	- -	Yes - No SLV
Monobutyltin	0-1 ft	108	NA	- -	- -	- -	- -	Yes - No SLV
Tributyltin	0-1 ft	1,860	NA	- -	- -	- -	- -	Yes - No SLV
Dibutyltin	0-3 ft	210	NA	- -	- -	- -	- -	Yes - No SLV
Monobutyltin	0-3 ft	108	NA	- -	- -	- -	- -	Yes - No SLV
Tributyltin	0-3 ft	1,860	NA	- -	- -	- -	- -	Yes - No SLV
PESTICIDES (ug/kg)								
4,4'-DDD	0-1 ft	0.990	NA	- -	- -	- -	- -	Yes - No SLV
4,4'-DDE	0-1 ft	2.44	NA	- -	- -	- -	- -	Yes - No SLV
4,4'-DDT	0-1 ft	140	NA	- -	- -	- -	- -	Yes - No SLV
Total DDTs	0-1 ft	144	NA	- -	- -	- -	- -	Yes - No SLV
BHC (delta)	0-1 ft	3.03	NA	- -	- -	- -	- -	Yes - No SLV
BHC (gamma) Lindane	0-1 ft	9.68	NA	- -	- -	- -	- -	Yes - No SLV
Chlordane (alpha)	0-1 ft	1.50	NA	- -	- -	- -	- -	Yes - No SLV
Chlordane (gamma)	0-1 ft	97.0	NA	- -	- -	- -	- -	Yes - No SLV
Dieldrin	0-1 ft	0.823	NA	- -	- -	- -	- -	Yes - No SLV
Endosulfan I	0-1 ft	6.45	NA	- -	- -	- -	- -	Yes - No SLV
Endosulfan II	0-1 ft	1.99	NA	- -	- -	- -	- -	Yes - No SLV

Table N-16
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(2 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
Endosulfan Sulfate	0-1 ft	3.30	NA	- -	- -	- -	- -	Yes - No SLV
Endrin	0-1 ft	17.0	NA	- -	- -	- -	- -	Yes - No SLV
Endrin Aldehyde	0-1 ft	16.0	NA	- -	- -	- -	- -	Yes - No SLV
Endrin Ketone	0-1 ft	13.0	NA	- -	- -	- -	- -	Yes - No SLV
Heptachlor	0-1 ft	2.90	1,000	0.00290	0.0000120	No	No	No
Methoxychlor	0-1 ft	1.20	NA	- -	- -	- -	- -	Yes - No SLV
4,4'-DDD	0-3 ft	0.990	NA	- -	- -	- -	- -	Yes - No SLV
4,4'-DDE	0-3 ft	2.44	NA	- -	- -	- -	- -	Yes - No SLV
4,4'-DDT	0-3 ft	140	NA	- -	- -	- -	- -	Yes - No SLV
Total DDTs	0-3 ft	144	NA	- -	- -	- -	- -	Yes - No SLV
BHC (delta)	0-3 ft	3.03	NA	- -	- -	- -	- -	Yes - No SLV
BHC (gamma) Lindane	0-3 ft	9.68	NA	- -	- -	- -	- -	Yes - No SLV
Chlordane (alpha)	0-3 ft	1.50	NA	- -	- -	- -	- -	Yes - No SLV
Chlordane (gamma)	0-3 ft	97.0	NA	- -	- -	- -	- -	Yes - No SLV
Dieldrin	0-3 ft	0.823	NA	- -	- -	- -	- -	Yes - No SLV
Endosulfan I	0-3 ft	6.45	NA	- -	- -	- -	- -	Yes - No SLV
Endosulfan II	0-3 ft	1.99	NA	- -	- -	- -	- -	Yes - No SLV
Endosulfan Sulfate	0-3 ft	3.30	NA	- -	- -	- -	- -	Yes - No SLV
Endrin	0-3 ft	17.0	NA	- -	- -	- -	- -	Yes - No SLV
Endrin Aldehyde	0-3 ft	16.0	NA	- -	- -	- -	- -	Yes - No SLV
Endrin Ketone	0-3 ft	13.0	NA	- -	- -	- -	- -	Yes - No SLV
Heptachlor	0-3 ft	2.90	1,000	0.00290	0.00000908	No	No	No
Methoxychlor	0-3 ft	1.20	NA	- -	- -	- -	- -	Yes - No SLV
PCBs (ug/kg)								
Aroclor 1254	0-1 ft	1,700	40,000	0.0425	0.000176	No	No	No
Aroclor 1260	0-1 ft	690	40,000	0.0173	0.0000714	No	No	No
Aroclor 1254	0-3 ft	1,700	40,000	0.0425	0.000133	No	No	No
Aroclor 1260	0-3 ft	690	40,000	0.0173	0.0000540	No	No	No
VOCs (ug/kg)								
1,2,4-Trimethylbenzene	0-1 ft	0.580	NA	- -	- -	- -	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-1 ft	0.523	200,000	0.00000262	0.0000000108	No	No	No
1,3,5-Trimethylbenzene	0-1 ft	0.125	200,000	0.000000625	0.00000000259	No	No	No
2-Butanone (MEK)	0-1 ft	50.0	NA	- -	- -	- -	- -	Yes - No SLV
2-Hexanone	0-1 ft	8.80	NA	- -	- -	- -	- -	Yes - No SLV
4-Isopropyltoluene	0-1 ft	12.0	200,000	0.0000600	0.000000248	No	No	No
4-Methyl-2-pentanone (MIBK)	0-1 ft	1.20	NA	- -	- -	- -	- -	Yes - No SLV
Acetone	0-1 ft	540	NA	- -	- -	- -	- -	Yes - No SLV
Benzene	0-1 ft	1.20	NA	- -	- -	- -	- -	Yes - No SLV

Table N-16
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(3 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
Bromomethane	0-1 ft	5.00	NA	- -	- -	- -	- -	Yes - No SLV
Carbon Disulfide	0-1 ft	6.90	NA	- -	- -	- -	- -	Yes - No SLV
Chloroform	0-1 ft	19.0	NA	- -	- -	- -	- -	Yes - No SLV
Chloromethane	0-1 ft	0.250	NA	- -	- -	- -	- -	Yes - No SLV
Dichlorodifluoromethane	0-1 ft	94.0	NA	- -	- -	- -	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-1 ft	460	NA	- -	- -	- -	- -	Yes - No SLV
Ethylbenzene	0-1 ft	0.320	NA	- -	- -	- -	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	0.440	NA	- -	- -	- -	- -	Yes - No SLV
Naphthalene	0-1 ft	1.50	10,000	0.000150	0.000000621	No	No	No
o-Xylene	0-1 ft	0.180	1,000	0.000180	0.000000745	No	No	No
Tetrachloroethene (PCE)	0-1 ft	3.10	10,000	0.000310	0.00000128	No	No	No
Toluene	0-1 ft	5.80	200,000	0.0000290	0.000000120	No	No	No
Trichloroethene (TCE)	0-1 ft	0.171	NA	- -	- -	- -	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-3 ft	14,300	200,000	0.0715	0.000224	No	No	No
1,3,5-Trimethylbenzene	0-3 ft	6,500	200,000	0.0325	0.000102	No	No	No
2-Butanone (MEK)	0-3 ft	50.0	NA	- -	- -	- -	- -	Yes - No SLV
2-Hexanone	0-3 ft	8.80	NA	- -	- -	- -	- -	Yes - No SLV
4-Isopropyltoluene	0-3 ft	161	200,000	0.000805	0.00000252	No	No	No
4-Methyl-2-pentanone (MIBK)	0-3 ft	1.20	NA	- -	- -	- -	- -	Yes - No SLV
Acetone	0-3 ft	540	NA	- -	- -	- -	- -	Yes - No SLV
Benzene	0-3 ft	1.20	NA	- -	- -	- -	- -	Yes - No SLV
Bromomethane	0-3 ft	5.00	NA	- -	- -	- -	- -	Yes - No SLV
Carbon Disulfide	0-3 ft	6.90	NA	- -	- -	- -	- -	Yes - No SLV
Chloroform	0-3 ft	19.0	NA	- -	- -	- -	- -	Yes - No SLV
Dichlorodifluoromethane	0-3 ft	94.0	NA	- -	- -	- -	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-3 ft	460	NA	- -	- -	- -	- -	Yes - No SLV
Ethylbenzene	0-3 ft	37.4	NA	- -	- -	- -	- -	Yes - No SLV
m,p-Xylenes	0-3 ft	7,400	NA	- -	- -	- -	- -	Yes - No SLV
Naphthalene	0-3 ft	19.5	10,000	0.00195	0.00000611	No	No	No
n-Propylbenzene	0-3 ft	122	NA	- -	- -	- -	- -	Yes - No SLV
o-Xylene	0-3 ft	3,200	1,000	3.20	0.0100	No	No	No
Tetrachloroethene (PCE)	0-3 ft	420,000	10,000	42.0	0.131	Yes	Yes	**Yes**
Toluene	0-3 ft	39,000	200,000	0.195	0.000611	No	No	No
Trichloroethene (TCE)	0-3 ft	6,080	NA	- -	- -	- -	- -	Yes - No SLV
SVOCs (ug/kg)								
Benzoic Acid	0-1 ft	980	200,000	0.00490	0.0000203	No	No	No
Bis(2-ethylhexyl) Phthalate	0-1 ft	260,000	NA	- -	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-1 ft	124	200,000	0.000620	0.00000257	No	No	No

Table N-16
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(4 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
Carbazole	0-1 ft	530	NA	- -	- -	- -	- -	Yes - No SLV
Dibenzofuran	0-1 ft	220	NA	- -	- -	- -	- -	Yes - No SLV
Dimethyl Phthalate	0-1 ft	41.0	NA	- -	- -	- -	- -	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	280	200,000	0.00140	0.00000579	No	No	No
Di-n-octyl Phthalate	0-1 ft	127	200,000	0.000635	0.00000263	No	No	No
Pentachlorophenol	0-1 ft	32.0	5,000	0.00640	0.0000265	No	No	No
Phenol	0-1 ft	3.70	70,000	0.0000529	0.000000219	No	No	No
Benzoic Acid	0-3 ft	980	200,000	0.00490	0.0000153	No	No	No
Bis(2-ethylhexyl) Phthalate	0-3 ft	260,000	NA	- -	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-3 ft	124	200,000	0.000620	0.00000194	No	No	No
Carbazole	0-3 ft	530	NA	- -	- -	- -	- -	Yes - No SLV
Dibenzofuran	0-3 ft	485	NA	- -	- -	- -	- -	Yes - No SLV
Dimethyl Phthalate	0-3 ft	41.0	NA	- -	- -	- -	- -	Yes - No SLV
Di-n-butyl Phthalate	0-3 ft	280	200,000	0.00140	0.00000438	No	No	No
Di-n-octyl Phthalate	0-3 ft	127	200,000	0.000635	0.00000199	No	No	No
Pentachlorophenol	0-3 ft	32.0	5,000	0.00640	0.0000200	No	No	No
Phenol	0-3 ft	35.0	70,000	0.000500	0.00000157	No	No	No
PAHs (ug/kg)								
2-Methylnaphthalene	0-1 ft	150	NA (6)	0.0150	0.0000621	No	No	No
Acenaphthene	0-1 ft	470	20,000	0.0235	0.0000972	No	No	No
Acenaphthylene	0-1 ft	87.7	NA (6)	0.00877	0.0000363	No	No	No
Anthracene	0-1 ft	832	NA (6)	0.0832	0.000344	No	No	No
Fluorene	0-1 ft	462	NA (6)	0.0462	0.000191	No	No	No
Naphthalene	0-1 ft	227	10,000	0.0227	0.0000939	No	No	No
Phenanthrene	0-1 ft	4,000	NA (6)	0.400	0.00165	No	No	No
Benzo(a)anthracene	0-1 ft	6,440	1,200	5.37	0.0222	No	No	No
Benzo(a)pyrene	0-1 ft	6,470	1,200	5.39	0.0223	No	No	No
Benzo(b)fluoranthene	0-1 ft	4,100	1,200	3.42	0.0141	No	No	No
Benzo(g,h,i)perylene	0-1 ft	3,830	NA (7)	3.19	0.0132	No	No	No
Benzo(k)fluoranthene	0-1 ft	1,400	1,200	1.17	0.00483	No	No	No
Benzofluoranthenes, Total	0-1 ft	12,100	NA (7)	10.1	0.0417	Yes	No	**Yes**
Chrysene	0-1 ft	7,590	1,200	6.33	0.0262	Yes	No	**Yes**
Dibenz(a,h)anthracene	0-1 ft	1,430	1,200	1.19	0.00493	No	No	No
Fluoranthene	0-1 ft	20,700	NA (7)	17.3	0.0714	Yes	No	**Yes**
Indeno(1,2,3-cd)pyrene	0-1 ft	3,910	1,200	3.26	0.0135	No	No	No
Pyrene	0-1 ft	21,900	NA (7)	18.3	0.0755	Yes	No	**Yes**

Table N-16
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(5 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
2-Methylnaphthalene	0-3 ft	150	NA (6)	0.0150	0.0000470	No	No	No
Acenaphthene	0-3 ft	3,200	20,000	0.160	0.000501	No	No	No
Acenaphthylene	0-3 ft	295	NA (6)	0.0295	0.0000924	No	No	No
Anthracene	0-3 ft	2,040	NA (6)	0.204	0.000639	No	No	No
Fluorene	0-3 ft	779	NA (6)	0.0779	0.000244	No	No	No
Naphthalene	0-3 ft	256	10,000	0.0256	0.0000802	No	No	No
Phenanthrene	0-3 ft	6,550	NA (6)	0.655	0.00205	No	No	No
Benzo(a)anthracene	0-3 ft	12,300	1,200	10.3	0.0321	Yes	No	**Yes**
Benzo(a)pyrene	0-3 ft	11,700	1,200	9.75	0.0305	Yes	No	**Yes**
Benzo(b)fluoranthene	0-3 ft	4,100	1,200	3.42	0.0107	No	No	No
Benzo(g,h,i)perylene	0-3 ft	3,830	NA (7)	3.19	0.00999	No	No	No
Benzo(k)fluoranthene	0-3 ft	1,400	1,200	1.17	0.00365	No	No	No
Benzofluoranthenes, Total	0-3 ft	16,300	NA (7)	13.6	0.0425	Yes	No	**Yes**
Chrysene	0-3 ft	12,000	1,200	10.0	0.0313	Yes	No	**Yes**
Dibenz(a,h)anthracene	0-3 ft	1,430	1,200	1.19	0.00373	No	No	No
Fluoranthene	0-3 ft	28,600	NA (7)	23.8	0.0746	Yes	No	**Yes**
Indeno(1,2,3-cd)pyrene	0-3 ft	4,170	1,200	3.48	0.0109	No	No	No
Pyrene	0-3 ft	32,000	NA (7)	26.7	0.0835	Yes	No	**Yes**
TPH (mg/kg)								
Diesel Range Organics	0-1 ft	1,090	NA	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	3.49	NA	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	2,300	NA	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	1,440	NA	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	3,960	NA	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	2,300	NA	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
For lead, the maximum concentration is from unseived samples.
CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

Hierarchy of Terrestrial Plant SLV Selection (see Appendix J-5a)

Table N-16
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(6 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)

For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.

(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

(3) Efroymson RA, ME Wil, GW Suter II, and AC Wooten. 1997. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. November. ORNL. ES/ER/TM-85/R3.

(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Multiple COIs Simultaneously within a Given Medium

(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.

Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific

Q = Receptor designator

0-1 ft bgs Soil Interval

Nij = total number of *i* contaminants in medium *j* = 43

Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 242

0-3 ft bgs Soil Interval

Nij = total number of *i* contaminants in medium *j* = 43

Tj (0-3 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 319

Assumptions: Q = 1 for terrestrial T&E species and all aquatic species

Q = 5 for all common terrestrial species

For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

(6) The SLV for naphthalene was used to screen the individual and total LPAHs without SLVs.

(7) The SLV for the benzo(a)pyrene was used to screen the individual HPAHs without SLVs.

Table N-17
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(1 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)								
Antimony	0-1 ft	13.7	78	0.176	0.00150	No	No	No
Arsenic	0-1 ft	80.9	60	1.35	0.0115	No	No	No
Cadmium	0-1 ft	17.3	140	0.124	0.00106	No	No	No
Chromium	0-1 ft	2,650	28.1	94.3	0.806	Yes	Yes	**Yes**
Lead	0-1 ft	3,260	1,700	1.92	0.0164	No	No	No
Nickel	0-1 ft	1,060	280	3.79	0.0324	No	No	No
Selenium	0-1 ft	0.900	4.1	0.220	0.00188	No	No	No
Silver	0-1 ft	0.431	50	0.00862	0.0000737	No	No	No
Zinc	0-1 ft	1,160	120	9.67	0.0826	Yes	No	**Yes**
Antimony	0-3 ft	13.7	78	0.176	0.00148	No	No	No
Arsenic	0-3 ft	80.9	60	1.35	0.0113	No	No	No
Cadmium	0-3 ft	17.3	140	0.124	0.00104	No	No	No
Chromium	0-3 ft	2,650	28.1	94.3	0.792	Yes	Yes	**Yes**
Lead	0-3 ft	3,260	1,700	1.92	0.0161	No	No	No
Nickel	0-3 ft	1,060	280	3.79	0.0318	No	No	No
Selenium	0-3 ft	0.900	4.1	0.220	0.00184	No	No	No
Silver	0-3 ft	0.431	50	0.00862	0.0000724	No	No	No
Zinc	0-3 ft	1,160	120	9.67	0.0812	Yes	No	**Yes**
BUTYLTINS (ug/kg)								
Dibutyltin	0-1 ft	210	NA	- -	- -	- -	- -	Yes - No SLV
Monobutyltin	0-1 ft	108	NA	- -	- -	- -	- -	Yes - No SLV
Tributyltin	0-1 ft	1,860	NA	- -	- -	- -	- -	Yes - No SLV
Dibutyltin	0-3 ft	210	NA	- -	- -	- -	- -	Yes - No SLV
Monobutyltin	0-3 ft	108	NA	- -	- -	- -	- -	Yes - No SLV
Tributyltin	0-3 ft	1,860	NA	- -	- -	- -	- -	Yes - No SLV
PESTICIDES (ug/kg)								
4,4'-DDD	0-1 ft	0.990	NA	- -	- -	- -	- -	Yes - No SLV
4,4'-DDE	0-1 ft	2.44	NA	- -	- -	- -	- -	Yes - No SLV
4,4'-DDT	0-1 ft	140	NA	- -	- -	- -	- -	Yes - No SLV
Total DDTs	0-1 ft	144	NA	- -	- -	- -	- -	Yes - No SLV
BHC (delta)	0-1 ft	3.03	NA	- -	- -	- -	- -	Yes - No SLV
BHC (gamma) Lindane	0-1 ft	9.68	NA	- -	- -	- -	- -	Yes - No SLV
Chlordane (alpha)	0-1 ft	1.50	NA	- -	- -	- -	- -	Yes - No SLV
Chlordane (gamma)	0-1 ft	97.0	NA	- -	- -	- -	- -	Yes - No SLV
Dieldrin	0-1 ft	0.823	NA	- -	- -	- -	- -	Yes - No SLV
Endosulfan I	0-1 ft	6.45	NA	- -	- -	- -	- -	Yes - No SLV
Endosulfan II	0-1 ft	1.99	NA	- -	- -	- -	- -	Yes - No SLV

Table N-17
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(2 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
Endosulfan Sulfate	0-1 ft	3.30	NA	- -	- -	- -	- -	Yes - No SLV
Endrin	0-1 ft	17.0	NA	- -	- -	- -	- -	Yes - No SLV
Endrin Aldehyde	0-1 ft	16.0	NA	- -	- -	- -	- -	Yes - No SLV
Endrin Ketone	0-1 ft	13.0	NA	- -	- -	- -	- -	Yes - No SLV
Heptachlor	0-1 ft	2.90	NA	- -	- -	- -	- -	Yes - No SLV
Methoxychlor	0-1 ft	1.20	NA	- -	- -	- -	- -	Yes - No SLV
4,4'-DDD	0-3 ft	0.990	NA	- -	- -	- -	- -	Yes - No SLV
4,4'-DDE	0-3 ft	2.44	NA	- -	- -	- -	- -	Yes - No SLV
4,4'-DDT	0-3 ft	140	NA	- -	- -	- -	- -	Yes - No SLV
Total DDTs	0-3 ft	144	NA	- -	- -	- -	- -	Yes - No SLV
BHC (delta)	0-3 ft	3.03	NA	- -	- -	- -	- -	Yes - No SLV
BHC (gamma) Lindane	0-3 ft	9.68	NA	- -	- -	- -	- -	Yes - No SLV
Chlordane (alpha)	0-3 ft	1.50	NA	- -	- -	- -	- -	Yes - No SLV
Chlordane (gamma)	0-3 ft	97.0	NA	- -	- -	- -	- -	Yes - No SLV
Dieldrin	0-3 ft	0.823	NA	- -	- -	- -	- -	Yes - No SLV
Endosulfan I	0-3 ft	6.45	NA	- -	- -	- -	- -	Yes - No SLV
Endosulfan II	0-3 ft	1.99	NA	- -	- -	- -	- -	Yes - No SLV
Endosulfan Sulfate	0-3 ft	3.30	NA	- -	- -	- -	- -	Yes - No SLV
Endrin	0-3 ft	17.0	NA	- -	- -	- -	- -	Yes - No SLV
Endrin Aldehyde	0-3 ft	16.0	NA	- -	- -	- -	- -	Yes - No SLV
Endrin Ketone	0-3 ft	13.0	NA	- -	- -	- -	- -	Yes - No SLV
Heptachlor	0-3 ft	2.90	NA	- -	- -	- -	- -	Yes - No SLV
Methoxychlor	0-3 ft	1.20	NA	- -	- -	- -	- -	Yes - No SLV
PCBs (ug/kg)								
Aroclor 1254	0-1 ft	1,700	2,510	0.677	0.00579	No	No	No
Aroclor 1260	0-1 ft	690	2,510	0.275	0.00235	No	No	No
Aroclor 1254	0-3 ft	1,700	2,510	0.677	0.00569	No	No	No
Aroclor 1260	0-3 ft	690	2,510	0.275	0.00231	No	No	No
VOCs (ug/kg)								
1,2,4-Trimethylbenzene	0-1 ft	0.580	NA	- -	- -	- -	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-1 ft	0.523	NA	- -	- -	- -	- -	Yes - No SLV
1,3,5-Trimethylbenzene	0-1 ft	0.125	NA	- -	- -	- -	- -	Yes - No SLV
2-Butanone (MEK)	0-1 ft	50.0	NA	- -	- -	- -	- -	Yes - No SLV
2-Hexanone	0-1 ft	8.80	NA	- -	- -	- -	- -	Yes - No SLV
4-Isopropyltoluene	0-1 ft	12.0	NA	- -	- -	- -	- -	Yes - No SLV
4-Methyl-2-pentanone (MIBK)	0-1 ft	1.20	NA	- -	- -	- -	- -	Yes - No SLV
Acetone	0-1 ft	540	NA	- -	- -	- -	- -	Yes - No SLV
Benzene	0-1 ft	1.20	NA	- -	- -	- -	- -	Yes - No SLV

Table N-17
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(3 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
Bromomethane	0-1 ft	5.00	NA	- -	- -	- -	- -	Yes - No SLV
Carbon Disulfide	0-1 ft	6.90	NA	- -	- -	- -	- -	Yes - No SLV
Chloroform	0-1 ft	19.0	NA	- -	- -	- -	- -	Yes - No SLV
Chloromethane	0-1 ft	0.250	NA	- -	- -	- -	- -	Yes - No SLV
Dichlorodifluoromethane	0-1 ft	94.0	NA	- -	- -	- -	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-1 ft	460	NA	- -	- -	- -	- -	Yes - No SLV
Ethylbenzene	0-1 ft	0.320	2,260	0.000142	0.00000121	No	No	No
m,p-Xylenes	0-1 ft	0.440	NA	- -	- -	- -	- -	Yes - No SLV
Naphthalene	0-1 ft	1.50	NA	- -	- -	- -	- -	Yes - No SLV
o-Xylene	0-1 ft	0.180	NA	- -	- -	- -	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-1 ft	3.10	NA	- -	- -	- -	- -	Yes - No SLV
Toluene	0-1 ft	5.80	NA	- -	- -	- -	- -	Yes - No SLV
Trichloroethene (TCE)	0-1 ft	0.171	NA	- -	- -	- -	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-3 ft	14,300	NA	- -	- -	- -	- -	Yes - No SLV
1,3,5-Trimethylbenzene	0-3 ft	6,500	NA	- -	- -	- -	- -	Yes - No SLV
2-Butanone (MEK)	0-3 ft	50.0	NA	- -	- -	- -	- -	Yes - No SLV
2-Hexanone	0-3 ft	8.80	NA	- -	- -	- -	- -	Yes - No SLV
4-Isopropyltoluene	0-3 ft	161	NA	- -	- -	- -	- -	Yes - No SLV
4-Methyl-2-pentanone (MIBK)	0-3 ft	1.20	NA	- -	- -	- -	- -	Yes - No SLV
Acetone	0-3 ft	540	NA	- -	- -	- -	- -	Yes - No SLV
Benzene	0-3 ft	1.20	NA	- -	- -	- -	- -	Yes - No SLV
Bromomethane	0-3 ft	5.00	NA	- -	- -	- -	- -	Yes - No SLV
Carbon Disulfide	0-3 ft	6.90	NA	- -	- -	- -	- -	Yes - No SLV
Chloroform	0-3 ft	19.0	NA	- -	- -	- -	- -	Yes - No SLV
Dichlorodifluoromethane	0-3 ft	94.0	NA	- -	- -	- -	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-3 ft	460	NA	- -	- -	- -	- -	Yes - No SLV
Ethylbenzene	0-3 ft	37.4	2,260	0.0165	0.000139	No	No	No
m,p-Xylenes	0-3 ft	7,400	NA	- -	- -	- -	- -	Yes - No SLV
Naphthalene	0-3 ft	19.5	NA	- -	- -	- -	- -	Yes - No SLV
n-Propylbenzene	0-3 ft	122	NA	- -	- -	- -	- -	Yes - No SLV
o-Xylene	0-3 ft	3,200	NA	- -	- -	- -	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-3 ft	420,000	NA	- -	- -	- -	- -	Yes - No SLV
Toluene	0-3 ft	39,000	NA	- -	- -	- -	- -	Yes - No SLV
Trichloroethene (TCE)	0-3 ft	6,080	NA	- -	- -	- -	- -	Yes - No SLV
SVOCs (ug/kg)								
Benzoic Acid	0-1 ft	980	NA	- -	- -	- -	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-1 ft	260,000	NA	- -	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-1 ft	124	NA	- -	- -	- -	- -	Yes - No SLV

Table N-17
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(4 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
Carbazole	0-1 ft	530	2,260	0.235	0.00200	No	No	No
Dibenzofuran	0-1 ft	220	NA	- -	- -	- -	- -	Yes - No SLV
Dimethyl Phthalate	0-1 ft	41.0	200,000	0.000205	0.00000175	No	No	No
Di-n-butyl Phthalate	0-1 ft	280	NA	- -	- -	- -	- -	Yes - No SLV
Di-n-octyl Phthalate	0-1 ft	127	NA	- -	- -	- -	- -	Yes - No SLV
Pentachlorophenol	0-1 ft	32.0	31,000	0.00103	0.00000882	No	No	No
Phenol	0-1 ft	3.70	30,000	0.000123	0.00000105	No	No	No
Benzoic Acid	0-3 ft	980	NA	- -	- -	- -	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-3 ft	260,000	NA	- -	- -	- -	- -	Yes - No SLV
Butyl Benzyl Phthalate	0-3 ft	124	NA	- -	- -	- -	- -	Yes - No SLV
Carbazole	0-3 ft	530	2,260	0.235	0.00197	No	No	No
Dibenzofuran	0-3 ft	485	NA	- -	- -	- -	- -	Yes - No SLV
Dimethyl Phthalate	0-3 ft	41.0	200,000	0.000205	0.00000172	No	No	No
Di-n-butyl Phthalate	0-3 ft	280	NA	- -	- -	- -	- -	Yes - No SLV
Di-n-octyl Phthalate	0-3 ft	127	NA	- -	- -	- -	- -	Yes - No SLV
Pentachlorophenol	0-3 ft	32.0	31,000	0.00103	0.00000867	No	No	No
Phenol	0-3 ft	35.0	30,000	0.00117	0.00000980	No	No	No
PAHs (ug/kg)								
2-Methylnaphthalene	0-1 ft	150	NA	- -	- -	- -	- -	Incl in tLPAH
Acenaphthene	0-1 ft	470	NA	- -	- -	- -	- -	Incl in tLPAH
Acenaphthylene	0-1 ft	87.7	NA	- -	- -	- -	- -	Incl in tLPAH
Anthracene	0-1 ft	832	NA	- -	- -	- -	- -	Incl in tLPAH
Fluorene	0-1 ft	462	NA	- -	- -	- -	- -	Incl in tLPAH
Naphthalene	0-1 ft	227	NA	- -	- -	- -	- -	Incl in tLPAH
Phenanthrene	0-1 ft	4,000	NA	- -	- -	- -	- -	Incl in tLPAH
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	5,687	29,000	0.196	0.00168	No	No	No
Benzo(a)anthracene	0-1 ft	6,440	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(a)pyrene	0-1 ft	6,470	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(b)fluoranthene	0-1 ft	4,100	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(g,h,i)perylene	0-1 ft	3,830	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(k)fluoranthene	0-1 ft	1,400	NA	- -	- -	- -	- -	Incl in tHPAH
Benzofluoranthenes, Total	0-1 ft	12,100	NA	- -	- -	- -	- -	Incl in tHPAH
Chrysene	0-1 ft	7,590	NA	- -	- -	- -	- -	Incl in tHPAH
Dibenz(a,h)anthracene	0-1 ft	1,430	NA	- -	- -	- -	- -	Incl in tHPAH
Fluoranthene	0-1 ft	20,700	NA	- -	- -	- -	- -	Incl in tHPAH
Indeno(1,2,3-cd)pyrene	0-1 ft	3,910	NA	- -	- -	- -	- -	Incl in tHPAH
Pyrene	0-1 ft	21,900	NA	- -	- -	- -	- -	Incl in tHPAH
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	72,270	18,000	4.02	0.0343	No	No	No

Table N-17
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(5 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
2-Methylnaphthalene	0-3 ft	150	NA	- -	- -	- -	- -	Incl in tLPAH
Acenaphthene	0-3 ft	3,200	NA	- -	- -	- -	- -	Incl in tLPAH
Acenaphthylene	0-3 ft	295	NA	- -	- -	- -	- -	Incl in tLPAH
Anthracene	0-3 ft	2,040	NA	- -	- -	- -	- -	Incl in tLPAH
Fluorene	0-3 ft	779	NA	- -	- -	- -	- -	Incl in tLPAH
Naphthalene	0-3 ft	256	NA	- -	- -	- -	- -	Incl in tLPAH
Phenanthrene	0-3 ft	6,550	NA	- -	- -	- -	- -	Incl in tLPAH
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	13,120	29,000	0.452	0.00380	No	No	No
Benzo(a)anthracene	0-3 ft	12,300	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(a)pyrene	0-3 ft	11,700	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(b)fluoranthene	0-3 ft	4,100	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(g,h,i)perylene	0-3 ft	3,830	NA	- -	- -	- -	- -	Incl in tHPAH
Benzo(k)fluoranthene	0-3 ft	1,400	NA	- -	- -	- -	- -	Incl in tHPAH
Benzofluoranthenes, Total	0-3 ft	16,300	NA	- -	- -	- -	- -	Incl in tHPAH
Chrysene	0-3 ft	12,000	NA	- -	- -	- -	- -	Incl in tHPAH
Dibenz(a,h)anthracene	0-3 ft	1,430	NA	- -	- -	- -	- -	Incl in tHPAH
Fluoranthene	0-3 ft	28,600	NA	- -	- -	- -	- -	Incl in tHPAH
Indeno(1,2,3-cd)pyrene	0-3 ft	4,170	NA	- -	- -	- -	- -	Incl in tHPAH
Pyrene	0-3 ft	32,000	NA	- -	- -	- -	- -	Incl in tHPAH
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	105,200	18,000	5.84	0.0491	No	No	No
TPH (mg/kg)								
Diesel Range Organics	0-1 ft	1,090	NA	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	3.49	NA	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	2,300	NA	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	1,440	NA	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	3,960	NA	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	2,300	NA	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
For lead, the maximum concentration is from unseived samples.
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
Incl in tHPAH = COI is included in the Total HPAH Screening
Incl in tLPAH = COI is included in the Total LPAH Screening
MDL = method detection limit

Table N-17
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(6 of 6)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)

NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

Hierarchy of Terrestrial Invertebrate SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.

(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(3) RA Efroymson. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process, Nov 1997 Revision. ORNL ES/ER/TM-126/R2.
(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 18
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 117
0-3 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 18
Tj (0-3 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 119
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-18
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(1 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)										
Antimony	0-1 ft	2.94	0.176	16.7	0.177	Yes	Yes	No	- -	**Yes**
Arsenic	0-1 ft	15.1	43	0.351	0.00371	No	No	Yes	Yes	No
Cadmium	0-1 ft	3.20	0.77	4.16	0.0439	Yes	No	Yes	Yes	**Yes**
Chromium	0-1 ft	720	28.1	25.6	0.271	Yes	Yes	Yes	Yes	**Yes**
Lead	0-1 ft	465	25.5	18.2	0.193	Yes	Yes	Yes	Yes	**Yes**
Nickel	0-1 ft	353	210	1.68	0.0178	No	No	Yes	Yes	No
Selenium	0-1 ft	0.466	1.2	0.388	0.00411	No	No	Yes	Yes	No
Silver	0-1 ft	0.187	4.2	0.0445	0.000471	No	No	Yes	Yes	No
Zinc	0-1 ft	212	71.7	2.96	0.0313	No	No	Yes	Yes	No
Antimony	0-3 ft	2.42	0.176	13.8	0.166	Yes	Yes	No	- -	**Yes**
Arsenic	0-3 ft	9.71	43	0.226	0.00273	No	No	Yes	Yes	No
Cadmium	0-3 ft	2.63	0.77	3.42	0.0412	Yes	No	Yes	Yes	**Yes**
Chromium	0-3 ft	579	28.1	20.6	0.249	Yes	Yes	Yes	Yes	**Yes**
Lead	0-3 ft	529	25.5	20.7	0.250	Yes	Yes	Yes	Yes	**Yes**
Nickel	0-3 ft	251	210	1.20	0.0144	No	No	Yes	Yes	No
Selenium	0-3 ft	0.479	1.2	0.399	0.00482	No	No	Yes	Yes	No
Silver	0-3 ft	0.152	4.2	0.0362	0.000437	No	No	Yes	Yes	No
Zinc	0-3 ft	237	71.7	3.31	0.0399	Yes	No	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)										
Dibutyltin	0-1 ft	34.6	28,000	0.00124	0.0000131	No	No	No	- -	No
Monobutyltin	0-1 ft	11.0	28,000	0.000393	0.00000415	No	No	No	- -	No
Tributyltin	0-1 ft	481	28,000	0.0172	0.000182	No	No	Yes	No	**Yes-Bio**
Dibutyltin	0-3 ft	26.6	28,000	0.000950	0.0000115	No	No	No	- -	No
Monobutyltin	0-3 ft	8.62	28,000	0.000308	0.00000372	No	No	No	- -	No
Tributyltin	0-3 ft	248	28,000	0.00886	0.000107	No	No	Yes	No	**Yes-Bio**
PESTICIDES (ug/kg)										
4,4'-DDD	0-1 ft	0.729	93	0.00784	0.0000829	No	No	Yes	Yes	No
4,4'-DDE	0-1 ft	0.632	93	0.00680	0.0000719	No	No	Yes	Yes	No
4,4'-DDT	0-1 ft	32.3	93	0.347	0.00367	No	No	Yes	Yes	No
Total DDTs	0-1 ft	96	93	1.03	0.0109	No	No	Yes	Yes	No
BHC (delta)	0-1 ft	1.54	8,000	0.000193	0.00000204	No	No	Yes	No	**Yes-Bio**
BHC (gamma) Lindane	0-1 ft	9.68	8,000	0.00121	0.0000128	No	No	Yes	No	**Yes-Bio**
Chlordane (alpha)	0-1 ft	0.815	9,000	0.0000906	0.000000958	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-1 ft	30.3	9,000	0.00337	0.0000356	No	No	Yes	No	**Yes-Bio**
Dieldrin	0-1 ft	0.488	22	0.0222	0.000235	No	No	Yes	Yes	No
Endosulfan I	0-1 ft	2.69	42,000	0.0000640	0.000000677	No	No	Yes	No	**Yes-Bio**
Endosulfan II	0-1 ft	0.495	42,000	0.0000118	0.000000125	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-1 ft	0.953	42,000	0.0000227	0.000000240	No	No	Yes	No	**Yes-Bio**
Endrin	0-1 ft	5.04	22	0.229	0.00242	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-1 ft	3.87	22	0.176	0.00186	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-1 ft	3.09	22	0.140	0.00149	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-1 ft	0.464	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Methoxychlor	0-1 ft	1.05	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
4,4'-DDD	0-3 ft	0.721	93	0.00775	0.0000936	No	No	Yes	Yes	No

Table N-18
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(2 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
4,4'-DDE	0-3 ft	0.567	93	0.00610	0.0000736	No	No	Yes	Yes	No
4,4'-DDT	0-3 ft	79.4	93	0.854	0.0103	No	No	Yes	Yes	No
Total DDTs	0-3 ft	82	93	0.880	0.0106	No	No	Yes	Yes	No
BHC (delta)	0-3 ft	1.30	8,000	0.000163	0.00000196	No	No	Yes	No	**Yes-Bio**
BHC (gamma) Lindane	0-3 ft	1.06	8,000	0.000133	0.00000160	No	No	Yes	No	**Yes-Bio**
Chlordane (alpha)	0-3 ft	0.776	9,000	0.0000862	0.00000104	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-3 ft	20.4	9,000	0.00227	0.0000274	No	No	Yes	No	**Yes-Bio**
Dieldrin	0-3 ft	0.483	22	0.0220	0.000265	No	No	Yes	Yes	No
Endosulfan I	0-3 ft	0.809	42,000	0.0000193	0.000000232	No	No	Yes	No	**Yes-Bio**
Endosulfan II	0-3 ft	0.447	42,000	0.0000106	0.000000128	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-3 ft	0.889	42,000	0.0000212	0.000000255	No	No	Yes	No	**Yes-Bio**
Endrin	0-3 ft	3.89	22	0.177	0.00213	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-3 ft	3.44	22	0.156	0.00189	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-3 ft	2.88	22	0.131	0.00158	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-3 ft	0.415	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Methoxychlor	0-3 ft	1.04	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)										
Aroclor 1254	0-1 ft	292	655	0.446	0.00471	No	No	Yes	Yes	No
Aroclor 1260	0-1 ft	203	655	0.310	0.00328	No	No	Yes	Yes	No
Aroclor 1254	0-3 ft	136	655	0.208	0.00251	No	No	Yes	Yes	No
Aroclor 1260	0-3 ft	167	655	0.255	0.00308	No	No	Yes	Yes	No
VOCs (ug/kg)										
1,1,1-Trichloroethane (TCA)	0-1 ft	0.503	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-1 ft	0.230	NA	- -	- -	- -	- -	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-1 ft	0.0621	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
2-Butanone (MEK)	0-1 ft	16.5	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
2-Hexanone	0-1 ft	5.25	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
4-Isopropyltoluene	0-1 ft	1.33	NA	- -	- -	- -	- -	Yes	No	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-1 ft	0.574	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Acetone	0-1 ft	156	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Benzene	0-1 ft	0.524	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Bromomethane	0-1 ft	1.44	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Carbon Disulfide	0-1 ft	1.14	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Chloroform	0-1 ft	6.86	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Chloromethane	0-1 ft	0.234	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Dichlorodifluoromethane	0-1 ft	8.15	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-1 ft	140	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Ethylbenzene	0-1 ft	0.132	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	0.240	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Naphthalene	0-1 ft	0.610	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
o-Xylene	0-1 ft	0.172	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-1 ft	1.38	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Toluene	0-1 ft	1.11	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Trichloroethene (TCE)	0-1 ft	0.0766	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-3 ft	4,620	NA	- -	- -	- -	- -	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-3 ft	1,630	NA	- -	- -	- -	- -	No	- -	Yes - No SLV

Table N-18
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(3 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
2-Butanone (MEK)	0-3 ft	13.3	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
2-Hexanone	0-3 ft	5.12	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
4-Isopropyltoluene	0-3 ft	20.1	NA	- -	- -	- -	- -	Yes	No	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-3 ft	0.525	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Acetone	0-3 ft	122	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Benzene	0-3 ft	0.463	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Bromomethane	0-3 ft	1.11	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Carbon Disulfide	0-3 ft	1.12	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Chloroform	0-3 ft	5.70	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Dichlorodifluoromethane	0-3 ft	6.74	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-3 ft	56.0	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Ethylbenzene	0-3 ft	4.69	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-3 ft	1,820	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Naphthalene	0-3 ft	1.94	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
n-Propylbenzene	0-3 ft	35.5	NA	- -	- -	- -	- -	No	No SLV	**Yes-Bio**
o-Xylene	0-3 ft	200	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-3 ft	26,300	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Toluene	0-3 ft	9,360	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Trichloroethene (TCE)	0-3 ft	1,780	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
SVOCs (ug/kg)										
Benzoic Acid	0-1 ft	166	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-1 ft	98,000	4,500	21.8	0.230	Yes	Yes	Yes	No	**Yes**
Butyl Benzyl Phthalate	0-1 ft	17.1	450	0.0380	0.000402	No	No	Yes	No	**Yes-Bio**
Carbazole	0-1 ft	144	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-1 ft	42.4	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dimethyl Phthalate	0-1 ft	31.4	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	80.4	450	0.179	0.00189	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-1 ft	25.1	450	0.0558	0.000590	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-1 ft	14.1	2,100	0.00671	0.0000710	No	No	Yes	Yes	No
Phenol	0-1 ft	2.28	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Benzoic Acid	0-3 ft	132	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-3 ft	77,100	4,500	17.1	0.207	Yes	Yes	Yes	No	**Yes**
Butyl Benzyl Phthalate	0-3 ft	15.2	450	0.0338	0.000408	No	No	Yes	No	**Yes-Bio**
Carbazole	0-3 ft	112	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-3 ft	122	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dimethyl Phthalate	0-3 ft	31.0	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-3 ft	54.3	450	0.121	0.00146	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-3 ft	22.5	450	0.0500	0.000603	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-3 ft	13.3	2,100	0.00633	0.0000764	No	No	Yes	Yes	No
Phenol	0-3 ft	35.0	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
PAHs (ug/kg)										
2-Methylnaphthalene	0-1 ft	27.4	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthene	0-1 ft	172	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthylene	0-1 ft	17.4	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Anthracene	0-1 ft	338	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluorene	0-1 ft	154	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**

Table N-18
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(4 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Naphthalene	0-1 ft	108	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Phenanthrene	0-1 ft	1,260	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	1,849	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)anthracene	0-1 ft	1,750	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)pyrene	0-1 ft	1,760	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(b)fluoranthene	0-1 ft	1,950	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(g,h,i)perylene	0-1 ft	1,070	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(k)fluoranthene	0-1 ft	676	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzofluoranthenes, Total	0-1 ft	7,760	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Chrysene	0-1 ft	2,070	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenz(a,h)anthracene	0-1 ft	244	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluoranthene	0-1 ft	4,640	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	0-1 ft	1,130	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Pyrene	0-1 ft	4,780	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	18,577	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
2-Methylnaphthalene	0-3 ft	23.9	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthene	0-3 ft	652	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthylene	0-3 ft	29.6	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Anthracene	0-3 ft	772	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluorene	0-3 ft	227	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Naphthalene	0-3 ft	81.4	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Phenanthrene	0-3 ft	2,910	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	5,036	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)anthracene	0-3 ft	2,450	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)pyrene	0-3 ft	2,390	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(b)fluoranthene	0-3 ft	2,210	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(g,h,i)perylene	0-3 ft	1,050	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(k)fluoranthene	0-3 ft	764	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzofluoranthenes, Total	0-3 ft	10,600	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Chrysene	0-3 ft	4,590	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenz(a,h)anthracene	0-3 ft	238	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluoranthene	0-3 ft	10,800	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	0-3 ft	1,160	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Pyrene	0-3 ft	11,700	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	40,758	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
TPH (mg/kg)										
Diesel Range Organics	0-1 ft	229	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	2.29	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	671	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	266	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	1,030	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	577	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
For lead, the 95% UCL and maximum concentrations are from unseived samples.
CPEC = chemical of potential ecological concern

Table N-18
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(5 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)

COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.

Hierarchy of Avian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 31
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 94.6
0-3 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 31
Tj (0-3 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 82.9
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-19
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(1 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
INORGANICS (mg/kg)										
Antimony	0-1 ft	2.94	0.27	10.9	0.106	Yes	Yes	No	- -	**Yes**
Arsenic	0-1 ft	15.1	46	0.328	0.00321	No	No	Yes	Yes	No
Cadmium	0-1 ft	3.20	0.36	8.89	0.0868	Yes	No	Yes	Yes	No
Chromium	0-1 ft	720	34	21.2	0.207	Yes	Yes	Yes	Yes	**Yes**
Lead	0-1 ft	465	56	8.30	0.0811	Yes	No	Yes	Yes	No
Nickel	0-1 ft	353	130	2.72	0.0265	Yes	No	Yes	Yes	No
Selenium	0-1 ft	0.466	0.63	0.740	0.00722	No	No	Yes	Yes	No
Silver	0-1 ft	0.187	14	0.0134	0.000130	No	No	Yes	Yes	No
Zinc	0-1 ft	212	79	2.68	0.0262	Yes	No	Yes	Yes	No
Antimony	0-3 ft	2.42	0.27	8.96	0.0581	Yes	No	No	- -	No
Arsenic	0-3 ft	9.71	46	0.211	0.00137	No	No	Yes	Yes	No
Cadmium	0-3 ft	2.63	0.36	7.31	0.0474	Yes	No	Yes	Yes	No
Chromium	0-3 ft	579	34	17.0	0.110	Yes	Yes	Yes	Yes	**Yes**
Lead	0-3 ft	529	56	9.45	0.0613	Yes	No	Yes	Yes	No
Nickel	0-3 ft	251	130	1.93	0.0125	No	No	Yes	Yes	No
Selenium	0-3 ft	0.479	0.63	0.760	0.00493	No	No	Yes	Yes	No
Silver	0-3 ft	0.152	14	0.0109	0.0000704	No	No	Yes	Yes	No
Zinc	0-3 ft	237	79	3.00	0.0195	Yes	No	Yes	Yes	No
BUTYLTINS (ug/kg)										
Dibutyltin	0-1 ft	34.6	1,300,000	0.0000266	0.000000260	No	No	No	- -	No
Monobutyltin	0-1 ft	11.0	1,300,000	0.00000846	0.0000000826	No	No	No	- -	No
Tributyltin	0-1 ft	481	1,300,000	0.000370	0.00000361	No	No	Yes	No	**Yes-Bio**
Dibutyltin	0-3 ft	26.6	1,300,000	0.0000205	0.000000133	No	No	No	- -	No
Monobutyltin	0-3 ft	8.62	1,300,000	0.00000663	0.0000000430	No	No	No	- -	No
Tributyltin	0-3 ft	248	1,300,000	0.000191	0.00000124	No	No	Yes	No	**Yes-Bio**
PESTICIDES (ug/kg)										
4,4'-DDD	0-1 ft	0.729	21	0.0347	0.000339	No	No	Yes	Yes	No
4,4'-DDE	0-1 ft	0.632	21	0.0301	0.000294	No	No	Yes	Yes	No
4,4'-DDT	0-1 ft	32.3	21	1.54	0.0150	No	No	Yes	Yes	No
Total DDTs	0-1 ft	96	21	4.56	0.0445	Yes	No	Yes	Yes	No
BHC (delta)	0-1 ft	1.54	1,000,000	0.00000154	0.0000000150	No	No	Yes	No	**Yes-Bio**
BHC (gamma) Lindane	0-1 ft	9.68	1,000,000	0.00000968	0.0000000945	No	No	Yes	No	**Yes-Bio**
Chlordane (alpha)	0-1 ft	0.815	250,000	0.00000326	0.0000000318	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-1 ft	30.3	250,000	0.000121	0.00000118	No	No	Yes	No	**Yes-Bio**
Dieldrin	0-1 ft	0.488	4.9	0.100	0.000973	No	No	Yes	Yes	No
Endosulfan I	0-1 ft	2.69	20,000	0.000135	0.00000131	No	No	Yes	No	**Yes-Bio**
Endosulfan II	0-1 ft	0.495	20,000	0.0000248	0.000000242	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-1 ft	0.953	20,000	0.0000477	0.000000465	No	No	Yes	No	**Yes-Bio**
Endrin	0-1 ft	5.04	4.9	1.03	0.0100	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-1 ft	3.87	4.9	0.790	0.00771	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-1 ft	3.09	4.9	0.631	0.00616	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-1 ft	0.464	15,000	0.0000309	0.000000302	No	No	Yes	No SLV	**Yes-Bio**
Methoxychlor	0-1 ft	1.05	500,000	0.00000210	0.0000000205	No	No	Yes	No SLV	**Yes-Bio**
4,4'-DDD	0-3 ft	0.721	21	0.0343	0.000223	No	No	Yes	Yes	No
4,4'-DDE	0-3 ft	0.567	21	0.0270	0.000175	No	No	Yes	Yes	No

Table N-19
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(2 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
4,4'-DDT	0-3 ft	79.4	21	3.78	0.0245	Yes	No	Yes	Yes	No
Total DDTs	0-3 ft	82	21	3.90	0.0253	Yes	No	Yes	Yes	No
BHC (delta)	0-3 ft	1.30	1,000,000	0.00000130	0.00000000843	No	No	Yes	No	**Yes-Bio**
BHC (gamma) Lindane	0-3 ft	1.06	1,000,000	0.00000106	0.00000000688	No	No	Yes	No	**Yes-Bio**
Chlordane (alpha)	0-3 ft	0.776	250,000	0.00000310	0.0000000201	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-3 ft	20.4	250,000	0.0000816	0.000000529	No	No	Yes	No	**Yes-Bio**
Dieldrin	0-3 ft	0.483	4.9	0.0986	0.000640	No	No	Yes	Yes	No
Endosulfan I	0-3 ft	0.809	20,000	0.0000405	0.000000262	No	No	Yes	No	**Yes-Bio**
Endosulfan II	0-3 ft	0.447	20,000	0.0000224	0.000000145	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-3 ft	0.889	20,000	0.0000445	0.000000288	No	No	Yes	No	**Yes-Bio**
Endrin	0-3 ft	3.89	4.9	0.794	0.00515	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-3 ft	3.44	4.9	0.702	0.00455	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-3 ft	2.88	4.9	0.588	0.00381	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-3 ft	0.415	15,000	0.0000277	0.000000179	No	No	Yes	No SLV	**Yes-Bio**
Methoxychlor	0-3 ft	1.04	500,000	0.00000208	0.0000000135	No	No	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)										
Aroclor 1254	0-1 ft	292	371	0.787	0.00769	No	No	Yes	Yes	No
Aroclor 1260	0-1 ft	203	371	0.547	0.00534	No	No	Yes	Yes	No
Aroclor 1254	0-3 ft	136	371	0.367	0.00238	No	No	Yes	Yes	No
Aroclor 1260	0-3 ft	167	371	0.450	0.00292	No	No	Yes	Yes	No
VOCs (ug/kg)										
1,1,1-Trichloroethane (TCA)	0-1 ft	0.503	55,550,000	0.00000000905	0.0000000000884	No	No	No	- -	No
1,2,4-Trimethylbenzene	0-1 ft	0.230	1,440,000	0.000000160	0.00000000156	No	No	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-1 ft	0.0621	1,440,000	0.0000000431	0.000000000421	No	No	No	- -	No
2-Butanone (MEK)	0-1 ft	16.5	200,000,000	0.0000000825	0.000000000806	No	No	No	- -	No
2-Hexanone	0-1 ft	5.25	1,250,000	0.00000420	0.0000000410	No	No	No	- -	No
4-Isopropyltoluene	0-1 ft	1.33	NA	- -	- -	- -	- -	Yes	No	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-1 ft	0.574	1,250,000	0.000000459	0.00000000448	No	No	No	- -	No
Acetone	0-1 ft	156	1,250,000	0.000125	0.00000122	No	No	No	- -	No
Benzene	0-1 ft	0.524	3,300,000	0.000000159	0.00000000155	No	No	No	- -	No
Bromomethane	0-1 ft	1.44	730,000	0.00000197	0.0000000193	No	No	No	- -	No
Carbon Disulfide	0-1 ft	1.14	2,000,000	0.000000570	0.00000000557	No	No	No	- -	No
Chloroform	0-1 ft	6.86	1,875,000	0.00000366	0.0000000357	No	No	No	- -	No
Chloromethane	0-1 ft	0.234	730,000	0.000000321	0.00000000313	No	No	No	- -	No
Dichlorodifluoromethane	0-1 ft	8.15	730,000	0.0000112	0.000000109	No	No	No	- -	No
Dichloromethane (Methylene Chloride)	0-1 ft	140	730,000	0.000192	0.00000187	No	No	No	- -	No
Ethylbenzene	0-1 ft	0.132	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	0.240	120,000	0.00000200	0.0000000195	No	No	No	- -	No
Naphthalene	0-1 ft	0.610	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
o-Xylene	0-1 ft	0.172	120,000	0.00000143	0.0000000140	No	No	No	- -	No
Tetrachloroethene (PCE)	0-1 ft	1.38	80,000	0.0000173	0.000000168	No	No	No	- -	No
Toluene	0-1 ft	1.11	1,440,000	0.000000771	0.00000000753	No	No	No	- -	No
Trichloroethene (TCE)	0-1 ft	0.0766	40,000	0.00000192	0.0000000187	No	No	No	- -	No
1,2,4-Trimethylbenzene	0-3 ft	4,620	1,440,000	0.00321	0.0000208	No	No	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-3 ft	1,630	1,440,000	0.00113	0.00000734	No	No	No	- -	No
2-Butanone (MEK)	0-3 ft	13.3	200,000,000	0.0000000665	0.000000000431	No	No	No	- -	No

Table N-19
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(3 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
2-Hexanone	0-3 ft	5.12	1,250,000	0.00000410	0.0000000266	No	No	No	- -	No
4-Isopropyltoluene	0-3 ft	20.1	NA	- -	- -	- -	- -	Yes	No	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-3 ft	0.525	1,250,000	0.000000420	0.00000000272	No	No	No	- -	No
Acetone	0-3 ft	122	1,250,000	0.0000976	0.000000633	No	No	No	- -	No
Benzene	0-3 ft	0.463	3,300,000	0.000000140	0.000000000910	No	No	No	- -	No
Bromomethane	0-3 ft	1.11	730,000	0.00000152	0.00000000986	No	No	No	- -	No
Carbon Disulfide	0-3 ft	1.12	2,000,000	0.000000560	0.00000000363	No	No	No	- -	No
Chloroform	0-3 ft	5.70	1,875,000	0.00000304	0.0000000197	No	No	No	- -	No
Dichlorodifluoromethane	0-3 ft	6.74	730,000	0.00000923	0.0000000599	No	No	No	- -	No
Dichloromethane (Methylene Chloride)	0-3 ft	56.0	730,000	0.0000767	0.000000498	No	No	No	- -	No
Ethylbenzene	0-3 ft	4.69	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-3 ft	1,820	120,000	0.0152	0.0000984	No	No	No	- -	No
Naphthalene	0-3 ft	1.94	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
n-Propylbenzene	0-3 ft	35.5	NA	- -	- -	- -	- -	No	No SLV	**Yes-Bio**
o-Xylene	0-3 ft	200	120,000	0.00167	0.0000108	No	No	No	- -	No
Tetrachloroethene (PCE)	0-3 ft	26,300	80,000	0.329	0.00213	No	No	No	- -	No
Toluene	0-3 ft	9,360	1,440,000	0.00650	0.0000422	No	No	No	- -	No
Trichloroethene (TCE)	0-3 ft	1,780	40,000	0.0445	0.000289	No	No	No	- -	No
SVOCs (ug/kg)										
Benzoic Acid	0-1 ft	166	1,440,000	0.000115	0.00000113	No	No	No	- -	No
Bis(2-ethylhexyl) Phthalate	0-1 ft	98,000	1,020,000	0.0961	0.000938	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-1 ft	17.1	30,000,000	0.000000570	0.00000000557	No	No	Yes	No	**Yes-Bio**
Carbazole	0-1 ft	144	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-1 ft	42.4	2	21.2	0.207	Yes	Yes	Yes	No	**Yes**
Dimethyl Phthalate	0-1 ft	31.4	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	80.4	30,000,000	0.00000268	0.0000000262	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-1 ft	25.1	30,000,000	0.000000837	0.00000000817	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-1 ft	14.1	2,800	0.00504	0.0000492	No	No	Yes	Yes	No
Phenol	0-1 ft	2.28	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Benzoic Acid	0-3 ft	132	1,440,000	0.0000917	0.000000595	No	No	No	- -	No
Bis(2-ethylhexyl) Phthalate	0-3 ft	77,100	1,020,000	0.0756	0.000490	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-3 ft	15.2	30,000,000	0.000000507	0.00000000329	No	No	Yes	No	**Yes-Bio**
Carbazole	0-3 ft	112	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-3 ft	122	2	61.0	0.396	Yes	Yes	Yes	No	**Yes**
Dimethyl Phthalate	0-3 ft	31.0	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-3 ft	54.3	30,000,000	0.00000181	0.0000000117	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-3 ft	22.5	30,000,000	0.00000075	0.00000000487	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-3 ft	13.3	2,800	0.00475	0.0000308	No	No	Yes	Yes	No
Phenol	0-3 ft	35.0	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
PAHs (ug/kg)										
2-Methylnaphthalene	0-1 ft	27.4	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Acenaphthene	0-1 ft	172	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Acenaphthylene	0-1 ft	17.4	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Anthracene	0-1 ft	338	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Fluorene	0-1 ft	154	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Naphthalene	0-1 ft	108	NA	- -	- -	- -	- -	No	- -	No
Phenanthrene	0-1 ft	1,260	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No

Table N-19
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(4 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	1,849	100,000	0.0185	0.000181	No	No	Yes	Yes	No
Benzo(a)anthracene	0-1 ft	1,750	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(a)pyrene	0-1 ft	1,760	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(b)fluoranthene	0-1 ft	1,950	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(g,h,i)perylene	0-1 ft	1,070	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(k)fluoranthene	0-1 ft	676	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzofluoranthenes, Total	0-1 ft	7,760	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Chrysene	0-1 ft	2,070	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Dibenz(a,h)anthracene	0-1 ft	244	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Fluoranthene	0-1 ft	4,640	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Indeno(1,2,3-cd)pyrene	0-1 ft	1,130	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Pyrene	0-1 ft	4,780	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	18,577	1,100	16.9	0.165	Yes	Yes	Yes	Yes	**Yes**
2-Methylnaphthalene	0-3 ft	23.9	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Acenaphthene	0-3 ft	652	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Acenaphthylene	0-3 ft	29.6	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Anthracene	0-3 ft	772	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Fluorene	0-3 ft	227	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Naphthalene	0-3 ft	81.4	NA	- -	- -	- -	- -	No	- -	No
Phenanthrene	0-3 ft	2,910	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	5,036	100,000	0.0504	0.000327	No	No	Yes	Yes	No
Benzo(a)anthracene	0-3 ft	2,450	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(a)pyrene	0-3 ft	2,390	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(b)fluoranthene	0-3 ft	2,210	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(g,h,i)perylene	0-3 ft	1,050	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(k)fluoranthene	0-3 ft	764	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzofluoranthenes, Total	0-3 ft	10,600	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Chrysene	0-3 ft	4,590	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Dibenz(a,h)anthracene	0-3 ft	238	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Fluoranthene	0-3 ft	10,800	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Indeno(1,2,3-cd)pyrene	0-3 ft	1,160	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Pyrene	0-3 ft	11,700	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	40,758	1,100	37.1	0.240	Yes	Yes	Yes	Yes	**Yes**
TPH (mg/kg)										
Diesel Range Organics	0-1 ft	229	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	2.29	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	671	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	266	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	1,030	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	577	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
For lead, the 95% UCL and maximum concentrations are from unseived samples.
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped

Table N-19
Identification of CPECs in Soil at Sandblast Area AOPC - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(5 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)

LPAH = low molecular weight polycyclic aromatic hydrocarbons
Incl in tHPAH = COI is included in the Total HPAH Screening
Incl in tLPAH = COI is included in the Total LPAH Screening
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Mammalian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 56
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 102.4
0-3 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 54
Tj (0-3 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 154
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-20
Identification of CPECs in Groundwater at Sandblast Area AOPC - Multiple COIs for Aquatic Organisms
Bradford Island - Upland Operable Unit
(1 of 2)

Chemicals of Interest	Medium	Dissolved or Total (D or T)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	(Tij/Tj) (9)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (9) (Q = 1)
INORGANICS (mg/L)									
Arsenic	Groundwater	D	0.00303	0.15	0.0202	0.00535	No	Yes	**Yes-Bio**
Calcium	Groundwater	D	44.3	116	0.382	0.101	Yes	No	**Yes**
Iron	Groundwater	D	0.0747	1.0	0.0747	0.0198	No	No	No
Magnesium	Groundwater	D	14.0	82	0.171	0.0452	Yes	No	**Yes**
Potassium	Groundwater	D	2.61	53	0.0492	0.0131	No	No	No
Sodium	Groundwater	D	89.4	680	0.131	0.0348	No	No	No
Vanadium	Groundwater	D	0.00133	0.020	0.0665	0.0176	No	NA	No
BUTYLTINS (ug/L)									
Monobutyltin	Groundwater	T	0.0216	0.063	0.343	0.0909	Yes	No	**Yes**
VOCs (ug/L)									
1,1,1-Trichloroethane (TCA)	Groundwater	T	1.90	11	0.173	0.0458	Yes	No	**Yes**
1,1-Dichloroethane	Groundwater	T	5.00	47	0.106	0.0282	No	No	No
1,1-Dichloroethene	Groundwater	T	2.10	25	0.0840	0.0223	No	No	No
Carbon Disulfide	Groundwater	T	0.255	0.92	0.277	0.0735	Yes	No	**Yes**
cis-1,2-Dichloroethene	Groundwater	T	658	590	1.12	0.296	Yes	No	**Yes**
Dichloromethane (Methylene Chloride)	Groundwater	T	0.175	2,200	0.0000795	0.0000211	No	No	No
Tetrachloroethene (PCE)	Groundwater	T	2.66	840	0.00317	0.000839	No	No	No
Toluene	Groundwater	T	0.640	9.8	0.0653	0.0173	No	No	No
trans-1,2-Dichloroethene	Groundwater	T	1.70	590	0.00288	0.000764	No	No	No
Trichloroethene (TCE)	Groundwater	T	3.35	3,000	0.00112	0.000296	No	No	No
Vinyl Chloride	Groundwater	T	1.10	1,300	0.000846	0.000224	No	No	No
TPH (mg/L)									
Diesel Range Organics	Groundwater	T	0.0173	NA	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	Groundwater	T	0.0151	NA	- -	- -	- -	- -	Yes - No SLV
PAHs (ug/L)									
2-Methylnaphthalene	Groundwater - DP	T	0.0833	72.16	0.00115	0.000306	No	Yes	**Yes-Bio**
Acenaphthene	Groundwater - DP	T	0.0135	55.85	0.000242	0.0000641	No	Yes	**Yes-Bio**
Anthracene	Groundwater - DP	T	0.0126	13	0.000969	0.000257	No	Yes	**Yes-Bio**
Benzo(a)pyrene	Groundwater - DP	T	0.00895	0.014	0.639	0.169	Yes	Yes	**Yes**
Dibenz(a,h)anthracene	Groundwater - DP	T	0.00671	0.2825	0.0238	0.00629	No	Yes	**Yes-Bio**
Fluoranthene	Groundwater - DP	T	0.0311	6.16	0.00505	0.00134	No	Yes	**Yes-Bio**
Fluorene	Groundwater - DP	T	0.0190	3.9	0.00487	0.00129	No	Yes	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	Groundwater - DP	T	0.00797	0.275	0.0290	0.00768	No	Yes	**Yes-Bio**
Pyrene	Groundwater - DP	T	0.0261	10.11	0.00258	0.000684	No	Yes	**Yes-Bio**

This table only includes COIs detected > 5% and above the reference area (metals only).
For lead, the 95% UCL and maximum concentrations are from unseived samples.
CPEC = chemical of potential ecological concern

Table N-20
Identification of CPECs in Groundwater at Sandblast Area AOPC - Multiple COIs for Aquatic Organisms
Bradford Island - Upland Operable Unit
(2 of 2)

Chemicals of Interest	Medium	Dissolved or Total (D or T)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	(Tij/Tj) (9)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (9) (Q = 1)

COI = chemical of interest
NA = not available
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) In addition to seep water and surface water concentrations, concentrations in groundwater were compared to Selected Level II SLVs for surface water as a conservative measure (in the event that groundwater discharges to surface water).

Hierarchy of Aquatic Organisms SLV Selection (see Appendix J-5b)
(2) USEPA 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.
(3) Oregon Department of Environmental Quality (DEQ). Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Table 33A).
(4) DEQ 1998. Updated 2001. Guidance for Ecological risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.
(5) Suter GW II, and CL Tsao. 1996. Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on Oak Ridge Reservation: 1996 Revision. ORNL, Oak Ridge, TN 104pp. ES/ER/TM-96/R2.
(6) USEPA 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. November. EPA-600-R-02-013.
(7) Canadian Council of Resource and Environment Ministers. 2007. Canadian Water Quality Guidelines for the Protection of Aquatic Life. December Accessed on 1/20/10 at http://ceqg-rcqe.ccme.ca/.
(8) Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34

Multiple COIs Simultaneously within a Given Medium
(9) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
Groundwater
Nij = total number of *i* contaminants in medium *j* = 28
Tj = sum of toxicity ratios for all contaminants in medium *j* = 3.77
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-21
Identification of CPECs in Soil at Pistol Range AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(1 of 1)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)							
Lead	0-1 ft	1,110	120	9.25	Yes	Yes	**Yes**
Nickel	0-1 ft	32.0	38	0.842	No	No	No
Zinc	0-1 ft	199	160	1.24	Yes	No	**Yes**

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered

Hierarchy of Terrestrial Plant SLV Selection (see Appendix J-5a)

For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.

(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

(3) Efroymson RA, ME Wil, GW Suter II, and AC Wooten. 1997. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. November. ORNL. ES/ER/TM-85/R3.

(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Individual COIs in a Given Media

(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

Tij = Risk ratios for contaminant *i* in medium *j*

Q = Receptor designator

Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).

Q = 1 for terrestrial T&E species and all aquatic species

Q = 5 for all common terrestrial species

For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-22
Identification of CPECs in Soil at Pistol Range AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(1 of 1)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)							
Lead	0-1 ft	1,110	1700	0.653	No	No	No
Nickel	0-1 ft	32.0	280	0.114	No	No	No
Zinc	0-1 ft	199	120	1.66	Yes	No	**Yes**

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered

Hierarchy of Terrestrial Invertebrate SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(3) RA Efroymson. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process, Nov 1997 Revision. ORNL ES/ER/TM-126/R2.

(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-23
Identification of CPECs in Soil at Pistol Range AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(1 of 1)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)									
Lead	0-1 ft	365	25.5	14.3	Yes	Yes	Yes	Yes	**Yes**
Nickel	0-1 ft	25.9	210	0.123	No	No	Yes	Yes	No
Zinc	0-1 ft	148	71.7	2.06	Yes	No	Yes	Yes	**Yes**

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Avian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Lower of 95% UCL and maximum concentration for wildlife species (birds and mammals).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-24
Identification of CPECs in Soil at Pistol Range AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(1 of 1)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
INORGANICS (mg/kg)									
Lead	0-1 ft	365	56	6.52	Yes	Yes	Yes	Yes	**Yes**
Nickel	0-1 ft	25.9	130	0.199	No	No	Yes	Yes	No
Zinc	0-1 ft	148	79	1.87	Yes	No	Yes	Yes	No

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Mammalian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Lower of 95% UCL and maximum concentration for wildlife species (birds and mammals).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-25
Identification of CPECs in Groundwater at Pistol Range AOPC - Individual COIs for Aquatic Organisms
Bradford Island - Upland Operable Unit
(1 of 1)

Chemicals of Interest	Medium	Dissolved or Total (D or T)	Max Detected Concentration (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	Chemical is a Concern for Aquatic Organisms (Tij>1)?	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (9) (Q = 1)
INORGANICS (mg/L)								
Copper	Groundwater-DP	D	0.000800	0.0058	0.138	No	No	No
Nickel	Groundwater-DP	D	0.00390	0.034	0.116	No	No	No
Zinc	Groundwater-DP	D	0.00410	0.077	0.0535	No	Yes	**Yes-Bio**

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV

(1) In addition to seep water and surface water concentrations, concentrations in groundwater were compared to Selected Level II SLVs for surface water as a conservative measure (in the event that groundwater discharges to surface water).

Hierarchy of Aquatic Organisms SLV Selection (see Appendix J-5b)
(2) USEPA 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.
(3) Oregon Department of Environmental Quality (DEQ). Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Table 33A).
(4) DEQ 1998. Updated 2001. Guidance for Ecological risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.
(5) Suter GW II, and CL Tsao. 1996. Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on Oak Ridge Reservation: 1996 Revision. ORNL, Oak Ridge, TN. 104pp. ES/ER/TM-96/R2.
(6) USEPA 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. November. EPA-600-R-02-013.
(7) Canadian Council of Resource and Environment Ministers. 2007. Canadian Water Quality Guidelines for the Protection of Aquatic Life. December Accessed on 1/20/10 at http://ceqg-rcqe.ccme.ca/.
(8) Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34 pages.

Individual COIs in a Given Media
(9) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLV ij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Maximum detected concentration (for aquatic receptors).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-26
Identification of CPECs in Lagoon Sediment at Pistol Range AOPC - Individual COIs for Benthic Invertebrates
Bradford Island - Upland Operable Unit
(1 of 1)

Chemical of Interest	Max Detected Conc in Sediment	Level II SLVs for Benthics Exposed to Sediment (1)	Toxicity Ratio for Benthics (Tij)	Chemical is a Concern for Benthic Community? (Tij>1)	COI is Identified as a CPEC? (2) (Q = 1)
INORGANICS (mg/kg)					
Copper	25.4	55.6	0.457	No	No
Lead	33.0	35	0.943	No	No
Nickel	15.4	21.2	0.726	No	No
Zinc	174	123	1.41	Yes	**Yes**

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered

(1) The greater of the site-specific reference 95% UPL concentration and the DEQ Level II SLV (see Appendix J-5c):
Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001

Individual COIs in a Given Media

(2) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-27
Identification of CPECs in Lagoon Sediment at Pistol Range AOPC - Individual COIs for Fish and Wildlife
Bradford Island - Upland Operable Unit
(1 of 1)

Chemicals of Interest	Max Detected Conc in Sediment	River OU Reference 95% UPL for Sediment	Toxicity Ratio for Fish, Birds, Mammals (Tij)	Chemical is a Concern for Fish and Aquatic-Dependent Birds and Mammals? (Tij>1)	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (1) (Q = 1)
INORGANICS (mg/kg)						
Copper	25.4	55.6	0.457	No	No	No
Lead	33.0	14.5	2.28	Yes	Yes	**Yes**
Nickel	15.4	21.2	0.726	No	No	No
Zinc	174	106	1.64	Yes	Yes	**Yes**

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean

Individual COIs in a Given Media

(1) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Lower of 95% UCL and maximum concentration for wildlife species (birds and mammals).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-28
Identification of CPECs in Soil at Pistol Range AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(1 of 1)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)								
Lead	0-1 ft	1,110	120	9.25	0.819	Yes	No	**Yes**
Nickel	0-1 ft	32.0	38	0.842	0.0745	No	No	No
Zinc	0-1 ft	199	160	1.24	0.110	No	No	No

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered

Hierarchy of Terrestrial Plant SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(3) Efroymson RA, ME Wil, GW Suter II, and AC Wooten. 1997. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. November. ORNL. ES/ER/TM-85/R3.
(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 3
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 11.3
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-29
Identification of CPECs in Soil at Pistol Range AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(1 of 1)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)								
Lead	0-1 ft	1,110	1700	0.653	0.269	No	No	No
Nickel	0-1 ft	32.0	280	0.114	0.0470	No	No	No
Zinc	0-1 ft	199	120	1.66	0.682	Yes	No	**Yes**

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered

Hierarchy of Terrestrial Invertebrate SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.

(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

(3) RA Efroymson. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process, Nov 1997 Revision. ORNL ES/ER/TM-126/R2.

(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 3
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 2.43
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-30
Identification of CPECs in Soil at Pistol Range AOPC - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(1 of 1)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)										
Lead	0-1 ft	365	25.5	14.3	0.867	Yes	No	Yes	Yes	**Yes**
Nickel	0-1 ft	25.9	210	0.123	0.00747	No	No	Yes	Yes	No
Zinc	0-1 ft	148	71.7	2.06	0.125	No	No	Yes	Yes	No

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.

Hierarchy of Avian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 3
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 16.5
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-31
Identification of CPECs in Soil at Pistol Range AOPC - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(1 of 1)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
INORGANICS (mg/kg)										
Lead	0-1 ft	365	56	6.52	0.759	Yes	No	Yes	Yes	No
Nickel	0-1 ft	25.9	130	0.199	0.0232	No	No	Yes	Yes	No
Zinc	0-1 ft	148	79	1.87	0.218	No	No	Yes	Yes	No

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Mammalian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 3
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 8.59
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-32
Identification of CPECs in Groundwater at Pistol Range AOPC - Multiple COIs for Aquatic Organisms
Bradford Island - Upland Operable Unit
(1 of 1)

Chemicals of Interest	Medium	Dissolved or Total (D or T)	Max Detected Concentration (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	(Tij/Tj) (9)	Chemical is a Concern for Aquatic Organisms? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (9) (Q = 1)
INORGANICS (mg/L)									
Copper	Groundwater-DP	D	0.0008	0.0058	0.138	0.450	No	No	No
Nickel	Groundwater-DP	D	0.0039	0.034	0.116	0.376	No	No	No
Zinc	Groundwater-DP	D	0.0041	0.077	0.0535	0.174	No	Yes	**Yes-Bio**

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV

(1) In addition to seep water and surface water concentrations, concentrations in groundwater were compared to Selected Level II SLVs for surface water as a conservative measure (in the event that groundwater discharges to surface water).

Hierarchy of Aquatic Organisms SLV Selection (see Appendix J-5b)
(2) USEPA 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.
(3) Oregon Department of Environmental Quality (DEQ). Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Table 33A).
(4) DEQ 1998. Updated 2001. Guidance for Ecological risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.
(5) Suter GW II, and CL Tsao. 1996. Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on Oak Ridge Reservation: 1996 Revision. ORNL, Oak Ridge, TN. 104pp. ES/ER/TM-96/R2.
(6) USEPA 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. November. EPA-
(7) Canadian Council of Resource and Environment Ministers. 2007. Canadian Water Quality Guidelines for the Protection of Aquatic Life. December Accessed on 1/20/10 at http://ceqg-rcqe.ccme.ca/.
(8) Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34 pages.

Multiple COIs Simultaneously within a Given Medium
(9) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
Groundwater-DP
Nij = total number of *i* contaminants in medium *j* = 3
Tj = sum of toxicity ratios for all contaminants in medium *j* = 0.31
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-33
Identification of CPECs in Lagoon Sediment at Pistol Range AOPC - Multiple COIs for Benthic Invertebrates
Bradford Island - Upland Operable Unit
(1 of 1)

Chemicals of Interest	Max Detected Conc in Sediment	Level II SLVs for Benthics Exposed to Sediment (1)	Toxicity Ratio for Benthics (Tij)	(Tij/Tj) (2)	Chemical is a Concern for Benthic Community? (Tij/Tj >= [1/Nij] x Q when Q = 1)	COI is Identified as a CPEC? (2) (Q = 1)
INORGANICS (mg/kg)						
Copper	25	55.6	0.457	0.129	No	No
Lead	33	35.0	0.943	0.266	Yes	**Yes**
Nickel	15	21.2	0.726	0.205	No	No
Zinc	174	123	1.41	0.400	Yes	**Yes**

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered

(1) The greater of the site-specific reference 95% UPL concentration and the DEQ Level II SLV (see Appendix J-5c):
Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

Multiple COIs Simultaneously within a Given Medium

(2) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
Nij = total number of *i* contaminants in medium *j* = 4
Tj = sum of toxicity ratios for all contaminants in medium *j* = 3.54
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-34
Identification of CPECs in Lagoon Sediment at Pistol Range AOPC - Multiple COIs for Fish and Wildlife
Bradford Island - Upland Operable Unit
(1 of 1)

Chemicals of Interest	Max Detected Conc in Sediment	River OU Reference 95% UPL for Sediment	Toxicity Ratio for Fish, Birds, Mammals (Tij)	(Tij/Tj) (2)	Chemical is a Concern for Fish and Aquatic-Dependent Birds and Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Is COI Bioaccum-ulative?	COI is Identified as a CPEC? (1) (Q = 1)
INORGANICS (mg/kg)							
Copper	25	55.6	0.457	0.0896	No	No	No
Lead	33	14.5	2.28	0.446	Yes	Yes	**Yes**
Nickel	15	21.2	0.726	0.142	No	No	No
Zinc	174	106	1.64	0.322	Yes	Yes	**Yes**

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean

Multiple COIs Simultaneously within a Given Medium
(1) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
Nij = total number of *i* contaminants in medium *j* = 4
Tj = sum of toxicity ratios for all contaminants in medium *j* = 5.10
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-35
Identification of CPECs in Soil at Bulb Slope AOPC - Individual COIs for Plants
Bradford Island - Upland Operable Unit
(1 of 1)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	Concern for Threatened or Endangered Plants? (Tij>1)	Concern for Non-threatened or Endangered Plants? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)							
Lead	0-1 ft	597	120	4.98	Yes	No	**Yes**
Mercury	0-1 ft	1.54	0.30	5.13	Yes	Yes	**Yes**
PCBs (ug/kg)							
Aroclor 1260	0-1 ft	251	40,000	0.00628	No	No	No
Total PCBs (Aroclors)	0-1 ft	251	40,000	0.00628	No	No	No
TPH (mg/kg)							
Diesel Range Organics	0-1 ft	170	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	410	NA	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
NE = Not Evaluated. COI could not be evaluated due to a lack of toxicity data and was retained for uncertainty discussion (Section 5.4.2).
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

Hierarchy of Terrestrial Plant SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.

(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

(3) Efroymson RA, ME Wil, GW Suter II, and AC Wooten. 1997. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. November. ORNL. ES/ER/TM-85/R3.

(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant*i* in medium *j* .
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-36
Identification of CPECs in Soil at Bulb Slope AOPC - Individual COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(1 of 1)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij>1)	Chemical is a Concern for Non-threatened or Endangered Invertebrates? (Tij>5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)							
Lead	0-1 ft	597	1,700	0.351	No	No	No
Mercury	0-1 ft	1.54	0.1	15.4	Yes	Yes	**Yes**
PCBs (ug/kg)							
Aroclor 1260	0-1 ft	251	2,510	0.100	No	No	No
Total PCBs (Aroclors)	0-1 ft	251	2,510	0.100	No	No	No
TPH (mg/kg)							
Diesel Range Organics	0-1 ft	170	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	410	NA	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
NE = Not Evaluated. COI could not be evaluated due to a lack of toxicity data and was retained for uncertainty discussion (Section 5.4.2).
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

Hierarchy of Terrestrial Invertebrate SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(3) RA Efroymson. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process, Nov 1997 Revision. ORNL ES/ER/TM-126/R2.

(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant*i* in medium *j* .
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-37
Identification of CPECs in Soil at Bulb Slope AOPC - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(1 of 1)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)									
Lead	0-1 ft	307	25.5	12.0	Yes	Yes	Yes	Yes	**Yes**
Mercury	0-1 ft	0.720	0.066	10.9	Yes	Yes	Yes	Yes	**Yes**
PCBs (ug/kg)									
Aroclor 1260	0-1 ft	108	655	0.165	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-1 ft	104	655	0.158	No	No	Yes	Yes	No
TPH (mg/kg)									
Diesel Range Organics	0-1 ft	102	NA	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	232	NA	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
NE = Not Evaluated. COI could not be evaluated due to a lack of toxicity data and was retained for uncertainty discussion (Section 5.4.2).
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Avian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant*i* in medium *j* .
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Lower of 95% UCL and maximum concentration for wildlife species (birds and mammals).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-38
Identification of CPECs in Soil at Bulb Slope AOPC - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(1 of 1)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
INORGANICS (mg/kg)									
Lead	0-1 ft	307	56	5.48	Yes	Yes	Yes	Yes	**Yes**
Mercury	0-1 ft	0.720	0.146	4.93	Yes	No	Yes	Yes	No
PCBs (ug/kg)									
Aroclor 1260	0-1 ft	108	371	0.291	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-1 ft	104	371	0.280	No	No	Yes	Yes	No
TPH (mg/kg)									
Diesel Range Organics	0-1 ft	102	NA	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	232	NA	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
NE = Not Evaluated. COI could not be evaluated due to a lack of toxicity data and was retained for uncertainty discussion (Section 5.4.2).
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Mammalian SLV Selection (see Appendix J-5a)

For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.

(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Individual COIs in a Given Media

(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant*i* in medium *j* .

Tij = Risk ratios for contaminant *i* in medium *j*

Q = Receptor designator

Assumptions: Cij = Lower of 95% UCL and maximum concentration for wildlife species (birds and mammals).

Q = 1 for terrestrial T&E species and all aquatic species

Q = 5 for all common terrestrial species

For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-39
Identification of CPECs in Soil at Bulb Slope AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(1 of 2)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)								
Lead	0-1 ft	597	120	4.98	0.493	Yes	No	**Yes**
Mercury	0-1 ft	1.54	0.3	5.13	0.508	Yes	No	**Yes**
PCBs (ug/kg)								
Aroclor 1260	0-1 ft	251	40,000	0.00628	0.000621	No	No	No
TPH (mg/kg)								
Diesel Range Organics	0-1 ft	170	NA	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	410	NA	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
NE = Not Evaluated. COI could not be evaluated due to a lack of toxicity data and was retained for uncertainty discussion (Section 5.4.2).
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

Hierarchy of Terrestrial Plant SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(3) Efroymson RA, ME Wil, GW Suter II, and AC Wooten. 1997. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. November. ORNL. ES/ER/TM-85/R3.
(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 3
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 10.1
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-39
Identification of CPECs in Soil at Bulb Slope AOPC - Multiple COIs for Plants
Bradford Island - Upland Operable Unit
(2 of 2)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Plants Exposed to Soil (1,2,3,4)	Toxicity Ratio for Plants (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Plants? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)

For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-40
Identification of CPECs in Soil at Bulb Slope AOPC - Multiple COIs for Soil Invertebrates
Bradford Island - Upland Operable Unit
(1 of 1)

Chemical of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II SLVs for Invertebrates Exposed to Soil (1,2,3,4)	Toxicity Ratio for Invertebrates (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Invertebrates? (Tij/Tj >= [1/Nij] x Q when Q = 5)	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)								
Lead	0-1 ft	597	1,700	0.351	0.0221	No	No	No
Mercury	0-1 ft	1.54	0.1	15.4	0.969	Yes	No	**Yes**
PCBs (ug/kg)								
Aroclor 1260	0-1 ft	251	2,510	0.100	0.00629	No	No	No
TPH (mg/kg)								
Diesel Range Organics	0-1 ft	170	NA	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	410	NA	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
NE = Not Evaluated. COI could not be evaluated due to a lack of toxicity data and was retained for uncertainty discussion (Section 5.4.2).
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

Hierarchy of Terrestrial Invertebrate SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(1) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(2) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(3) RA Efroymson. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process, Nov 1997 Revision. ORNL ES/ER/TM-126/R2.
(4) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 3
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 15.9
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-41
Identification of CPECs in Soil at Bulb Slope AOPC - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(1 of 2)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?
INORGANICS (mg/kg)									
Lead	0-1 ft	307	25.5	12.0	0.521	Yes	No	Yes	Yes
Mercury	0-1 ft	0.720	0.066	10.9	0.472	Yes	No	Yes	Yes
PCBs (ug/kg)									
Aroclor 1260	0-1 ft	108	655	0.165	0.00713	No	No	Yes	Yes
TPH (mg/kg)									
Diesel Range Organics	0-1 ft	102	NA	- -	- -	- -	- -	- -	- -
Residual Range Organics	0-1 ft	232	NA	- -	- -	- -	- -	- -	- -

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
NE = Not Evaluated. COI could not be evaluated due to a lack of toxicity data and was retained for uncertainty discussion (Section 5.4.2).
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.

Hierarchy of Avian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 928
Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 3
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 23.1
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of I
of SLVs (Eco-SSLs).

Table N-41
Identification of CPECs in Soil at Bulb Slope AOPC - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(2 of 2)

COI is Identified as a CPEC? (5) (Q = 1)
Yes
Yes
No
Yes - No SLV
Yes - No SLV

5.7-72. Last

DEQ due to basis

Table N-42
Identification of CPECs in Soil at Bulb Slope AOPC - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(1 of 1)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
INORGANICS (mg/kg)										
Lead	0-1 ft	307	56	5.48	0.512	Yes	No	Yes	Yes	No
Mercury	0-1 ft	0.720	0.146	4.93	0.461	Yes	No	Yes	Yes	No
PCBs (ug/kg)										
Aroclor 1260	0-1 ft	108	371	0.291	0.0272	No	No	Yes	Yes	No
TPH (mg/kg)										
Diesel Range Organics	0-1 ft	102	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	232	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
NE = Not Evaluated. COI could not be evaluated due to a lack of toxicity data and was retained for uncertainty discussion (Section 5.4.2).
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Mammalian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 3
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 10.7
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-43
Identification of CPECs in Soil at All Four AOPCs Combined - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(1 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)									
Antimony	0-1 ft	1.80	0.176	10.2	Yes	Yes	No	--	**Yes**
Arsenic	0-1 ft	9.20	43	0.214	No	No	Yes	Yes	No
Cadmium	0-1 ft	1.97	0.77	2.56	Yes	No	Yes	Yes	**Yes**
Chromium	0-1 ft	567	28.1	20.2	Yes	Yes	Yes	Yes	**Yes**
Lead	0-1 ft	398	25.5	15.6	Yes	Yes	Yes	Yes	**Yes**
Mercury	0-1 ft	0.378	0.066	5.73	Yes	Yes	Yes	Yes	**Yes**
Nickel	0-1 ft	227	210	1.08	Yes	No	Yes	Yes	**Yes**
Selenium	0-1 ft	0.412	1.2	0.343	No	No	Yes	Yes	No
Silver	0-1 ft	0.216	4.2	0.0514	No	No	Yes	Yes	No
Zinc	0-1 ft	188	71.7	2.62	Yes	No	Yes	Yes	**Yes**
Antimony	0-3 ft	1.64	0.176	9.32	Yes	Yes	No	--	**Yes**
Arsenic	0-3 ft	8.20	43	0.191	No	No	Yes	Yes	No
Cadmium	0-3 ft	1.67	0.77	2.17	Yes	No	Yes	Yes	**Yes**
Chromium	0-3 ft	510	28.1	18.1	Yes	Yes	Yes	Yes	**Yes**
Lead	0-3 ft	396	25.5	15.5	Yes	Yes	Yes	Yes	**Yes**
Mercury	0-3 ft	0.330	0.066	5.00	Yes	Yes	Yes	Yes	**Yes**
Nickel	0-3 ft	234	210	1.11	Yes	No	Yes	Yes	**Yes**
Selenium	0-3 ft	0.431	1.2	0.359	No	No	Yes	Yes	No
Silver	0-3 ft	0.207	4.2	0.0493	No	No	Yes	Yes	No
Zinc	0-3 ft	172	71.7	2.40	Yes	No	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)									
Dibutyltin	0-1 ft	19.0	28,000	0.000679	No	No	No	--	No
Monobutyltin	0-1 ft	10.4	28,000	0.000371	No	No	No	--	No
Tributyltin	0-1 ft	422	28,000	0.0151	No	No	Yes	No	**Yes-Bio**
Dibutyltin	0-3 ft	14.7	28,000	0.000525	No	No	No	--	No
Monobutyltin	0-3 ft	8.72	28,000	0.000311	No	No	No	--	No
Tributyltin	0-3 ft	219	28,000	0.00782	No	No	Yes	No	**Yes-Bio**
PESTICIDES (ug/kg)									
4,4'-DDE	0-1 ft	1.33	93	0.0143	No	No	Yes	Yes	No
4,4'-DDT	0-1 ft	21.5	93	0.231	No	No	Yes	Yes	No
Total DDTs	0-1 ft	23.1	93	0.248	No	No	Yes	Yes	No
Chlordane (alpha)	0-1 ft	1.01	9,000	0.000112	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-1 ft	18.8	9,000	0.00209	No	No	Yes	No	**Yes-Bio**
Chlordane (technical)	0-1 ft	1,560	9,000	0.173	No	No	Yes	No	**Yes-Bio**
Dieldrin	0-1 ft	0.608	22	0.0276	No	No	Yes	Yes	No
Endosulfan II	0-1 ft	0.844	42,000	0.0000201	No	No	Yes	No	**Yes-Bio**

Table N-43
Identification of CPECs in Soil at All Four AOPCs Combined - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(2 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Endosulfan Sulfate	0-1 ft	1.08	42,000	0.0000257	No	No	Yes	No	**Yes-Bio**
Endrin	0-1 ft	4.21	22	0.191	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-1 ft	3.14	22	0.143	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-1 ft	2.61	22	0.119	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-1 ft	0.437	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
4,4'-DDE	0-3 ft	1.18	93	0.0127	No	No	Yes	Yes	No
4,4'-DDT	0-3 ft	19.3	93	0.208	No	No	Yes	Yes	No
Total DDTs	0-3 ft	21.6	93	0.232	No	No	Yes	Yes	No
Chlordane (alpha)	0-3 ft	0.952	9,000	0.000106	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-3 ft	11.8	9,000	0.00131	No	No	Yes	No	**Yes-Bio**
Chlordane (technical)	0-3 ft	902	9,000	0.100	No	No	Yes	No	**Yes-Bio**
Endosulfan I	0-3 ft	0.547	42,000	0.0000130	No	No	Yes	No	**Yes-Bio**
Endosulfan II	0-3 ft	0.756	42,000	0.0000180	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-3 ft	1.01	42,000	0.0000240	No	No	Yes	No	**Yes-Bio**
Endrin	0-3 ft	3.21	22	0.146	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-3 ft	2.86	22	0.130	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-3 ft	2.50	22	0.114	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-3 ft	0.477	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)									
Aroclor 1254	0-1 ft	99.4	655	0.152	No	No	Yes	Yes	No
Aroclor 1260	0-1 ft	140	655	0.214	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-1 ft	304	655	0.464	No	No	Yes	Yes	No
Aroclor 1254	0-3 ft	147	655	0.224	No	No	Yes	Yes	No
Aroclor 1260	0-3 ft	123	655	0.188	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-3 ft	325	655	0.496	No	No	Yes	Yes	No
HERBICIDES (ug/kg)									
2,4,5-T	0-1 ft	67.2	93	0.723	No	No	No	- -	No
Dichloroprop	0-1 ft	172	93	1.85	Yes	No	No	- -	**Yes**
MCPP	0-1 ft	10,300	93	111	Yes	Yes	No	- -	**Yes**
2,4,5-T	0-3 ft	66.9	93	0.719	No	No	No	- -	No
Dichloroprop	0-3 ft	172	93	1.85	Yes	No	No	- -	**Yes**
MCPP	0-3 ft	10,200	93	110	Yes	Yes	No	- -	**Yes**
VOCs (ug/kg)									
1,2,4-Trimethylbenzene	0-1 ft	2,940	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
1,3,5-Trimethylbenzene	0-1 ft	1,150	NA	- -	- -	- -	No	- -	Yes - No SLV
2-Butanone (MEK)	0-1 ft	13.2	NA	- -	- -	- -	No	- -	Yes - No SLV
2-Hexanone	0-1 ft	5.17	NA	- -	- -	- -	No	- -	Yes - No SLV

Table N-43
Identification of CPECs in Soil at All Four AOPCs Combined - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(3 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
4-Isopropyltoluene	0-1 ft	1.02	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-1 ft	0.566	NA	- -	- -	- -	No	- -	Yes - No SLV
Acetone	0-1 ft	129	NA	- -	- -	- -	No	- -	Yes - No SLV
Benzene	0-1 ft	0.470	NA	- -	- -	- -	No	- -	Yes - No SLV
Bromomethane	0-1 ft	1.29	NA	- -	- -	- -	No	- -	Yes - No SLV
Carbon Disulfide	0-1 ft	1.04	NA	- -	- -	- -	No	- -	Yes - No SLV
Chloroform	0-1 ft	5.06	NA	- -	- -	- -	No	- -	Yes - No SLV
Dichlorodifluoromethane	0-1 ft	5.98	NA	- -	- -	- -	No	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-1 ft	98.2	NA	- -	- -	- -	No	- -	Yes - No SLV
Ethylbenzene	0-1 ft	562	NA	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	2,040	NA	- -	- -	- -	No	- -	Yes - No SLV
Naphthalene	0-1 ft	1,750	NA	- -	- -	- -	No	- -	Yes - No SLV
o-Xylene	0-1 ft	0.180	NA	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-1 ft	4.96	NA	- -	- -	- -	No	- -	Yes - No SLV
Toluene	0-1 ft	1.17	NA	- -	- -	- -	No	- -	Yes - No SLV
Trichloroethene (TCE)	0-1 ft	0.0765	NA	- -	- -	- -	No	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-3 ft	2,860	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
1,3,5-Trimethylbenzene	0-3 ft	417	NA	- -	- -	- -	No	- -	Yes - No SLV
2-Butanone (MEK)	0-3 ft	10.4	NA	- -	- -	- -	No	- -	Yes - No SLV
4-Isopropyltoluene	0-3 ft	14.7	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-3 ft	0.518	NA	- -	- -	- -	No	- -	Yes - No SLV
Acetone	0-3 ft	90.8	NA	- -	- -	- -	No	- -	Yes - No SLV
Benzene	0-3 ft	0.412	NA	- -	- -	- -	No	- -	Yes - No SLV
Bromomethane	0-3 ft	1.01	NA	- -	- -	- -	No	- -	Yes - No SLV
Carbon Disulfide	0-3 ft	1.00	NA	- -	- -	- -	No	- -	Yes - No SLV
Dichlorodifluoromethane	0-3 ft	5.04	NA	- -	- -	- -	No	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-3 ft	40.3	NA	- -	- -	- -	No	- -	Yes - No SLV
Ethylbenzene	0-3 ft	308	NA	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-3 ft	1,460	NA	- -	- -	- -	No	- -	Yes - No SLV
Naphthalene	0-3 ft	960	NA	- -	- -	- -	No	- -	Yes - No SLV
o-Xylene	0-3 ft	131	NA	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-3 ft	44,400	NA	- -	- -	- -	No	- -	Yes - No SLV
Toluene	0-3 ft	4,060	NA	- -	- -	- -	No	- -	Yes - No SLV
Trichloroethene (TCE)	0-3 ft	833	NA	- -	- -	- -	No	- -	Yes - No SLV
SVOCs (ug/kg)									
Benzoic Acid	0-1 ft	133	NA	- -	- -	- -	No	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-1 ft	36,400	4,500	8.09	Yes	Yes	Yes	No	**Yes**

Table N-43
Identification of CPECs in Soil at All Four AOPCs Combined - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(4 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Butyl Benzyl Phthalate	0-1 ft	17.2	450	0.0382	No	No	Yes	No	**Yes-Bio**
Carbazole	0-1 ft	272	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-1 ft	77.1	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Diethyl Phthalate	0-1 ft	16.0	NA	- -	- -	- -	No	- -	Yes - No SLV
Dimethyl Phthalate	0-1 ft	30.9	NA	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	124	450	0.276	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-1 ft	21.0	450	0.0467	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-1 ft	28.6	2,100	0.0136	No	No	Yes	Yes	No
Benzoic Acid	0-3 ft	122	NA	- -	- -	- -	No	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-3 ft	31,300	4,500	6.96	Yes	Yes	Yes	No	**Yes**
Butyl Benzyl Phthalate	0-3 ft	15.4	450	0.0342	No	No	Yes	No	**Yes-Bio**
Carbazole	0-3 ft	312	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-3 ft	83.4	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Diethyl Phthalate	0-3 ft	15.6	NA	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-3 ft	105	450	0.233	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-3 ft	19.4	450	0.0431	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-3 ft	24.8	2,100	0.0118	No	No	Yes	Yes	No
Phenol	0-3 ft		NA	- -	- -	- -	No	- -	Yes - No SLV
PAHs (ug/kg)									
2-Methylnaphthalene	0-1 ft	180	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthene	0-1 ft	380	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthylene	0-1 ft	18.0	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Anthracene	0-1 ft	535	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluorene	0-1 ft	139	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Naphthalene	0-1 ft	185	NA	- -	- -	- -	No	- -	Yes - No SLV
Phenanthrene	0-1 ft	2,200	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	3,440	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)anthracene	0-1 ft	4,390	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)pyrene	0-1 ft	4,570	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(b)fluoranthene	0-1 ft	20,700	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(g,h,i)perylene	0-1 ft	2,440	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(k)fluoranthene	0-1 ft	19,800	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzofluoranthenes, Total	0-1 ft	10,700	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Chrysene	0-1 ft	4,510	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenz(a,h)anthracene	0-1 ft	1,120	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluoranthene	0-1 ft	8,020	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	0-1 ft	2,670	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**

Table N-43
Identification of CPECs in Soil at All Four AOPCs Combined - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(5 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Pyrene	0-1 ft	7,090	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	47,078	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
2-Methylnaphthalene	0-3 ft	155	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthene	0-3 ft	564	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthylene	0-3 ft	26.2	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Anthracene	0-3 ft	1,250	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluorene	0-3 ft	191	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Naphthalene	0-3 ft	161	NA	- -	- -	- -	No	- -	Yes - No SLV
Phenanthrene	0-3 ft	3,870	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	5,089	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)anthracene	0-3 ft	5,260	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)pyrene	0-3 ft	7,150	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(b)fluoranthene	0-3 ft	9,750	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(g,h,i)perylene	0-3 ft	3,690	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(k)fluoranthene	0-3 ft	11,000	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzofluoranthenes, Total	0-3 ft	17,600	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Chrysene	0-3 ft	5,790	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenz(a,h)anthracene	0-3 ft	1,040	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluoranthene	0-3 ft	11,900	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	0-3 ft	3,480	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Pyrene	0-3 ft	10,400	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	53,046	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
TPH (mg/kg)									
Diesel Range Organics	0-1 ft	524	NA	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	164	NA	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	2,430	NA	- -	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	473	NA	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	782	NA	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	2,030	NA	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit

Table N-43
Identification of CPECs in Soil at All Four AOPCs Combined - Individual COIs for Birds
Bradford Island - Upland Operable Unit
(6 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	Concern for Threatened or Endangered Birds? (Tij>1)	Concern for Non-threatened or Endangered Birds? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)

NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Avian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Lower of 95% UCL and maximum concentration for wildlife species (birds and mammals).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-44
Identification of CPECs in Soil at All Four AOPCs Combined - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(1 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
INORGANICS (mg/kg)									
Antimony	0-1 ft	1.80	0.27	6.67	Yes	Yes	No	- -	**Yes**
Arsenic	0-1 ft	9.20	46	0.200	No	No	Yes	Yes	No
Cadmium	0-1 ft	1.97	0.36	5.47	Yes	Yes	Yes	Yes	**Yes**
Chromium	0-1 ft	567	34	16.7	Yes	Yes	Yes	Yes	**Yes**
Lead	0-1 ft	398	56	7.11	Yes	Yes	Yes	Yes	**Yes**
Mercury	0-1 ft	0.378	0.146	2.59	Yes	No	Yes	Yes	No
Nickel	0-1 ft	227	130	1.75	Yes	No	Yes	Yes	No
Selenium	0-1 ft	0.412	0.63	0.654	No	No	Yes	Yes	No
Silver	0-1 ft	0.216	14	0.0154	No	No	Yes	Yes	No
Zinc	0-1 ft	188	79	2.38	Yes	No	Yes	Yes	No
Antimony	0-3 ft	1.64	0.27	6.07	Yes	Yes	No	- -	**Yes**
Arsenic	0-3 ft	8.20	46	0.178	No	No	Yes	Yes	No
Cadmium	0-3 ft	1.67	0.36	4.64	Yes	No	Yes	Yes	No
Chromium	0-3 ft	510	34	15.0	Yes	Yes	Yes	Yes	**Yes**
Lead	0-3 ft	396	56	7.07	Yes	Yes	Yes	Yes	**Yes**
Mercury	0-3 ft	0.330	0.146	2.26	Yes	No	Yes	Yes	No
Nickel	0-3 ft	234	130	1.80	Yes	No	Yes	Yes	No
Selenium	0-3 ft	0.431	0.63	0.684	No	No	Yes	Yes	No
Silver	0-3 ft	0.207	14	0.0148	No	No	Yes	Yes	No
Zinc	0-3 ft	172	79	2.18	Yes	No	Yes	Yes	No
BUTYLTINS (ug/kg)									
Dibutyltin	0-1 ft	19.0	1,300,000	0.0000146	No	No	No	- -	No
Monobutyltin	0-1 ft	10.4	1,300,000	0.00000800	No	No	No	- -	No
Tributyltin	0-1 ft	422	1,300,000	0.000325	No	No	Yes	No	**Yes-Bio**
Dibutyltin	0-3 ft	14.7	1,300,000	0.0000113	No	No	No	- -	No
Monobutyltin	0-3 ft	8.72	1,300,000	0.00000671	No	No	No	- -	No
Tributyltin	0-3 ft	219	1,300,000	0.000168	No	No	Yes	No	**Yes-Bio**
PESTICIDES (ug/kg)									
4,4'-DDE	0-1 ft	1.33	21	0.0633	No	No	Yes	Yes	No
4,4'-DDT	0-1 ft	21.5	21	1.02	Yes	No	Yes	Yes	No
Total DDTs	0-1 ft	23.1	21	1.10	Yes	No	Yes	Yes	No
Chlordane (alpha)	0-1 ft	1.01	250,000	0.00000404	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-1 ft	18.8	250,000	0.0000752	No	No	Yes	No	**Yes-Bio**
Chlordane (technical)	0-1 ft	1,560	250,000	0.00624	No	No	Yes	No	**Yes-Bio**
Dieldrin	0-1 ft	0.608	4.9	0.124	No	No	Yes	Yes	No
Endosulfan II	0-1 ft	0.844	20,000	0.0000422	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-1 ft	1.08	20,000	0.0000540	No	No	Yes	No	**Yes-Bio**

Table N-44
Identification of CPECs in Soil at All Four AOPCs Combined - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(2 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Endrin	0-1 ft	4.21	4.9	0.859	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-1 ft	3.14	4.9	0.641	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-1 ft	2.61	4.9	0.533	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-1 ft	0.437	15,000	0.0000291	No	No	Yes	No	**Yes-Bio**
4,4'-DDE	0-3 ft	1.18	21	0.0562	No	No	Yes	Yes	No
4,4'-DDT	0-3 ft	19.3	21	0.919	No	No	Yes	Yes	No
Total DDTs	0-3 ft	21.6	21	1.03	Yes	No	Yes	Yes	No
Chlordane (alpha)	0-3 ft	0.952	250,000	0.00000381	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-3 ft	11.8	250,000	0.0000472	No	No	Yes	No	**Yes-Bio**
Chlordane (technical)	0-3 ft	902	250,000	0.00361	No	No	Yes	No	**Yes-Bio**
Endosulfan I	0-3 ft	0.547	20,000	0.0000274	No	No	Yes	No	**Yes-Bio**
Endosulfan II	0-3 ft	0.756	20,000	0.0000378	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-3 ft	1.01	20,000	0.0000505	No	No	Yes	No	**Yes-Bio**
Endrin	0-3 ft	3.21	4.9	0.655	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-3 ft	2.86	4.9	0.584	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-3 ft	2.50	4.9	0.510	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-3 ft	0.477	15,000	0.0000318	No	No	Yes	No	**Yes-Bio**
PCBs (ug/kg)									
Aroclor 1254	0-1 ft	99.4	371	0.268	No	No	Yes	Yes	No
Aroclor 1260	0-1 ft	140	371	0.377	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-1 ft	304	371	0.819	No	No	Yes	Yes	No
Aroclor 1254	0-3 ft	147	371	0.396	No	No	Yes	Yes	No
Aroclor 1260	0-3 ft	123	371	0.332	No	No	Yes	Yes	No
Total PCBs (Aroclors)	0-3 ft	325	371	0.876	No	No	Yes	Yes	No
HERBICIDES (ug/kg)									
2,4,5-T	0-1 ft	67.2	21	3.20	Yes	No	No	- -	No
Dichloroprop	0-1 ft	172	21	8.19	Yes	Yes	No	- -	**Yes**
MCPP	0-1 ft	10,300	21	490	Yes	Yes	No	- -	**Yes**
2,4,5-T	0-3 ft	66.9	21	3.19	Yes	No	No	- -	No
Dichloroprop	0-3 ft	172	21	8.19	Yes	Yes	No	- -	**Yes**
MCPP	0-3 ft	10,200	21	486	Yes	Yes	No	- -	**Yes**
VOCs (ug/kg)									
1,2,4-Trimethylbenzene	0-1 ft	2,940	1,440,000	0.00204	No	No	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-1 ft	1,150	1,440,000	0.000799	No	No	No	- -	No
2-Butanone (MEK)	0-1 ft	13.2	200,000,000	0.0000000660	No	No	No	- -	No
2-Hexanone	0-1 ft	5.17	1,250,000	0.00000414	No	No	No	- -	No
4-Isopropyltoluene	0-1 ft	1.02	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-1 ft	0.566	1,250,000	0.000000453	No	No	No	- -	No

Table N-44
Identification of CPECs in Soil at All Four AOPCs Combined - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(3 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Acetone	0-1 ft	129	1,250,000	0.000103	No	No	No	- -	No
Benzene	0-1 ft	0.470	3,300,000	0.000000142	No	No	No	- -	No
Bromomethane	0-1 ft	1.29	730,000	0.00000177	No	No	No	- -	No
Carbon Disulfide	0-1 ft	1.04	2,000,000	0.000000520	No	No	No	- -	No
Chloroform	0-1 ft	5.06	1,875,000	0.00000270	No	No	No	- -	No
Dichlorodifluoromethane	0-1 ft	5.98	730,000	0.00000819	No	No	No	- -	No
Dichloromethane (Methylene Chloride)	0-1 ft	98.2	730,000	0.000135	No	No	No	- -	No
Ethylbenzene	0-1 ft	562	NA	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	2,040	120,000	0.0170	No	No	No	- -	No
Naphthalene	0-1 ft	1,750	NA	- -	- -	- -	No	- -	Yes - No SLV
o-Xylene	0-1 ft	0.180	120,000	0.00000150	No	No	No	- -	No
Tetrachloroethene (PCE)	0-1 ft	4.96	80,000	0.0000620	No	No	No	- -	No
Toluene	0-1 ft	1.17	1,440,000	0.000000813	No	No	No	- -	No
Trichloroethene (TCE)	0-1 ft	0.0765	40,000	0.00000191	No	No	No	- -	No
1,2,4-Trimethylbenzene	0-3 ft	2,860	1,440,000	0.00199	No	No	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-3 ft	417	1,440,000	0.000290	No	No	No	- -	No
2-Butanone (MEK)	0-3 ft	10.4	200,000,000	0.0000000520	No	No	No	- -	No
4-Isopropyltoluene	0-3 ft	14.7	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-3 ft	0.518	1,250,000	0.000000414	No	No	No	- -	No
Acetone	0-3 ft	90.8	1,250,000	0.0000726	No	No	No	- -	No
Benzene	0-3 ft	0.412	3,300,000	0.000000125	No	No	No	- -	No
Bromomethane	0-3 ft	1.01	730,000	0.00000138	No	No	No	- -	No
Carbon Disulfide	0-3 ft	1.00	2,000,000	0.000000500	No	No	No	- -	No
Dichlorodifluoromethane	0-3 ft	5.04	730,000	0.00000690	No	No	No	- -	No
Dichloromethane (Methylene Chloride)	0-3 ft	40.3	730,000	0.0000552	No	No	No	- -	No
Ethylbenzene	0-3 ft	308	NA	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-3 ft	1,460	120,000	0.0122	No	No	No	- -	No
Naphthalene	0-3 ft	960	NA	- -	- -	- -	No	- -	Yes - No SLV
o-Xylene	0-3 ft	131	120,000	0.00109	No	No	No	- -	No
Tetrachloroethene (PCE)	0-3 ft	44,400	80,000	0.555	No	No	No	- -	No
Toluene	0-3 ft	4,060	1,440,000	0.00282	No	No	No	- -	No
Trichloroethene (TCE)	0-3 ft	833	40,000	0.0208	No	No	No	- -	No
SVOCs (ug/kg)									
Benzoic Acid	0-1 ft	133	1,440,000	0.0000924	No	No	No	--	No
Bis(2-ethylhexyl) Phthalate	0-1 ft	36,400	1,020,000	0.0357	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-1 ft	17.2	30,000,000	0.000000573	No	No	Yes	No	**Yes-Bio**
Carbazole	0-1 ft	272	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-1 ft	77.1	2	38.6	Yes	Yes	Yes	No	**Yes**
Diethyl Phthalate	0-1 ft	16.0	250,000,000	0.0000000640	No	No	No	--	No

Table N-44
Identification of CPECs in Soil at All Four AOPCs Combined - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(4 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Dimethyl Phthalate	0-1 ft	30.9	NA	- -	- -	- -	No	--	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	124	30,000,000	0.00000413	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-1 ft	21.0	30,000,000	0.000000700	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-1 ft	28.6	2,800	0.0102	No	No	Yes	Yes	No
Benzoic Acid	0-3 ft	122	1,440,000	0.0000847	No	No	No	--	No
Bis(2-ethylhexyl) Phthalate	0-3 ft	31,300	1,020,000	0.0307	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-3 ft	15.4	30,000,000	0.000000513	No	No	Yes	No	**Yes-Bio**
Carbazole	0-3 ft	312	NA	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-3 ft	83.4	2	41.7	Yes	Yes	Yes	No	**Yes**
Diethyl Phthalate	0-3 ft	15.6	250,000,000	0.0000000624	No	No	No	--	No
Di-n-butyl Phthalate	0-3 ft	105	30,000,000	0.00000350	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-3 ft	19.4	30,000,000	0.000000647	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-3 ft	24.8	2,800	0.00886	No	No	Yes	Yes	No
Phenol	0-3 ft		NA	- -	- -	- -	No	- -	Yes - No SLV
PAHs (ug/kg)									
2-Methylnaphthalene	0-1 ft	180	NA [6]	0.00180	No	No	Yes	Incl in tLPAH	No
Acenaphthene	0-1 ft	380	NA [6]	0.00380	No	No	Yes	Incl in tLPAH	No
Acenaphthylene	0-1 ft	18.0	NA [6]	0.000180	No	No	Yes	Incl in tLPAH	No
Anthracene	0-1 ft	535	NA [6]	0.0054	No	No	Yes	Incl in tLPAH	No
Fluorene	0-1 ft	139	NA [6]	0.00139	No	No	Yes	Incl in tLPAH	No
Naphthalene	0-1 ft	185	NA [6]	0.00185	No	No	No	--	No
Phenanthrene	0-1 ft	2,200	NA [6]	0.0220	No	No	Yes	Incl in tLPAH	No
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	3,440	100,000	0.0344	No	No	Yes	Yes	No
Benzo(a)anthracene	0-1 ft	4,390	NA [7]	3.99	Yes	No	Yes	Incl in tHPAH	No
Benzo(a)pyrene	0-1 ft	4,570	NA [7]	4.15	Yes	No	Yes	Incl in tHPAH	No
Benzo(b)fluoranthene	0-1 ft	20,700	NA [7]	18.8	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzo(g,h,i)perylene	0-1 ft	2,440	NA [7]	2.22	Yes	No	Yes	Incl in tHPAH	No
Benzo(k)fluoranthene	0-1 ft	19,800	NA [7]	18.0	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzofluoranthenes, Total	0-1 ft	10,700	NA [7]	9.73	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Chrysene	0-1 ft	4,510	NA [7]	4.10	Yes	No	Yes	Incl in tHPAH	No
Dibenz(a,h)anthracene	0-1 ft	1,120	NA [7]	1.02	Yes	No	Yes	Incl in tHPAH	No
Fluoranthene	0-1 ft	8,020	NA [7]	7.29	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Indeno(1,2,3-cd)pyrene	0-1 ft	2,670	NA [7]	2.43	Yes	No	Yes	Incl in tHPAH	No
Pyrene	0-1 ft	7,090	NA [7]	6.45	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	47,078	1,100	42.8	Yes	Yes	Yes	Yes	**Yes**

Table N-44
Identification of CPECs in Soil at All Four AOPCs Combined - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(5 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
2-Methylnaphthalene	0-3 ft	155	NA (6)	0.00155	No	No	Yes	Incl in tLPAH	No
Acenaphthene	0-3 ft	564	NA (6)	0.00564	No	No	Yes	Incl in tLPAH	No
Acenaphthylene	0-3 ft	26.2	NA (6)	0.000262	No	No	Yes	Incl in tLPAH	No
Anthracene	0-3 ft	1,250	NA (6)	0.0125	No	No	Yes	Incl in tLPAH	No
Fluorene	0-3 ft	191	NA (6)	0.00191	No	No	Yes	Incl in tLPAH	No
Naphthalene	0-3 ft	161	NA (6)	0.00161	No	No	No	--	No
Phenanthrene	0-3 ft	3,870	NA (6)	0.0387	No	No	Yes	Incl in tLPAH	No
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	5,089	100,000	0.0509	No	No	Yes	Yes	No
Benzo(a)anthracene	0-3 ft	5,260	NA (7)	4.78	Yes	No	Yes	Incl in tHPAH	No
Benzo(a)pyrene	0-3 ft	7,150	NA (7)	6.50	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzo(b)fluoranthene	0-3 ft	9,750	NA (7)	8.86	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzo(g,h,i)perylene	0-3 ft	3,690	NA (7)	3.35	Yes	No	Yes	Incl in tHPAH	No
Benzo(k)fluoranthene	0-3 ft	11,000	NA (7)	10.0	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Benzofluoranthenes, Total	0-3 ft	17,600	NA (7)	16.0	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Chrysene	0-3 ft	5,790	NA (7)	5.26	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Dibenz(a,h)anthracene	0-3 ft	1,040	NA (7)	0.945	No	No	Yes	Incl in tHPAH	No
Fluoranthene	0-3 ft	11,900	NA (7)	10.8	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Indeno(1,2,3-cd)pyrene	0-3 ft	3,480	NA (7)	3.16	Yes	No	Yes	Incl in tHPAH	No
Pyrene	0-3 ft	10,400	NA (7)	9.45	Yes	Yes	Yes	Incl in tHPAH	**Yes**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	53,046	1,100	48.2	Yes	Yes	Yes	Yes	**Yes**
TPH (mg/kg)									
Diesel Range Organics	0-1 ft	524	NA	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	164	NA	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	2,430	NA	- -	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	473	NA	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	782	NA	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	2,030	NA	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
Incl in tHPAH = COI is included in the Total HPAH Screening
Incl in tLPAH = COI is included in the Total LPAH Screening

Table N-44
Identification of CPECs in Soil at All Four AOPCs Combined - Individual COIs for Mammals
Bradford Island - Upland Operable Unit
(6 of 6)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	Concern for Threatened or Endangered Mammals? (Tij>1)	Concern for Non-threatened or Endangered Mammals? (Tij>5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)

MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Mammalian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Individual COIs in a Given Media
(5) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Lower of 95% UCL and maximum concentration for wildlife species (birds and mammals).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).
(6) The SLV for Total LPAHs was used to screen the individual LPAHs to determine which individuals are driving Total LPAH risk, if any.
(7) The SLV for Total HPAHs was used to screen the individual HPAHs to determine which individuals are driving Total HPAH risk, if any.

Table N-45
Identification of CPECs in Soil at All Four AOPCs Combined - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(1 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
INORGANICS (mg/kg)										
Antimony	0-1 ft	1.80	0.176	10.2	0.0563	Yes	No	No	--	**Yes**
Arsenic	0-1 ft	9.20	43	0.214	0.00118	No	No	Yes	Yes	No
Cadmium	0-1 ft	1.97	0.77	2.56	0.0141	No	No	Yes	Yes	No
Chromium	0-1 ft	567	28.1	20.2	0.111	Yes	No	Yes	Yes	**Yes**
Lead	0-1 ft	398	25.5	15.6	0.0859	Yes	No	Yes	Yes	**Yes**
Mercury	0-1 ft	0.378	0.066	5.73	0.0315	Yes	No	Yes	Yes	**Yes**
Nickel	0-1 ft	227	210	1.08	0.00595	No	No	Yes	Yes	No
Selenium	0-1 ft	0.412	1.2	0.343	0.00189	No	No	Yes	Yes	No
Silver	0-1 ft	0.216	4.2	0.0514	0.000283	No	No	Yes	Yes	No
Zinc	0-1 ft	188	71.7	2.62	0.0144	No	No	Yes	Yes	No
Antimony	0-3 ft	1.64	0.176	9.32	0.0533	Yes	No	No	--	**Yes**
Arsenic	0-3 ft	8.20	43	0.191	0.00109	No	No	Yes	Yes	No
Cadmium	0-3 ft	1.67	0.77	2.17	0.0124	No	No	Yes	Yes	No
Chromium	0-3 ft	510	28.1	18.1	0.104	Yes	No	Yes	Yes	**Yes**
Lead	0-3 ft	396	25.5	15.5	0.0888	Yes	No	Yes	Yes	**Yes**
Mercury	0-3 ft	0.330	0.066	5.00	0.0286	No	No	Yes	Yes	No
Nickel	0-3 ft	234	210	1.11	0.00637	No	No	Yes	Yes	No
Selenium	0-3 ft	0.431	1.2	0.359	0.00205	No	No	Yes	Yes	No
Silver	0-3 ft	0.207	4.2	0.0493	0.000282	No	No	Yes	Yes	No
Zinc	0-3 ft	172	71.7	2.40	0.0137	No	No	Yes	Yes	No
BUTYLTINS (ug/kg)										
Dibutyltin	0-1 ft	19.0	28,000	0.000679	0.00000373	No	No	No	--	No
Monobutyltin	0-1 ft	10.4	28,000	0.000371	0.00000204	No	No	No	--	No
Tributyltin	0-1 ft	422	28,000	0.0151	0.0000830	No	No	Yes	No	**Yes-Bio**
Dibutyltin	0-3 ft	14.7	28,000	0.000525	0.00000300	No	No	No	--	No
Monobutyltin	0-3 ft	8.72	28,000	0.000311	0.00000178	No	No	No	--	No
Tributyltin	0-3 ft	219	28,000	0.00782	0.0000447	No	No	Yes	No	**Yes-Bio**
PESTICIDES (ug/kg)										
4,4'-DDE	0-1 ft	1.33	93	0.0143	0.0000787	No	No	Yes	Yes	No
4,4'-DDT	0-1 ft	21.5	93	0.231	0.00127	No	No	Yes	Yes	No
Total DDTs	0-1 ft	23.1	93	0.248	0.00137	No	No	Yes	Yes	No
Chlordane (alpha)	0-1 ft	1.01	9,000	0.000112	0.000000618	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-1 ft	18.8	9,000	0.00209	0.0000115	No	No	Yes	No	**Yes-Bio**
Chlordane (technical)	0-1 ft	1,560	9,000	0.173	0.000954	No	No	Yes	No	**Yes-Bio**
Dieldrin	0-1 ft	0.608	22	0.0276	0.000152	No	No	Yes	Yes	No
Endosulfan II	0-1 ft	0.844	42,000	0.0000201	0.000000111	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-1 ft	1.08	42,000	0.0000257	0.000000142	No	No	Yes	No	**Yes-Bio**
Endrin	0-1 ft	4.21	22	0.191	0.00105	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-1 ft	3.14	22	0.143	0.000786	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-1 ft	2.61	22	0.119	0.000653	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-1 ft	0.437	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
4,4'-DDE	0-3 ft	1.18	93	0.0127	0.0000725	No	No	Yes	Yes	No

Table N-45
Identification of CPECs in Soil at All Four AOPCs Combined - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(2 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
4,4'-DDT	0-3 ft	19.3	93	0.208	0.00119	No	No	Yes	Yes	No
Total DDTs	0-3 ft	21.6	93	0.232	0.00133	No	No	Yes	Yes	No
Chlordane (alpha)	0-3 ft	0.952	9,000	0.000106	0.000000605	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-3 ft	11.8	9,000	0.00131	0.00000749	No	No	Yes	No	**Yes-Bio**
Chlordane (technical)	0-3 ft	902	9,000	0.100	0.000573	No	No	Yes	No	**Yes-Bio**
Endosulfan I	0-3 ft	0.547	42,000	0.0000130	0.0000000744	No	No	Yes	No	**Yes-Bio**
Endosulfan II	0-3 ft	0.756	42,000	0.0000180	0.000000103	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-3 ft	1.01	42,000	0.0000240	0.000000137	No	No	Yes	No	**Yes-Bio**
Endrin	0-3 ft	3.21	22	0.146	0.000834	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-3 ft	2.86	22	0.130	0.000743	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-3 ft	2.50	22	0.114	0.000650	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-3 ft	0.477	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)										
Aroclor 1254	0-1 ft	99.4	655	0.152	0.000835	No	No	Yes	Yes	No
Aroclor 1260	0-1 ft	140	655	0.214	0.00118	No	No	Yes	Yes	No
Aroclor 1254	0-3 ft	147	655	0.224	0.00128	No	No	Yes	Yes	No
Aroclor 1260	0-3 ft	123	655	0.188	0.00107	No	No	Yes	Yes	No
HERBICIDES (ug/kg)										
2,4,5-T	0-1 ft	67.2	93	0.723	0.00398	No	No	No	- -	No
Dichloroprop	0-1 ft	172	93	1.85	0.0102	No	No	No	- -	No
MCPP	0-1 ft	10,300	93	111	0.610	Yes	Yes	No	- -	**Yes**
2,4,5-T	0-3 ft	66.9	93	0.719	0.00411	No	No	No	- -	No
Dichloroprop	0-3 ft	172	93	1.85	0.0106	No	No	No	- -	No
MCPP	0-3 ft	10,200	93	110	0.627	Yes	Yes	No	- -	**Yes**
VOCs (ug/kg)										
1,2,4-Trimethylbenzene	0-1 ft	2,940	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
1,3,5-Trimethylbenzene	0-1 ft	1,150	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
2-Butanone (MEK)	0-1 ft	13.2	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
2-Hexanone	0-1 ft	5.17	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
4-Isopropyltoluene	0-1 ft	1.02	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-1 ft	0.566	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Acetone	0-1 ft	129	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Benzene	0-1 ft	0.470	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Bromomethane	0-1 ft	1.29	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Carbon Disulfide	0-1 ft	1.04	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Chloroform	0-1 ft	5.06	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Dichlorodifluoromethane	0-1 ft	5.98	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-1 ft	98.2	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Ethylbenzene	0-1 ft	562	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	2,040	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Naphthalene	0-1 ft	1,750	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
o-Xylene	0-1 ft	0.180	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-1 ft	4.96	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Toluene	0-1 ft	1.17	NA	- -	- -	- -	- -	No	- -	Yes - No SLV

Table N-45
Identification of CPECs in Soil at All Four AOPCs Combined - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(3 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Trichloroethene (TCE)	0-1 ft	0.0765	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
1,2,4-Trimethylbenzene	0-3 ft	2,860	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
1,3,5-Trimethylbenzene	0-3 ft	417	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
2-Butanone (MEK)	0-3 ft	10.4	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
4-Isopropyltoluene	0-3 ft	14.7	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-3 ft	0.518	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Acetone	0-3 ft	90.8	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Benzene	0-3 ft	0.412	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Bromomethane	0-3 ft	1.01	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Carbon Disulfide	0-3 ft	1.00	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Dichlorodifluoromethane	0-3 ft	5.04	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Dichloromethane (Methylene Chloride)	0-3 ft	40.3	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Ethylbenzene	0-3 ft	308	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-3 ft	1,460	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Naphthalene	0-3 ft	960	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
o-Xylene	0-3 ft	131	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Tetrachloroethene (PCE)	0-3 ft	44,400	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Toluene	0-3 ft	4,060	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Trichloroethene (TCE)	0-3 ft	833	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
SVOCs (ug/kg)										
Benzoic Acid	0-1 ft	133	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-1 ft	36,400	4,500	8.09	0.0445	Yes	No	Yes	No	**Yes**
Butyl Benzyl Phthalate	0-1 ft	17.2	450	0.0382	0.000210	No	No	Yes	No	**Yes-Bio**
Carbazole	0-1 ft	272	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-1 ft	77.1	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Diethyl Phthalate	0-1 ft	16.0	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Dimethyl Phthalate	0-1 ft	30.9	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	124	450	0.276	0.00152	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-1 ft	21.0	450	0.0467	0.000257	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-1 ft	28.6	2,100	0.0136	0.0000750	No	No	Yes	Yes	No
Benzoic Acid	0-3 ft	122	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Bis(2-ethylhexyl) Phthalate	0-3 ft	31,300	4,500	6.96	0.0398	Yes	No	Yes	No	**Yes**
Butyl Benzyl Phthalate	0-3 ft	15.4	450	0.0342	0.000196	No	No	Yes	No	**Yes-Bio**
Carbazole	0-3 ft	312	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-3 ft	83.4	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Diethyl Phthalate	0-3 ft	15.6	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Di-n-butyl Phthalate	0-3 ft	105	450	0.233	0.00133	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-3 ft	19.4	450	0.0431	0.000246	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-3 ft	24.8	2,100	0.0118	0.0000675	No	No	Yes	Yes	No
Phenol	0-3 ft		NA	- -	- -	- -	- -	No	- -	Yes - No SLV
PAHs (ug/kg)										
2-Methylnaphthalene	0-1 ft	180	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthene	0-1 ft	380	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthylene	0-1 ft	18.0	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**

Table N-45
Identification of CPECs in Soil at All Four AOPCs Combined - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(4 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)
Anthracene	0-1 ft	535	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluorene	0-1 ft	139	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Naphthalene	0-1 ft	185	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Phenanthrene	0-1 ft	2,200	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	3,440	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)anthracene	0-1 ft	4,390	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)pyrene	0-1 ft	4,570	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(b)fluoranthene	0-1 ft	20,700	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(g,h,i)perylene	0-1 ft	2,440	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(k)fluoranthene	0-1 ft	19,800	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzofluoranthenes, Total	0-1 ft	10,700	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Chrysene	0-1 ft	4,510	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenz(a,h)anthracene	0-1 ft	1,120	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluoranthene	0-1 ft	8,020	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	0-1 ft	2,670	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Pyrene	0-1 ft	7,090	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	47,078	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
2-Methylnaphthalene	0-3 ft	155	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthene	0-3 ft	564	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Acenaphthylene	0-3 ft	26.2	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Anthracene	0-3 ft	1,250	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluorene	0-3 ft	191	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Naphthalene	0-3 ft	161	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
Phenanthrene	0-3 ft	3,870	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	5,089	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)anthracene	0-3 ft	5,260	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(a)pyrene	0-3 ft	7,150	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(b)fluoranthene	0-3 ft	9,750	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(g,h,i)perylene	0-3 ft	3,690	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzo(k)fluoranthene	0-3 ft	11,000	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Benzofluoranthenes, Total	0-3 ft	17,600	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Chrysene	0-3 ft	5,790	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenz(a,h)anthracene	0-3 ft	1,040	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Fluoranthene	0-3 ft	11,900	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Indeno(1,2,3-cd)pyrene	0-3 ft	3,480	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Pyrene	0-3 ft	10,400	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	53,046	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
TPH (mg/kg)										
Diesel Range Organics	0-1 ft	524	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	164	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	2,430	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	473	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	782	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	2,030	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV

Table N-45
Identification of CPECs in Soil at All Four AOPCs Combined - Multiple COIs for Birds
Bradford Island - Upland Operable Unit
(5 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Birds Exposed to Soil (2,3,4)	Toxicity Ratio for Birds (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Birds? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 1)

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.

Hierarchy of Avian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 33
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 182
0-3 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 33
Tj (0-3 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 175
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-46
Identification of CPECs in Soil at All Four AOPCs Combined - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(1 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
INORGANICS (mg/kg)										
Antimony	0-1 ft	1.80	0.27	6.67	0.0106	No	No	No	- -	No
Arsenic	0-1 ft	9.20	46	0.200	0.000317	No	No	Yes	Yes	No
Cadmium	0-1 ft	1.97	0.36	5.47	0.00868	No	No	Yes	Yes	No
Chromium	0-1 ft	567	34	16.7	0.0264	Yes	No	Yes	Yes	No
Lead	0-1 ft	398	56	7.11	0.0113	No	No	Yes	Yes	No
Mercury	0-1 ft	0.378	0.146	2.59	0.00410	No	No	Yes	Yes	No
Nickel	0-1 ft	227	130	1.75	0.00277	No	No	Yes	Yes	No
Selenium	0-1 ft	0.412	0.63	0.654	0.00104	No	No	Yes	Yes	No
Silver	0-1 ft	0.216	14	0.0154	0.0000245	No	No	Yes	Yes	No
Zinc	0-1 ft	188	79	2.38	0.00377	No	No	Yes	Yes	No
Antimony	0-3 ft	1.64	0.27	6.07	0.00962	No	No	No	- -	No
Arsenic	0-3 ft	8.20	46	0.178	0.000282	No	No	Yes	Yes	No
Cadmium	0-3 ft	1.67	0.36	4.64	0.00735	No	No	Yes	Yes	No
Chromium	0-3 ft	510	34	15.0	0.0238	Yes	No	Yes	Yes	No
Lead	0-3 ft	396	56	7.07	0.0112	No	No	Yes	Yes	No
Mercury	0-3 ft	0.330	0.146	2.26	0.00358	No	No	Yes	Yes	No
Nickel	0-3 ft	234	130	1.80	0.00285	No	No	Yes	Yes	No
Selenium	0-3 ft	0.431	0.63	0.684	0.00108	No	No	Yes	Yes	No
Silver	0-3 ft	0.207	14	0.0148	0.0000234	No	No	Yes	Yes	No
Zinc	0-3 ft	172	79	2.18	0.00345	No	No	Yes	Yes	No
BUTYLTINS (ug/kg)										
Dibutyltin	0-1 ft	19.0	1,300,000	0.0000146	0.0000000232	No	No	No	- -	No
Monobutyltin	0-1 ft	10.4	1,300,000	0.00000800	0.0000000127	No	No	No	- -	No
Tributyltin	0-1 ft	422	1,300,000	0.000325	0.000000515	No	No	Yes	No	**Yes-Bio**
Dibutyltin	0-3 ft	14.7	1,300,000	0.0000113	0.0000000179	No	No	No	- -	No
Monobutyltin	0-3 ft	8.72	1,300,000	0.00000671	0.0000000106	No	No	No	- -	No
Tributyltin	0-3 ft	219	1,300,000	0.000168	0.000000267	No	No	Yes	No	**Yes-Bio**
PESTICIDES (ug/kg)										
4,4'-DDE	0-1 ft	1.33	21	0.0633	0.000100	No	No	Yes	Yes	No
4,4'-DDT	0-1 ft	21.5	21	1.02	0.00162	No	No	Yes	Yes	No
Total DDTs	0-1 ft	23.1	21	1.10	0.00174	No	No	Yes	Yes	No
Chlordane (alpha)	0-1 ft	1.01	250,000	0.00000404	0.00000000641	No	No	Yes	No	**Yes-Bio**
Chlordane (gamma)	0-1 ft	18.8	250,000	0.0000752	0.000000119	No	No	Yes	No	**Yes-Bio**
Chlordane (technical)	0-1 ft	1,560	250,000	0.00624	0.00000989	No	No	Yes	No	**Yes-Bio**
Dieldrin	0-1 ft	0.608	4.9	0.124	0.000197	No	No	Yes	Yes	No
Endosulfan II	0-1 ft	0.844	20,000	0.0000422	0.0000000669	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-1 ft	1.08	20,000	0.0000540	0.0000000856	No	No	Yes	No	**Yes-Bio**
Endrin	0-1 ft	4.21	4.9	0.859	0.00136	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-1 ft	3.14	4.9	0.641	0.00102	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-1 ft	2.61	4.9	0.533	0.000845	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-1 ft	0.437	15,000	0.0000291	0.0000000462	No	No	Yes	No	**Yes-Bio**
4,4'-DDE	0-3 ft	1.18	21	0.0562	0.0000890	No	No	Yes	Yes	No
4,4'-DDT	0-3 ft	19.3	21	0.919	0.00146	No	No	Yes	Yes	No
Total DDTs	0-3 ft	21.6	21	1.03	0.00163	No	No	Yes	Yes	No
Chlordane (alpha)	0-3 ft	0.952	250,000	0.00000381	0.00000000603	No	No	Yes	No	**Yes-Bio**

Table N-46
Identification of CPECs in Soil at All Four AOPCs Combined - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(2 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Chlordane (gamma)	0-3 ft	11.8	250,000	0.0000472	0.0000000748	No	No	Yes	No	**Yes-Bio**
Chlordane (technical)	0-3 ft	902	250,000	0.00361	0.00000572	No	No	Yes	No	**Yes-Bio**
Endosulfan I	0-3 ft	0.547	20,000	0.0000274	0.0000000433	No	No	Yes	No	**Yes-Bio**
Endosulfan II	0-3 ft	0.756	20,000	0.0000378	0.0000000599	No	No	Yes	No	**Yes-Bio**
Endosulfan Sulfate	0-3 ft	1.01	20,000	0.0000505	0.0000000800	No	No	Yes	No	**Yes-Bio**
Endrin	0-3 ft	3.21	4.9	0.655	0.00104	No	No	Yes	No	**Yes-Bio**
Endrin Aldehyde	0-3 ft	2.86	4.9	0.584	0.000925	No	No	Yes	No	**Yes-Bio**
Endrin Ketone	0-3 ft	2.50	4.9	0.510	0.000808	No	No	Yes	No	**Yes-Bio**
Heptachlor	0-3 ft	0.477	15,000	0.0000318	0.0000000504	No	No	Yes	No	**Yes-Bio**
PCBs (ug/kg)										
Aroclor 1254	0-1 ft	99.4	371	0.268	0.000425	No	No	Yes	Yes	No
Aroclor 1260	0-1 ft	140	371	0.377	0.000598	No	No	Yes	Yes	No
Aroclor 1254	0-3 ft	147	371	0.396	0.000628	No	No	Yes	Yes	No
Aroclor 1260	0-3 ft	123	371	0.332	0.000525	No	No	Yes	Yes	No
HERBICIDES (ug/kg)										
2,4,5-T	0-1 ft	67.2	21	3.20	0.00507	No	No	No	- -	No
Dichloroprop	0-1 ft	172	21	8.19	0.0130	No	No	No	- -	No
MCPP	0-1 ft	10,300	21	490	0.778	Yes	Yes	No	- -	**Yes**
2,4,5-T	0-3 ft	66.9	21	3.19	0.00505	No	No	No	- -	No
Dichloroprop	0-3 ft	172	21	8.19	0.0130	No	No	No	- -	No
MCPP	0-3 ft	10,200	21	486	0.770	Yes	Yes	No	- -	**Yes**
VOCs (ug/kg)										
1,2,4-Trimethylbenzene	0-1 ft	2,940	1,440,000	0.00204	0.00000324	No	No	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-1 ft	1,150	1,440,000	0.000799	0.00000127	No	No	No	- -	No
2-Butanone (MEK)	0-1 ft	13.2	200,000,000	0.0000000660	0.000000000105	No	No	No	- -	No
2-Hexanone	0-1 ft	5.17	1,250,000	0.00000414	0.00000000656	No	No	No	- -	No
4-Isopropyltoluene	0-1 ft	1.02	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-1 ft	0.566	1,250,000	0.000000453	0.000000000718	No	No	No	- -	No
Acetone	0-1 ft	129	1,250,000	0.000103	0.000000164	No	No	No	- -	No
Benzene	0-1 ft	0.470	3,300,000	0.000000142	0.000000000226	No	No	No	- -	No
Bromomethane	0-1 ft	1.29	730,000	0.00000177	0.00000000280	No	No	No	- -	No
Carbon Disulfide	0-1 ft	1.04	2,000,000	0.000000520	0.000000000824	No	No	No	- -	No
Chloroform	0-1 ft	5.06	1,875,000	0.00000270	0.00000000428	No	No	No	- -	No
Dichlorodifluoromethane	0-1 ft	5.98	730,000	0.00000819	0.0000000130	No	No	No	- -	No
Dichloromethane (Methylene Chloride)	0-1 ft	98.2	730,000	0.000135	0.000000213	No	No	No	- -	No
Ethylbenzene	0-1 ft	562	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-1 ft	2,040	120,000	0.0170	0.0000270	No	No	No	- -	No
Naphthalene	0-1 ft	1,750	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
o-Xylene	0-1 ft	0.180	120,000	0.00000150	0.00000000238	No	No	No	- -	No
Tetrachloroethene (PCE)	0-1 ft	4.96	80,000	0.0000620	0.0000000983	No	No	No	- -	No
Toluene	0-1 ft	1.17	1,440,000	0.000000813	0.00000000129	No	No	No	- -	No
Trichloroethene (TCE)	0-1 ft	0.0765	40,000	0.00000191	0.00000000303	No	No	No	- -	No
1,2,4-Trimethylbenzene	0-3 ft	2,860	1,440,000	0.00199	0.00000315	No	No	Yes	No	**Yes-Bio**
1,3,5-Trimethylbenzene	0-3 ft	417	1,440,000	0.000290	0.000000459	No	No	No	- -	No
2-Butanone (MEK)	0-3 ft	10.4	200,000,000	0.0000000520	0.0000000000824	No	No	No	- -	No
4-Isopropyltoluene	0-3 ft	14.7	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
4-Methyl-2-pentanone (MIBK)	0-3 ft	0.518	1,250,000	0.000000414	0.000000000657	No	No	No	- -	No

Table N-46
Identification of CPECs in Soil at All Four AOPCs Combined - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(3 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Acetone	0-3 ft	90.8	1,250,000	0.0000726	0.000000115	No	No	No	- -	No
Benzene	0-3 ft	0.412	3,300,000	0.000000125	0.000000000198	No	No	No	- -	No
Bromomethane	0-3 ft	1.01	730,000	0.00000138	0.00000000219	No	No	No	- -	No
Carbon Disulfide	0-3 ft	1.00	2,000,000	0.000000500	0.000000000792	No	No	No	- -	No
Dichlorodifluoromethane	0-3 ft	5.04	730,000	0.00000690	0.0000000109	No	No	No	- -	No
Dichloromethane (Methylene Chloride)	0-3 ft	40.3	730,000	0.0000552	0.0000000875	No	No	No	- -	No
Ethylbenzene	0-3 ft	308	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
m,p-Xylenes	0-3 ft	1,460	120,000	0.0122	0.0000193	No	No	No	- -	No
Naphthalene	0-3 ft	960	NA	- -	- -	- -	- -	No	- -	Yes - No SLV
o-Xylene	0-3 ft	131	120,000	0.00109	0.00000173	No	No	No	- -	No
Tetrachloroethene (PCE)	0-3 ft	44,400	80,000	0.555	0.000879	No	No	No	- -	No
Toluene	0-3 ft	4,060	1,440,000	0.00282	0.00000447	No	No	No	- -	No
Trichloroethene (TCE)	0-3 ft	833	40,000	0.0208	0.0000330	No	No	No	- -	No
SVOCs (ug/kg)										
Benzoic Acid	0-1 ft	133	1,440,000	0.0000924	0.000000146	No	No	No	--	No
Bis(2-ethylhexyl) Phthalate	0-1 ft	36,400	1,020,000	0.0357	0.0000566	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-1 ft	17.2	30,000,000	0.000000573	0.000000000909	No	No	Yes	No	**Yes-Bio**
Carbazole	0-1 ft	272	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-1 ft	77.1	2	38.6	0.0611	Yes	No	Yes	No	No
Diethyl Phthalate	0-1 ft	16.0	250,000,000	0.0000000640	0.000000000101	No	No	No	--	No
Dimethyl Phthalate	0-1 ft	30.9	NA	- -	- -	- -	- -	No	--	Yes - No SLV
Di-n-butyl Phthalate	0-1 ft	124	30,000,000	0.00000413	0.00000000655	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-1 ft	21.0	30,000,000	0.000000700	0.00000000111	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-1 ft	28.6	2,800	0.0102	0.0000162	No	No	Yes	Yes	No
Benzoic Acid	0-3 ft	122	1,440,000	0.0000847	0.000000134	No	No	No	--	No
Bis(2-ethylhexyl) Phthalate	0-3 ft	31,300	1,020,000	0.0307	0.0000486	No	No	Yes	No	**Yes-Bio**
Butyl Benzyl Phthalate	0-3 ft	15.4	30,000,000	0.000000513	0.000000000813	No	No	Yes	No	**Yes-Bio**
Carbazole	0-3 ft	312	NA	- -	- -	- -	- -	Yes	No SLV	**Yes-Bio**
Dibenzofuran	0-3 ft	83.4	2	41.7	0.0661	Yes	No	Yes	No	No
Diethyl Phthalate	0-3 ft	15.6	250,000,000	0.0000000624	0.0000000000989	No	No	No	--	No
Di-n-butyl Phthalate	0-3 ft	105	30,000,000	0.00000350	0.00000000555	No	No	Yes	No	**Yes-Bio**
Di-n-octyl Phthalate	0-3 ft	19.4	30,000,000	0.000000647	0.00000000102	No	No	Yes	No	**Yes-Bio**
Pentachlorophenol	0-3 ft	24.8	2,800	0.00886	0.0000140	No	No	Yes	Yes	No
Phenol	0-3 ft		NA	- -	- -	- -	- -	No	- -	Yes - No SLV
PAHs (ug/kg)										
2-Methylnaphthalene	0-1 ft	180	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Acenaphthene	0-1 ft	380	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Acenaphthylene	0-1 ft	18.0	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Anthracene	0-1 ft	535	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Fluorene	0-1 ft	139	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Naphthalene	0-1 ft	185	NA	- -	- -	- -	- -	No	--	No
Phenanthrene	0-1 ft	2,200	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	3,440	100,000	0.0344	0.0000545	No	No	Yes	Yes	No
Benzo(a)anthracene	0-1 ft	4,390	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(a)pyrene	0-1 ft	4,570	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(b)fluoranthene	0-1 ft	20,700	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(g,h,i)perylene	0-1 ft	2,440	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No

Table N-46
Identification of CPECs in Soil at All Four AOPCs Combined - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(4 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)
Benzo(k)fluoranthene	0-1 ft	19,800	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzofluoranthenes, Total	0-1 ft	10,700	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Chrysene	0-1 ft	4,510	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Dibenz(a,h)anthracene	0-1 ft	1,120	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Fluoranthene	0-1 ft	8,020	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Indeno(1,2,3-cd)pyrene	0-1 ft	2,670	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Pyrene	0-1 ft	7,090	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	47,078	1,100	42.8	0.0679	Yes	No	Yes	Yes	No
2-Methylnaphthalene	0-3 ft	155	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Acenaphthene	0-3 ft	564	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Acenaphthylene	0-3 ft	26.2	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Anthracene	0-3 ft	1,250	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Fluorene	0-3 ft	191	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Naphthalene	0-3 ft	161	NA	- -	- -	- -	- -	No	--	No
Phenanthrene	0-3 ft	3,870	NA	- -	- -	- -	- -	Yes	Incl in tLPAH	No
Total LPAHs (KM, capped; NDs at MDL)	0-3 ft	5,089	100,000	0.0509	0.0000806	No	No	Yes	Yes	No
Benzo(a)anthracene	0-3 ft	5,260	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(a)pyrene	0-3 ft	7,150	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(b)fluoranthene	0-3 ft	9,750	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(g,h,i)perylene	0-3 ft	3,690	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzo(k)fluoranthene	0-3 ft	11,000	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Benzofluoranthenes, Total	0-3 ft	17,600	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Chrysene	0-3 ft	5,790	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Dibenz(a,h)anthracene	0-3 ft	1,040	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Fluoranthene	0-3 ft	11,900	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Indeno(1,2,3-cd)pyrene	0-3 ft	3,480	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Pyrene	0-3 ft	10,400	NA	- -	- -	- -	- -	Yes	Incl in tHPAH	No
Total HPAHs (KM, capped; NDs at MDL)	0-3 ft	53,046	1,100	48.2	0.0764	Yes	No	Yes	Yes	No
TPH (mg/kg)										
Diesel Range Organics	0-1 ft	524	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-1 ft	164	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-1 ft	2,430	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Diesel Range Organics	0-3 ft	473	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Gasoline Range Organics	0-3 ft	782	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV
Residual Range Organics	0-3 ft	2,030	NA	- -	- -	- -	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
Incl in tHPAH = COI is included in the Total HPAH Screening
Incl in tLPAH = COI is included in the Total LPAH Screening
MDL = method detection limit
NA = not available
ND = non detect

Table N-46
Identification of CPECs in Soil at All Four AOPCs Combined - Multiple COIs for Mammals
Bradford Island - Upland Operable Unit
(5 of 5)

Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Level II SLVs for Mammals Exposed to Soil (2,3,4)	Toxicity Ratio for Mammals (Tij)	(Tij/Tj) (5)	Chemical is a Concern for Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 1)	Chemical is a Concern for Non-Threatened or Endangered Mammals? (Tij/Tj >= [1/Nij] x Q when Q = 5)	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a CPEC? (5) (Q = 5)

SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).

Hierarchy of Mammalian SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.
(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

Multiple COIs Simultaneously within a Given Medium
(5) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
0-1 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 56
Tj (0-1 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 631
0-3 ft bgs Soil Interval
Nij = total number of *i* contaminants in medium *j* = 54
Tj (0-3 ft bgs) = sum of toxicity ratios for all contaminants in medium *j* = 631
Assumptions: Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table N-47
Identification of CPECs in Forebay Sediment - Individual COIs for Benthic Invertebrates
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	IUPAC #	Max Detected Conc	Level II SLVs for Benthics Exposed to Sediment (1)	Toxicity Ratio for Benthics (Tij)	Chemical is a Concern for Benthic Community? (Tij>1)	COI is Identified as a CPEC? (2) (Q =1)
PCB Aroclors (ug/kg)						
Aroclor 1254	-	27.0	7.00	3.86	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	-	28.7	34.0	0.844	No	No
PCB Congeners (ug/kg)						
3,3',4,4'-Tetrachlorobiphenyl	77	0.00709	34.0	0.000209	No	No
2,3,3',4,4'-Pentachlorobiphenyl	105	1.08	34.0	0.0318	No	No
2,3,4,4',5-Pentachlorobiphenyl	114	0.0603	34.0	0.00177	No	No
2,3',4,4',5-Pentachlorobiphenyl	118	2.65	34.0	0.0779	No	No
2,3',4,4',5'-Pentachlorobiphenyl	123	0.0363	34.0	0.00107	No	No
3,3',4,4',5-Pentachlorobiphenyl	126	0.000238	34.0	0.00000700	No	No
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.380	34.0	0.0112	No	No
2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.113	34.0	0.00332	No	No
2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.00901	34.0	0.000265	No	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	29.7	34.0	0.875	No	No
SVOCs (ug/kg)						
Bis(2-ethylhexyl) Phthalate	-	340	750	0.453	No	No
Carbazole	-	1.40	140	0.0100	No	No
p-cresol (4-Methylphenol)	-	21.0	48	0.438	No	No
PAHs (ug/kg)						
Anthracene	-	2.70	57	0.0474	No	No
Phenanthrene	-	7.40	42	0.176	No	No
Total LPAHs (KM, capped; NDs at MDL)	-	12.0	76	0.158	No	No
Benzo(a)anthracene	-	12.0	32	0.375	No	No
Benzo(a)pyrene	-	7.50	32	0.234	No	No
Benzo(b)fluoranthene	-	9.10	27	0.337	No	No
Benzo(g,h,i)perylene	-	6.20	300	0.0207	No	No
Benzo(k)fluoranthene	-	4.90	27	0.181	No	No
Chrysene	-	20.0	57	0.351	No	No
Fluoranthene	-	12.0	111	0.108	No	No
Indeno(1,2,3-cd)pyrene	-	5.70	17	0.335	No	No
Pyrene	-	17.0	53	0.321	No	No
Total HPAHs (KM, capped; NDs at MDL)	-	73.9	193	0.383	No	No

Table N-47
Identification of CPECs in Forebay Sediment - Individual COIs for Benthic Invertebrates
Bradford Island - River Operable Unit
(2 of 2)

Chemicals of Interest	IUPAC #	Max Detected Conc	Level II SLVs for Benthics Exposed to Sediment (1)	Toxicity Ratio for Benthics (Tij)	Chemical is a Concern for Benthic Community? (Tij>1)	COI is Identified as a CPEC? (2) (Q =1)
Total PAHs (KM, capped; NDs at MDL)	-	83.4	1610	0.0518	No	No
TPH (mg/kg)						
Diesel Range Organics	-	54	NA	- -	- -	Yes - No SLV
Residual Range Organics	-	180	NA	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

(1) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the DEQ Level II SLV (see Appendix J-5c):
Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

Individual COIs in a Given Media
(2) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-48
Identification of CPECs in Forebay Sediment - Multiple COIs for Benthic Invertebrates
Bradford Island - River Operable Unit
(1 of 2)

Chemical of Interest	IUPAC #	Max Detected Conc	Level II SLVs for Benthics Exposed to Sediment (1)	Toxicity Ratio for Benthics (Tij)	(Tij/Tj) (2)	Chemical is a Concern for Benthic Community? (Tij/Tj >= [1/Nij] x Q when Q = 1)	COI is Identified as a CPEC? (2) (Q = 1)
PCB Aroclors (ug/kg)							
Aroclor 1254	-	27.0	7.00	3.86	0.475	Yes	**Yes**
PCB Congeners (ug/kg)							
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	29.7	34.0	0.875	0.108	Yes	**Yes**
SVOCs (ug/kg)							
Bis(2-ethylhexyl) Phthalate	-	340	750	0.453	0.0558	No	No
Carbazole	-	1.40	140	0.0100	0.00123	No	No
p-cresol (4-Methylphenol)	-	21.0	48	0.438	0.0539	No	No
PAHs (ug/kg)							
Anthracene	-	2.70	57	0.0474	0.00583	No	No
Phenanthrene	-	7.40	42	0.176	0.0217	No	No
Benzo(a)anthracene	-	12.0	32	0.375	0.0462	No	No
Benzo(a)pyrene	-	7.50	32	0.234	0.0289	No	No
Benzo(b)fluoranthene	-	9.10	27	0.337	0.0415	No	No
Benzo(g,h,i)perylene	-	6.20	300	0.0207	0.00255	No	No
Benzo(k)fluoranthene	-	4.90	27	0.181	0.0224	No	No
Chrysene	-	20.0	57	0.351	0.0432	No	No
Fluoranthene	-	12.0	111	0.108	0.0133	No	No
Indeno(1,2,3-cd)pyrene	-	5.70	17	0.335	0.0413	No	No
Pyrene	-	17.0	53	0.321	0.0395	No	No
TPH (mg/kg)							
Diesel Range Organics	-	54	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	-	180	NA	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest

Table N-48
Identification of CPECs in Forebay Sediment - Multiple COIs for Benthic Invertebrates
Bradford Island - River Operable Unit
(2 of 2)

Chemical of Interest	IUPAC #	Max Detected Conc	Level II SLVs for Benthics Exposed to Sediment (1)	Toxicity Ratio for Benthics (Tij)	(Tij/Tj) (2)	Chemical is a Concern for Benthic Community? (Tij/Tj >= [1/Nij] x Q when Q = 1)	COI is Identified as a CPEC? (2) (Q = 1)

KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

(1) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the DEQ Level II SLV (see Appendix J-5c):
Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

Multiple COIs Simultaneously within a Given Medium
(2) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
Nij = total number of *i* contaminants in medium *j* = 16
Tj = sum of toxicity ratios for all contaminants in medium *j* = 8.12
* Conservatively including both Aroclor 1254 and Total PCBs as Congeners
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-49
Identification of CPECs in Forebay Surface Water - Individual COIs for Aquatic Organisms
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	IUPAC #	Phase	Max Detected Conc (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	Chemical is a Concern for Aquatic Organisms (Tij>1)?	COI is Identified as a CPEC? (9) (Q = 1)
INORGANICS (ug/L)							
Arsenic	-	D	0.940	150	0.00627	No	No
Barium	-	D	24.0	4.00	6.00	Yes	**Yes**
Beryllium	-	D	0.00400	5.30	0.000755	No	No
Cadmium	-	D	0.0100	0.17	0.0580	No	No
Copper	-	D	0.520	5.8	0.0898	No	No
Lead	-	D	0.0360	1.44	0.0251	No	No
Thallium	-	D	0.0310	40.0	0.000775	No	No
Zinc	-	D	7.50	77	0.0979	No	No
PCB Congeners (pg/L)							
3,3',4,4'-Tetrachlorobiphenyl	77	C+F	0.133	14,000	0.00000950	No	No
2,3,3',4,4'-Pentachlorobiphenyl	105	C+F	0.540	14,000	0.0000386	No	No
2,3',4,4',5-Pentachlorobiphenyl	118	C+F	1.57	14,000	0.000112	No	No
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	C+F	0.382	14,000	0.0000273	No	No
2,3',4,4',5,5'-Hexachlorobiphenyl	167	C+F	0.158	14,000	0.0000113	No	No
2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	C+F	0.0662	14,000	0.00000473	No	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	C+F	209	14,000	0.0149	No	No
PCBs As Mammals TEQ (KM, capped; NDs at MDL) (10)	-	C+F	0.000056	7,600	0.00000000736	No	No
PAHs (ng/L)							
Acenaphthene	-	C+F	1.28	55,850	0.00002290	No	No
Anthracene	-	C+F	0.121	13,000	0.00000932	No	No
Phenanthrene	-	C+F	1.61	6,300	0.000255	No	No
Benzo(a)anthracene	-	C+F	0.0600	27.0	0.00222	No	No
Benzo(b)fluoranthene	-	C+F	0.0917	677.4	0.000135	No	No
Chrysene	-	C+F	0.171	2,042	0.0000839	No	No
Fluoranthene	-	C+F	0.784	6,160	0.0001273	No	No
TPH (ug/L)							
Diesel Range Organics	-	D	46.0	NA	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
C+F = column and filter
CPEC = chemical of potential ecological concern
COI = chemical of interest
D = Dissolved
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit

Table N-49
Identification of CPECs in Forebay Surface Water - Individual COIs for Aquatic Organisms
Bradford Island - River Operable Unit
(2 of 2)

Chemicals of Interest	IUPAC #	Phase	Max Detected Conc (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	Chemical is a Concern for Aquatic Organisms (Tij>1)?	COI is Identified as a CPEC? (9) (Q = 1)

NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
TEQ = Toxicity Equivalence Quotient
UCL = upper confidence limit on the mean
- - = not applicable

(1) The maximum detected concentration was used because there are less than 8 surface water samples.

Hierarchy of Aquatic Organisms SLV Selection (see Appendix J-5b)

(2) USEPA 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.
(3) Oregon Department of Environmental Quality (DEQ). Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Table 33A).
(4) DEQ 1998. Updated 2001. Guidance for Ecological risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.
(5) Suter GW II, and CL Tsao. 1996. Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on Oak Ridge Reservation: 1996 Revision. ORNL, Oak Ridge, TN. 104pp. ES/ER/TM-96/R2.
(6) USEPA 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. November. EPA-600-R-02-013.
(7) Canadian Council of Resource and Environment Ministers. 2007. Canadian Water Quality Guidelines for the Protection of Aquatic Life. December Accessed on 1/20/10 at http://ceqg-rcqe.ccme.ca/.
(8) Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34 pages.

Individual COIs in a Given Media

(9) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLV ij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Lower of Maximum detected concentration and 95% UCL (for aquatic receptors).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
(10) The lowest surface water SLV for 2,3,7,8-TCDD is protective of mammals (DEQ's 2001 SLV for surface water, as cited in Appendix J, Table J-5). Therefore, the mammalian TEQ for dioxin-like PCBs in Forebay surface water is used appropriately for comparison to the lowest surface water SLV.

Table N-50
Identification of CPECs in Forebay Surface Water - Multiple COIs for Aquatic Organisms
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	IUPAC #	Phase	Max Detected Conc (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	(Tij/Tj) (9)	Chemical is a Concern for Aquatic Organisms? (Tij/Tj >= [1/Nij] x Q when Q = 1)	COI is Identified as a CPEC? (9) (Q = 1)
INORGANICS (ug/L)								
Arsenic	-	D	0.940	150	0.00627	0.00100	No	No
Barium	-	D	24.0	4.00	6.00	0.953	Yes	**Yes**
Beryllium	-	D	0.00400	5.30	0.000755	0.000120	No	No
Cadmium	-	D	0.0100	0.17	0.0580	0.00921	No	No
Copper	-	D	0.520	5.8	0.0898	0.0143	No	No
Lead	-	D	0.0360	1.44	0.0251	0.00398	No	No
Thallium	-	D	0.0310	40.0	0.000775	0.000123	No	No
Zinc	-	D	7.50	77	0.0979	0.0155	No	No
PCB Congeners (pg/L)								
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	C+F	209	14,000	0.0149	0.00237	No	No
PCBs As Mammals TEQ (KM, capped; NDs at MDL) (10)	-	C+F	0.000056	7,600	0.00000000736	0.00000000117	No	No
PAHs (ng/L)								
Acenaphthene	-	C+F	1.28	55,850	0.0000229	0.00000364	No	No
Anthracene	-	C+F	0.121	13,000	0.00000932	0.00000148	No	No
Phenanthrene	-	C+F	1.61	6,300	0.000255	0.0000405	No	No
Benzo(a)anthracene	-	C+F	0.0600	27.0	0.00222	0.000353	No	No
Benzo(b)fluoranthene	-	C+F	0.0917	677.4	0.000135	0.0000215	No	No
Chrysene	-	C+F	0.171	2,042	0.0000839	0.0000133	No	No
Fluoranthene	-	C+F	0.784	6,160	0.000127	0.0000202	No	No
TPH (ug/L)								
Diesel Range Organics	-	D	46.0	NA	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
C+F = column and filter
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
TEQ = Toxicity Equivalence Quotient
UCL = upper confidence limit on the mean
- - = not applicable

Table N-50
Identification of CPECs in Forebay Surface Water - Multiple COIs for Aquatic Organisms
Bradford Island - River Operable Unit
(2 of 2)

Chemicals of Interest	IUPAC #	Phase	Max Detected Conc (1)	Level II SLVs for Aquatic Organisms Exposed to Surface Water (2,3,4,5,6,7,8)	Toxicity Ratio for Aquatic Organisms (Tij)	(Tij/Tj) (9)	Chemical is a Concern for Aquatic Organisms? (Tij/Tj >= [1/Nij] x Q when Q = 1)	COI is Identified as a CPEC? (9) (Q = 1)

(1) The maximum detected concentration was used because there are less than 8 surface water samples.

Hierarchy of Aquatic Organisms SLV Selection (see Appendix J-5b)

(2) USEPA 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.

(3) Oregon Department of Environmental Quality (DEQ). Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Table 33A).

(4) DEQ 1998. Updated 2001. Guidance for Ecological risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.

(5) Suter GW II, and CL Tsao. 1996. Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on Oak Ridge Reservation: 1996 Revision. ORNL, Oak Ridge, TN. 104pp. ES/ER/TM-96/R2.

(6) USEPA 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. November. EPA-600-R-02-013.

(7) Canadian Council of Resource and Environment Ministers. 2007. Canadian Water Quality Guidelines for the Protection of Aquatic Life. December Accessed on 1/20/10 at http://ceqg-rcqe.ccme.ca/.

(8) Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34 pages.

Multiple COIs Simultaneously within a Given Medium

(9) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.

Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific

Q = Receptor designator

Nij = total number of *i* contaminants in medium *j* = 17

Tj = sum of toxicity ratios for all contaminants in medium *j* = 6.30

Assumptions: Q = 1 for terrestrial T&E species and all aquatic species

Q = 5 for all common terrestrial species

(10) The lowest surface water SLV for 2,3,7,8-TCDD is protective of mammals (DEQ's 2001 SLV for surface water, as cited in Appendix J, Table J-5). Therefore, the mammalian TEQ for dioxin-like PCBs in Forebay surface water is used appropriately for comparison to the lowest surface water SLV.

Note: Both the fish PCB TEQ and total PCB congener toxicity ratios were included in the sum of all toxicity ratios, which may double-count affects from PCBs.

Table N-51
Identification of Bioaccumulative CPECs in Forebay Tissue - Fish and Shellfish
Bradford Island - River Operable Unit
(1 of 5)

Tissue	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	CTLs for Fish & Shellfish Exposed to Tissue (2)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)							
Clam	Beryllium	-	0.00218	NA	- -	No	Yes - No SLV
Clam	Cadmium	-	0.382	0.15	2.55	Yes	**Yes**
Crayfish	Antimony	-	0.0420	NA	- -	No	Yes - No SLV
Crayfish	Arsenic	-	0.519	6.6	0.0786	Yes	No
Crayfish	Chromium	-	0.764	NA	- -	No	Yes - No SLV
Crayfish	Mercury	-	0.0237	0.088	0.269	Yes	No
Crayfish	Methyl Mercury	-	0.0329	0.088	0.374	Yes	No
Crayfish	Nickel	-	4.88	NA	- -	No	Yes - No SLV
Sculpin	Cadmium	-	0.0243	0.15	0.162	Yes	**Yes**
Sculpin	Lead	-	0.103	0.12	0.858	Yes	**Yes**
Sculpin	Mercury	-	0.187	0.088	2.13	Yes	**Yes**
Smallmouth Bass	Aluminum	-	7.11	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Barium	-	1.73	NA	- -	No	Yes - No SLV
Smallmouth Bass	Copper	-	0.764	NA	- -	No	Yes - No SLV
Smallmouth Bass	Mercury	-	0.317	0.088	3.60	Yes	**Yes**
Smallmouth Bass	Zinc	-	14.9	NA	- -	Yes	**Yes - Bio - No SLV**
PCB Aroclors (ug/kg)							
Clam	Aroclor 1254	-	37.0	430	0.0860	Yes	No
Clam	Total PCBs As Aroclors (NDs at MDL)	-	37.0	430	0.0860	Yes	No
Sculpin	Aroclor 1254	-	436	430	1.01	Yes	**Yes**
Sculpin	Total PCBs As Aroclors (NDs at MDL)	-	436	430	1.01	Yes	**Yes**
Smallmouth Bass	Aroclor 1242	-	260	430	0.605	Yes	**Yes**
Smallmouth Bass	Aroclor 1254	-	4,050	430	9.42	Yes	**Yes**
Smallmouth Bass	Total PCBs As Aroclors (NDs at MDL)	-	4,100	430	9.53	Yes	**Yes**
PCB Congeners (ug/kg)							
Clam	3,3',4,4'-Tetrachlorobiphenyl	77	0.0421	430	0.0000979	Yes	No
Clam	3,4,4',5-Tetrachlorobiphenyl	81	0.00209	430	0.00000486	Yes	No
Clam	2,3,3',4,4'-Pentachlorobiphenyl	105	2.41	430	0.00560	Yes	No
Clam	2,3,4,4',5-Pentachlorobiphenyl	114	0.171	430	0.000398	Yes	No
Clam	2,3',4,4',5-Pentachlorobiphenyl	118	24.3	430	0.0565	Yes	No
Clam	2,3',4,4',5'-Pentachlorobiphenyl	123	0.441	430	0.00103	Yes	No
Clam	3,3',4,4',5-Pentachlorobiphenyl	126	0.00565	430	0.0000131	Yes	No
Clam	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	1.35	430	0.00314	Yes	No

Table N-51
Identification of Bioaccumulative CPECs in Forebay Tissue - Fish and Shellfish
Bradford Island - River Operable Unit
(2 of 5)

Tissue	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	CTLs for Fish & Shellfish Exposed to Tissue (2)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
Clam	2,3',4,4',5,5'-Hexachlorobiphenyl	167	1.51	430	0.00351	Yes	No
Clam	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.00344	430	0.00000800	Yes	No
Clam	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	128	430	0.298	Yes	**Yes**
Clam	PCBs As Fish TEQ (KM, capped; NDs at MDL)	-	0.000189	0.00640	0.0295	Yes	No
Crayfish	3,3',4,4'-Tetrachlorobiphenyl	77	0.00867	430	0.0000202	Yes	No
Crayfish	3,4,4',5-Tetrachlorobiphenyl	81	0.000452	430	0.00000105	Yes	No
Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	105	0.0908	430	0.000211	Yes	No
Crayfish	2,3,4,4',5-Pentachlorobiphenyl	114	0.697	430	0.00162	Yes	No
Crayfish	2,3',4,4',5-Pentachlorobiphenyl	118	11.9	430	0.0277	Yes	No
Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	123	0.412	430	0.000958	Yes	No
Crayfish	3,3',4,4',5-Pentachlorobiphenyl	126	0.00208	430	0.00000484	Yes	No
Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	3.53	430	0.00821	Yes	No
Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	167	1.49	430	0.00347	Yes	No
Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.0821	430	0.000191	Yes	No
Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	36.5	430	0.0848	Yes	No
Crayfish	PCBs As Fish TEQ (KM, capped; NDs at MDL)	-	0.000123	0.00640	0.0192	Yes	No
Sculpin	3,3',4,4'-Tetrachlorobiphenyl	77	0.1600	430	0.000372	Yes	No
Sculpin	3,4,4',5-Tetrachlorobiphenyl	81	0.00145	430	0.00000337	Yes	No
Sculpin	2,3,3',4,4'-Pentachlorobiphenyl	105	177	430	0.412	Yes	**Yes**
Sculpin	2,3,4,4',5-Pentachlorobiphenyl	114	13.3	430	0.0309	Yes	No
Sculpin	2,3',4,4',5-Pentachlorobiphenyl	118	500	430	1.16	Yes	**Yes**
Sculpin	2,3',4,4',5'-Pentachlorobiphenyl	123	7.77	430	0.0181	Yes	No
Sculpin	3,3',4,4',5-Pentachlorobiphenyl	126	0.0247	430	0.0000574	Yes	No
Sculpin	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	79.8	430	0.186	Yes	**Yes**
Sculpin	2,3',4,4',5,5'-Hexachlorobiphenyl	167	20.4	430	0.0474	Yes	No
Sculpin	3,3',4,4',5,5'-Hexachlorobiphenyl	169	0.00365	430	0.00000849	Yes	No
Sculpin	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	1.67	430	0.00388	Yes	No
Sculpin	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	3,180	430	7.40	Yes	**Yes**
Sculpin	PCBs As Fish TEQ (KM, capped; NDs at MDL)	-	0.00427	0.00640	0.668	Yes	**Yes**
Smallmouth Bass	3,3',4,4'-Tetrachlorobiphenyl	77	5.64	430	0.0131	Yes	No
Smallmouth Bass	3,4,4',5-Tetrachlorobiphenyl	81	0.691	430	0.00161	Yes	No
Smallmouth Bass	2,3,3',4,4'-Pentachlorobiphenyl	105	887	430	2.06	Yes	**Yes**
Smallmouth Bass	2,3,4,4',5-Pentachlorobiphenyl	114	65.6	430	0.153	Yes	**Yes**
Smallmouth Bass	2,3',4,4',5-Pentachlorobiphenyl	118	2,310	430	5.37	Yes	**Yes**

Table N-51
Identification of Bioaccumulative CPECs in Forebay Tissue - Fish and Shellfish
Bradford Island - River Operable Unit
(3 of 5)

Tissue	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	CTLs for Fish & Shellfish Exposed to Tissue (2)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
Smallmouth Bass	2,3',4,4',5'-Pentachlorobiphenyl	123	38.7	430	0.0900	Yes	No
Smallmouth Bass	3,3',4,4',5-Pentachlorobiphenyl	126	1.92	430	0.00447	Yes	No
Smallmouth Bass	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	375	430	0.872	Yes	**Yes**
Smallmouth Bass	2,3',4,4',5,5'-Hexachlorobiphenyl	167	108	430	0.251	Yes	**Yes**
Smallmouth Bass	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	8.14	430	0.0189	Yes	No
Smallmouth Bass	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	19,314	430	44.9	Yes	**Yes**
Smallmouth Bass	PCBs As Fish TEQ (KM, capped; NDs at MDL)	-	0.0293	0.00640	4.58	Yes	**Yes**
SVOCs (ug/kg)							
Clam	Bis(2-ethylhexyl) Phthalate	-	717	1,760	0.407	Yes	**Yes**
Clam	Butyl Benzyl Phthalate	-	13.4	310	0.0432	Yes	No
Clam	Di-n-octyl Phthalate	-	38.0	63,000	0.000603	Yes	No
Clam	p-cresol (4-Methylphenol)	-	15.2	NA	- -	No	Yes - No SLV
Crayfish	Bis(2-ethylhexyl) Phthalate	-	77.4	1,760	0.0440	Yes	No
Smallmouth Bass	Bis(2-ethylhexyl) Phthalate	-	338	1,760	0.192	Yes	**Yes**
Smallmouth Bass	Butyl Benzyl Phthalate	-	239	310	0.771	Yes	**Yes**
Smallmouth Bass	Di-n-butyl Phthalate	-	150	3,120	0.0481	Yes	No
PAHs (ug/kg)							
Clam	Acenaphthene[4]	-	1.81	19,000	0.0000953	Yes	No
Clam	Anthracene[4]	-	1.05	19,000	0.0000553	Yes	No
Clam	Fluorene[4]	-	2.51	19,000	0.000132	Yes	No
Clam	Phenanthrene[4]	-	10.5	19,000	0.000553	Yes	No
Clam	Benzo(a)anthracene[5]	-	1.11	1,000	0.00111	Yes	No
Clam	Benzo(a)pyrene[5]	-	0.580	1,000	0.000580	Yes	No
Clam	Benzo(b)fluoranthene[5]	-	0.655	1,000	0.000655	Yes	No
Clam	Benzo(g,h,i)perylene[5]	-	0.232	1,000	0.000232	Yes	No
Clam	Benzo(k)fluoranthene[5]	-	0.187	1,000	0.000187	Yes	No
Clam	Chrysene[5]	-	3.14	1,000	0.00314	Yes	No
Clam	Fluoranthene	-	11.7	19,000	0.000616	Yes	No
Clam	Indeno(1,2,3-cd)pyrene[5]	-	0.476	1,000	0.000476	Yes	No
Clam	Pyrene	-	2.76	1,000	0.00276	Yes	No
Crayfish	Acenaphthene[4]	-	0.167	19,000	0.00000879	Yes	No
Crayfish	Anthracene[4]	-	0.134	19,000	0.00000705	Yes	No

Table N-51
Identification of Bioaccumulative CPECs in Forebay Tissue - Fish and Shellfish
Bradford Island - River Operable Unit
(4 of 5)

Tissue	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	CTLs for Fish & Shellfish Exposed to Tissue (2)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
Crayfish	Fluorene[4]	-	0.169	19,000	0.00000889	Yes	No
Crayfish	Phenanthrene[4]	-	0.583	19,000	0.0000307	Yes	No
Crayfish	Benzo(a)anthracene[5]	-	0.274	1,000	0.000274	Yes	No
Crayfish	Benzo(a)pyrene[5]	-	0.170	1,000	0.000170	Yes	No
Crayfish	Benzo(b)fluoranthene[5]	-	0.140	1,000	0.000140	Yes	No
Crayfish	Benzo(g,h,i)perylene[5]	-	0.206	1,000	0.000206	Yes	No
Crayfish	Benzo(k)fluoranthene[5]	-	0.116	1,000	0.000116	Yes	No
Crayfish	Chrysene[5]	-	0.144	1,000	0.000144	Yes	No
Crayfish	Fluoranthene	-	0.426	19,000	0.0000224	Yes	No
Crayfish	Indeno(1,2,3-cd)pyrene[5]	-	0.166	1,000	0.000166	Yes	No
Crayfish	Pyrene	-	0.468	1,000	0.000468	Yes	No
Smallmouth Bass	Acenaphthene[4]	-	1.07	19,000	0.0000563	Yes	No
Smallmouth Bass	Anthracene[4]	-	11.8	19,000	0.000621	Yes	No
Smallmouth Bass	Fluorene[4]	-	2.52	19,000	0.000133	Yes	No
Smallmouth Bass	Phenanthrene[4]	-	2.88	19,000	0.000152	Yes	No
Smallmouth Bass	Benzo(a)anthracene[5]	-	3.69	1,000	0.00369	Yes	No
Smallmouth Bass	Benzo(a)pyrene[5]	-	3.25	1,000	0.00325	Yes	No
Smallmouth Bass	Benzo(b)fluoranthene[5]	-	4.23	1,000	0.00423	Yes	No
Smallmouth Bass	Benzo(g,h,i)perylene[5]	-	2.72	1,000	0.00272	Yes	No
Smallmouth Bass	Benzo(k)fluoranthene[5]	-	3.29	1,000	0.00329	Yes	No
Smallmouth Bass	Chrysene[5]	-	2.96	1,000	0.00296	Yes	No
Smallmouth Bass	Dibenz(a,h)anthracene[5]	-	3.44	1,000	0.00344	Yes	No
Smallmouth Bass	Fluoranthene	-	3.03	19,000	0.000159	Yes	No
Smallmouth Bass	Indeno(1,2,3-cd)pyrene[5]	-	3.89	1,000	0.00389	Yes	No
Smallmouth Bass	Pyrene	-	2.30	1,000	0.00230	Yes	No
					Clam Sum R_{Bac}[6] = 3.09 : 3.31 : 3.04		
					Crayfish Sum R_{Bac}[6] = - - : 0.852 : 0.787		
					Sculpin Sum R_{Bac}[6] = 4.16 : 10.5 : 3.81		
					Smallmouth Bass Sum R_{Bac}[6] = 14.2 : 49.6 : 9.22		

This table only includes COIs detected > 5% and above the reference area (metals only).

Table N-51
Identification of Bioaccumulative CPECs in Forebay Tissue - Fish and Shellfish
Bradford Island - River Operable Unit
(5 of 5)

Tissue	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	CTLs for Fish & Shellfish Exposed to Tissue (2)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)

CPEC = chemical of potential ecological concern
COI = chemical of interest
CTL = critical tissue level (for fish)
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
TEQ = Toxicity Equivalence Quotient
UCL = upper confidence limit on the mean
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.
(2) DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31 (see Appendix J-5d).

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The SLV for Fluoranthene was used as a surrogate for the individual LPAHs without SLVs. Fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH; however, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH SLVs.
(5) The SLV for pyrene was used as a surrogate for the individual HPAHs without SLVs.
(6) The Sum R_{Bac} is the sum of the individual $R_{Bac.}$ Three ways of calculating Sum R_{Bac}: Total PCBs as Aroclors, individual metals, SVOCs, and PAHs : Total PCBs as Congeners, individual metals, SVOCs, and PAHs : PCBs as Fish TEQs, individual metals, SVOCs, and PAHs.

Table N-52
Identification of Bioaccumulative CPECs in Forebay Sediment - Fish
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	SLVs for Freshwater Fish Exposed to Sediment (2)	Toxicity Ratio for Fish (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)						
Aluminum	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
Barium	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Cadmium	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
Copper	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Lead	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
Mercury	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
Zinc	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
PCB Aroclors (ug/kg)						
Aroclor 1254	-	27.0	22.0	1.23	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	-	28.7	22.0	1.30	Yes	**Yes**
PCB Congeners (ug/kg)						
2,3,3',4,4'-Pentachlorobiphenyl	105	0.318	62.0	0.00513	Yes	No
2,3,4,4',5-Pentachlorobiphenyl	114	0.0238	65.0	0.000366	Yes	No
2,3',4,4',5-Pentachlorobiphenyl	118	0.783	79.0	0.00991	Yes	No
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.149	79.0	0.00189	Yes	No
2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0449	79.0	0.000568	Yes	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	3.59	22.0	0.163	Yes	No
PCBs As Fish TEQ (KM, capped; NDs at MDL)	-	0.00000759	0.000560	0.0136	Yes	No
SVOCs (ug/kg)						
Bis(2-ethylhexyl) Phthalate	-	180	NA	- -	Yes	**Yes - Bio - No SLV**
Sum R_{Bac}^{4} = 1.30 : 0.163 : 0.0136						

This table only includes the CPECs detected > 5% from the Tissue - Fish Table (Table N-51).
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
TEQ = Toxicity Equivalence Quotient
UCL = upper confidence limit on the mean

Table N-52
Identification of Bioaccumulative CPECs in Forebay Sediment - Fish
Bradford Island - River Operable Unit
(2 of 2)

Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	SLVs for Freshwater Fish Exposed to Sediment (2)	Toxicity Ratio for Fish (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)

Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.
(2) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative freshwater fish SLVs from (see Appendix J-5c):

Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31.

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The Sum R_{Bac} is the R_{Bac} for Total PCBs as Aroclors, Total PCBs as congeners, and PCBs as TEQ (respectively), since there are no other COIs with toxicity ratios.

Table N-53
Identification of Bioaccumulative CPECs in Forebay Tissue - Birds (Individual)
Bradford Island - River Operable Unit
(1 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Individual Birds Exposed to Tissue (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)							
Crayfish	Antimony	-	0.0420	NA	- -	No	Yes - No SLV
Crayfish	Arsenic	-	0.519	13	0.0399	Yes	No
Crayfish	Chromium	-	0.764	NA	- -	No	Yes - No SLV
Crayfish	Mercury	-	0.0237	0.074	0.320	Yes	**Yes**
Crayfish	Methyl Mercury	-	0.0329	0.074	0.445	Yes	**Yes**
Crayfish	Nickel	-	4.88	NA	- -	No	Yes - No SLV
Sculpin	Cadmium	-	0.0243	8.4	0.00289	Yes	No
Sculpin	Lead	-	0.103	9.3	0.0111	Yes	No
Sculpin	Mercury	-	0.187	0.074	2.53	Yes	**Yes**
Smallmouth Bass	Aluminum	-	7.11	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Barium	-	1.73	NA	- -	No	Yes - No SLV
Smallmouth Bass	Copper	-	0.764	NA	- -	No	Yes - No SLV
Smallmouth Bass	Mercury	-	0.317	0.074	4.28	Yes	**Yes**
Smallmouth Bass	Zinc	-	14.9	NA	- -	Yes	**Yes - Bio - No SLV**
PCB Aroclors (ug/kg)							
Sculpin	Aroclor 1254	-	436	35	12.5	Yes	**Yes**
Sculpin	Total PCBs As Aroclors (NDs at MDL)	-	436	35	12.5	Yes	**Yes**
Smallmouth Bass	Aroclor 1242	-	260	35	7.43	Yes	**Yes**
Smallmouth Bass	Aroclor 1254	-	4,050	35	116	Yes	**Yes**
Smallmouth Bass	Total PCBs As Aroclors (NDs at MDL)	-	4,100	35	117	Yes	**Yes**
PCB Congeners (ug/kg)							
Crayfish	3,3',4,4'-Tetrachlorobiphenyl	77	0.00867	0.16	0.0542	Yes	No
Crayfish	3,4,4',5-Tetrachlorobiphenyl	81	0.000452	0.08	0.00565	Yes	No
Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	105	0.0908	80	0.00114	Yes	No
Crayfish	2,3,4,4',5-Pentachlorobiphenyl	114	0.697	800	0.000871	Yes	No
Crayfish	2,3',4,4',5-Pentachlorobiphenyl	118	11.9	800	0.0149	Yes	No
Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	123	0.412	800	0.000515	Yes	No
Crayfish	3,3',4,4',5-Pentachlorobiphenyl	126	0.00208	0.08	0.0260	Yes	No
Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	3.53	80	0.0441	Yes	No
Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	167	1.49	800	0.00186	Yes	No
Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.0821	800	0.000103	Yes	No
Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	36.5	35	1.04	Yes	**Yes**

Table N-53
Identification of Bioaccumulative CPECs in Forebay Tissue - Birds (Individual)
Bradford Island - River Operable Unit
(2 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Individual Birds Exposed to Tissue (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
Crayfish	PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.000950	0.019	0.0500	Yes	No
Sculpin	3,3',4,4'-Tetrachlorobiphenyl	77	0.160	0.16	1.00	Yes	**Yes**
Sculpin	3,4,4',5-Tetrachlorobiphenyl	81	0.00145	0.08	0.0181	Yes	No
Sculpin	2,3,3',4,4'-Pentachlorobiphenyl	105	177	80	2.21	Yes	**Yes**
Sculpin	2,3,4,4',5-Pentachlorobiphenyl	114	13.3	800	0.0166	Yes	No
Sculpin	2,3',4,4',5-Pentachlorobiphenyl	118	500	800	0.625	Yes	**Yes**
Sculpin	2,3',4,4',5'-Pentachlorobiphenyl	123	7.77	800	0.00971	Yes	No
Sculpin	3,3',4,4',5-Pentachlorobiphenyl	126	0.0247	0.08	0.309	Yes	**Yes**
Sculpin	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	79.8	80	1.00	Yes	**Yes**
Sculpin	2,3',4,4',5,5'-Hexachlorobiphenyl	167	20.4	800	0.0255	Yes	No
Sculpin	3,3',4,4',5,5'-Hexachlorobiphenyl	169	0.00365	8	0.000456	Yes	No
Sculpin	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	1.67	800	0.00209	Yes	No
Sculpin	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	3,180	35	90.9	Yes	**Yes**
Sculpin	PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.0302	0.019	1.59	Yes	**Yes**
Smallmouth Bass	3,3',4,4'-Tetrachlorobiphenyl	77	5.64	0.16	35.3	Yes	**Yes**
Smallmouth Bass	3,4,4',5-Tetrachlorobiphenyl	81	0.691	0.08	8.64	Yes	**Yes**
Smallmouth Bass	2,3,3',4,4'-Pentachlorobiphenyl	105	887	80	11.1	Yes	**Yes**
Smallmouth Bass	2,3,4,4',5-Pentachlorobiphenyl	114	65.6	800	0.0820	Yes	No
Smallmouth Bass	2,3',4,4',5-Pentachlorobiphenyl	118	2,310	800	2.89	Yes	**Yes**
Smallmouth Bass	2,3',4,4',5'-Pentachlorobiphenyl	123	38.7	800	0.0484	Yes	No
Smallmouth Bass	3,3',4,4',5-Pentachlorobiphenyl	126	1.92	0.08	24.0	Yes	**Yes**
Smallmouth Bass	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	375	80	4.69	Yes	**Yes**
Smallmouth Bass	2,3',4,4',5,5'-Hexachlorobiphenyl	167	108	800	0.135	Yes	**Yes**
Smallmouth Bass	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	8.14	800	0.0102	Yes	No
Smallmouth Bass	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	19,314	35	552	Yes	**Yes**
Smallmouth Bass	PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.692	0.019	36.4	Yes	**Yes**
SVOCs (ug/kg)							
Crayfish	Bis(2-ethylhexyl) Phthalate	-	77.4	6,260	0.0124	Yes	No
Smallmouth Bass	Bis(2-ethylhexyl) Phthalate	-	338	6,260	0.0540	Yes	No
Smallmouth Bass	Butyl Benzyl Phthalate	-	239	6,260	0.0382	Yes	No
Smallmouth Bass	Di-n-butyl Phthalate	-	150	626	0.240	Yes	**Yes**
PAHs (ug/kg)							

Table N-53
Identification of Bioaccumulative CPECs in Forebay Tissue - Birds (Individual)
Bradford Island - River Operable Unit
(3 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Individual Birds Exposed to Tissue (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
Crayfish	Acenaphthene	-	0.160	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Anthracene	-	0.094	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Fluorene	-	0.165	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Phenanthrene	-	0.576	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(a)anthracene	-	0.273	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(a)pyrene	-	0.135	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(b)fluoranthene	-	0.140	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(g,h,i)perylene	-	0.165	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(k)fluoranthene	-	0.111	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Chrysene	-	0.144	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Fluoranthene	-	0.426	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Indeno(1,2,3-cd)pyrene	-	0.166	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Pyrene	-	0.468	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Acenaphthene	-	1.07	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Anthracene	-	11.8	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Fluorene	-	2.52	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Phenanthrene	-	2.88	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Benzo(a)anthracene	-	3.69	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Benzo(a)pyrene	-	3.25	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Benzo(b)fluoranthene	-	4.23	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Benzo(g,h,i)perylene	-	2.72	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Benzo(k)fluoranthene	-	3.29	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Chrysene	-	2.96	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Dibenz(a,h)anthracene	-	3.44	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Fluoranthene	-	3.03	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Indeno(1,2,3-cd)pyrene	-	3.89	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Pyrene	-	2.30	NA	- -	Yes	**Yes - Bio - No SLV**
					Crayfish Sum R_{Bac}^4 =	- - : 1.86 : 0.867	
					Sculpin Sum R_{Bac}^4 =	15.0 : 93.4 : 4.13	
					Smallmouth Bass Sum R_{Bac}^4 =	122 : 556 : 41.1	

This table only includes COIs detected > 5% and above the reference area (metals only).
ATL = acceptable tissue level
CPEC = chemical of potential ecological concern

Table N-53
Identification of Bioaccumulative CPECs in Forebay Tissue - Birds (Individual)
Bradford Island - River Operable Unit
(4 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Individual Birds Exposed to Tissue (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)

COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
ND = non detect
NA = not available
TEQ = Toxicity Equivalence Quotient
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.
(2) DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31 (see Appendix J-5d).

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where $R_{Bac} = Cij/SLVij$, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .
R_{Bac} = bioaccumulation index for an individual COI
Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The Sum R_{Bac} is the sum of the individual R_{Bac}. Three ways of calculating Sum R_{Bac}; Total PCBs as Aroclors, individual metals, SVOCs, and PAHs : Total PCBs as Congeners, individual metals, SVOCs, and PAHs : PCBs as Fish TEQs, individual metals, SVOCs, and PAHs.

Table N-54
Identification of Bioaccumulative CPECs in Forebay Tissue - Birds (Population)
Bradford Island - River Operable Unit
(1 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Bird Populations Exposed to Tissue (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)							
Crayfish	Antimony	-	0.0420	NA	- -	No	Yes - No SLV
Crayfish	Arsenic	-	0.519	64	0.00811	Yes	No
Crayfish	Chromium	-	0.764	NA	- -	No	Yes - No SLV
Crayfish	Mercury	-	0.0237	0.15	0.158	Yes	No
Crayfish	Methyl Mercury	-	0.0329	0.15	0.219	Yes	No
Crayfish	Nickel	-	4.88	NA	- -	No	Yes - No SLV
Sculpin	Cadmium	-	0.0243	42	0.000579	Yes	No
Sculpin	Lead	-	0.103	46	0.00224	Yes	No
Sculpin	Mercury	-	0.187	0.15	1.25	Yes	**Yes**
Smallmouth Bass	Aluminum	-	7.11	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Barium	-	1.73	NA	- -	No	Yes - No SLV
Smallmouth Bass	Copper	-	0.764	NA	- -	No	Yes - No SLV
Smallmouth Bass	Mercury	-	0.317	0.15	2.11	Yes	**Yes**
Smallmouth Bass	Zinc	-	14.9	NA	- -	Yes	**Yes - Bio - No SLV**
PCB Aroclors (ug/kg)							
Sculpin	Aroclor 1254	-	436	1,800	0.242	Yes	**Yes**
Sculpin	Total PCBs As Aroclors (NDs at MDL)	-	436	1,800	0.242	Yes	**Yes**
Smallmouth Bass	Aroclor 1242	-	260	1,800	0.144	Yes	**Yes**
Smallmouth Bass	Aroclor 1254	-	4,050	1,800	2.25	Yes	**Yes**
Smallmouth Bass	Total PCBs As Aroclors (NDs at MDL)	-	4,100	1,800	2.28	Yes	**Yes**
PCB Congeners (ug/kg)							
Crayfish	3,3',4,4'-Tetrachlorobiphenyl	77	0.00867	0.800	0.0108	Yes	No
Crayfish	3,4,4',5-Tetrachlorobiphenyl	81	0.000452	0.400	0.00113	Yes	No
Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	105	0.0908	400	0.000227	Yes	No
Crayfish	2,3,4,4',5-Pentachlorobiphenyl	114	0.697	4,000	0.000174	Yes	No
Crayfish	2,3',4,4',5-Pentachlorobiphenyl	118	11.9	4,000	0.00298	Yes	No
Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	123	0.412	4,000	0.000103	Yes	No
Crayfish	3,3',4,4',5-Pentachlorobiphenyl	126	0.00208	0.400	0.00520	Yes	No
Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	3.53	400	0.00883	Yes	No
Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	167	1.49	4,000	0.000373	Yes	No
Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.0821	4,000	0.0000205	Yes	No
Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	36.5	1,800	0.0203	Yes	No
Crayfish	PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.000950	0.0400	0.0238	Yes	No

Table N-54
Identification of Bioaccumulative CPECs in Forebay Tissue - Birds (Population)
Bradford Island - River Operable Unit
(2 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Bird Populations Exposed to Tissue (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
Sculpin	3,3',4,4'-Tetrachlorobiphenyl	77	0.1600	0.800	0.200	Yes	**Yes**
Sculpin	3,4,4',5-Tetrachlorobiphenyl	81	0.00145	0.400	0.00363	Yes	No
Sculpin	2,3,3',4,4'-Pentachlorobiphenyl	105	177	400	0.443	Yes	**Yes**
Sculpin	2,3,4,4',5-Pentachlorobiphenyl	114	13.3	4,000	0.00333	Yes	No
Sculpin	2,3',4,4',5-Pentachlorobiphenyl	118	500	4,000	0.125	Yes	**Yes**
Sculpin	2,3',4,4',5'-Pentachlorobiphenyl	123	7.77	4,000	0.00194	Yes	No
Sculpin	3,3',4,4',5-Pentachlorobiphenyl	126	0.0247	0.400	0.0618	Yes	No
Sculpin	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	79.8	400	0.200	Yes	**Yes**
Sculpin	2,3',4,4',5,5'-Hexachlorobiphenyl	167	20.4	4,000	0.00510	Yes	No
Sculpin	3,3',4,4',5,5'-Hexachlorobiphenyl	169	0.00365	40.0	0.0000913	Yes	No
Sculpin	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	1.67	4,000	0.000418	Yes	No
Sculpin	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	3,180	1,800	1.77	Yes	**Yes**
Sculpin	PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.0302	0.0400	0.754	Yes	**Yes**
Smallmouth Bass	3,3',4,4'-Tetrachlorobiphenyl	77	5.64	0.800	7.05	Yes	**Yes**
Smallmouth Bass	3,4,4',5-Tetrachlorobiphenyl	81	0.691	0.400	1.73	Yes	**Yes**
Smallmouth Bass	2,3,3',4,4'-Pentachlorobiphenyl	105	887	400	2.22	Yes	**Yes**
Smallmouth Bass	2,3,4,4',5-Pentachlorobiphenyl	114	65.6	4,000	0.0164	Yes	No
Smallmouth Bass	2,3',4,4',5-Pentachlorobiphenyl	118	2,310	4,000	0.578	Yes	**Yes**
Smallmouth Bass	2,3',4,4',5'-Pentachlorobiphenyl	123	38.7	4,000	0.00968	Yes	No
Smallmouth Bass	3,3',4,4',5-Pentachlorobiphenyl	126	1.92	0.400	4.80	Yes	**Yes**
Smallmouth Bass	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	375	400	0.938	Yes	**Yes**
Smallmouth Bass	2,3',4,4',5,5'-Hexachlorobiphenyl	167	108	4,000	0.0270	Yes	No
Smallmouth Bass	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	8.14	4,000	0.00204	Yes	No
Smallmouth Bass	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	19,314	1,800	10.7	Yes	**Yes**
Smallmouth Bass	PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.692	0.0400	17.3	Yes	**Yes**
SVOCs (ug/kg)							
Crayfish	Bis(2-ethylhexyl) Phthalate	-	77.4	31,300	0.00247	Yes	No
Smallmouth Bass	Bis(2-ethylhexyl) Phthalate	-	338	31,300	0.0108	Yes	No
Smallmouth Bass	Butyl Benzyl Phthalate	-	239	31,300	0.00764	Yes	No
Smallmouth Bass	Di-n-butyl Phthalate	-	150	6,260	0.0240	Yes	No

Table N-54
Identification of Bioaccumulative CPECs in Forebay Tissue - Birds (Population)
Bradford Island - River Operable Unit
(3 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Bird Populations Exposed to Tissue (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
PAHs (ug/kg)							
Crayfish	Acenaphthene	-	0.160	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Anthracene	-	0.094	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Fluorene	-	0.165	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Phenanthrene	-	0.576	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(a)anthracene	-	0.273	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(a)pyrene	-	0.135	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(b)fluoranthene	-	0.140	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(g,h,i)perylene	-	0.165	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(k)fluoranthene	-	0.111	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Chrysene	-	0.144	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Fluoranthene	-	0.426	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Indeno(1,2,3-cd)pyrene	-	0.166	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Pyrene	-	0.468	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Acenaphthene	-	1.07	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Anthracene	-	11.8	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Fluorene	-	2.52	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Phenanthrene	-	2.88	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Benzo(a)anthracene	-	3.69	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Benzo(a)pyrene	-	3.25	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Benzo(b)fluoranthene	-	4.23	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Benzo(g,h,i)perylene	-	2.72	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Benzo(k)fluoranthene	-	3.29	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Chrysene	-	2.96	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Dibenz(a,h)anthracene	-	3.44	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Fluoranthene	-	3.03	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Indeno(1,2,3-cd)pyrene	-	3.89	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Pyrene	-	2.30	NA	- -	Yes	**Yes - Bio - No SLV**
					Crayfish Sum R_{Bac}^4 =	- - : 0.408 : 0.412	
					Sculpin Sum R_{Bac}^4 =	1.49 : 3.02 : 2.00	
					Smallmouth Bass Sum R_{Bac}^4 =	4.43 : 12.9 : 19.5	

This table only includes COIs detected > 5% and above the reference area (metals only).
ATL = acceptable tissue level
CPEC = chemical of potential ecological concern

Table N-54
Identification of Bioaccumulative CPECs in Forebay Tissue - Birds (Population)
Bradford Island - River Operable Unit
(4 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Bird Populations Exposed to Tissue (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)

COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
TEQ = Toxicity Equivalence Quotient
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.
(2) DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31 (see Appendix J-5d).

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
R_{Bac} = bioaccumulation index for an individual COI
Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The Sum R_{Bac} is the sum of the individual R_{Bac}. Three ways of calculating Sum R_{Bac}; Total PCBs as Aroclors, individual metals, SVOCs, and PAHs : Total PCBs as Congeners, individual metals, SVOCs, and PAHs : PCBs as Fish TEQs, individual metals, SVOCs, and PAHs

Table N-55
Identification of Bioaccumulative CPECs in Forebay Sediment - Birds (Individual)
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	SLVs for Individual Birds exposed to Sediment (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)						
Aluminum	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
Antimony	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Barium	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Chromium	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Copper	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Mercury	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
Nickel	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Zinc	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
PCB Aroclors (ug/kg)						
Aroclor 1254	-	27.0	1.80	15.0	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	-	28.7	1.80	15.9	Yes	**Yes**
PCB Congeners (ug/kg)						
3,3',4,4'-Tetrachlorobiphenyl	77	0.00223	0.00800	0.279	Yes	**Yes**
2,3,3',4,4'-Pentachlorobiphenyl	105	0.318	3.90	0.0815	Yes	No
2,3',4,4',5-Pentachlorobiphenyl	118	0.783	49.0	0.0160	Yes	No
3,3',4,4',5-Pentachlorobiphenyl	126	0.000188	0.00390	0.0482	Yes	No
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.149	4.9	0.0304	Yes	No
2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0449	49	0.000916	Yes	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	3.59	1.80	1.99	Yes	**Yes**
PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.000144	0.00170	0.0847	Yes	No
				Sum R_{Bac}^4 = 15.9 : 1.99 : 0.0847		

This table only includes the CPECs detected > 5% from the Tissue - Bird Individual Table (Table N-53), except PAHs which lack avian SLVs.
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value

Table N-55
Identification of Bioaccumulative CPECs in Forebay Sediment - Birds (Individual)
Bradford Island - River Operable Unit
(2 of 2)

Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	SLVs for Individual Birds exposed to Sediment (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)

TEQ = Toxicity Equivalence Quotient
UCL = upper confidence limit on the mean
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.
(2) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative bird (individual) SLVs from (see Appendix J-5c):

Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31.

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The Sum R_{Bac} is the R_{Bac} for Total PCBs as Aroclors, Total PCBs as congeners, and PCBs as TEQ (respectively), since there are no other COIs with toxicity ratios.

Table N-56
Identification of Bioaccumulative CPECs in Forebay Sediment - Birds (Population)
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	SLVs for Bird Populations Exposed to Sediment (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)						
Aluminum	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
Antimony		Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Barium	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Chromium		Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Copper	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Mercury	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
Nickel		Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Zinc	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
PCB Aroclors (ug/kg)						
Aroclor 1254	-	27.0	91.0	0.297	Yes	No
Total PCBs As Aroclors (NDs at MDL)	-	28.7	91.0	0.315	Yes	No
PCB Congeners (ug/kg)						
3,3',4,4'-Tetrachlorobiphenyl	77	0.00223	0.040	0.056	Yes	No
2,3,3',4,4'-Pentachlorobiphenyl	105	0.318	19.0	0.0167	Yes	No
2,3',4,4',5-Pentachlorobiphenyl	118	0.783	240	0.00326	Yes	No
3,3',4,4',5-Pentachlorobiphenyl	126	0.000188	0.019	0.00989	Yes	No
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.149	24.0	0.00621	Yes	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	3.59	91.0	0.0395	Yes	No
PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.000144	0.00350	0.0411	Yes	No
				Sum R_{Bac} [4] = 0.315 : 0.0395 : 0.0411		

This table only includes the CPECs detected > 5% from the Tissue - Bird Population Table (Table N-54), except PAHs which lack avian SLVs.
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
TEQ = Toxicity Equivalence Quotient
UCL = upper confidence limit on the mean

Table N-56
Identification of Bioaccumulative CPECs in Forebay Sediment - Birds (Population)
Bradford Island - River Operable Unit
(2 of 2)

Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	SLVs for Bird Populations Exposed to Sediment (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)

- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.
(2) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative bird (population) SLVs from (see Appendix J-5d):

Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31.

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where $R_{Bac} = Cij/SLVij$, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The Sum R_{Bac} is the R_{Bac} for Total PCBs as Aroclors, Total PCBs as congeners, and PCBs as TEQ (respectively), since there are no other COIs with toxicity ratios.

Table N-57
Identification of Bioaccumulative CPECs in Forebay Tissue - Mammals (Individual)
Bradford Island - River Operable Unit
(1 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Individual Mammals Exposed to Tissue (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)							
Crayfish	Antimony	-	0.0420	NA	- -	No	Yes - No SLV
Crayfish	Arsenic	-	0.519	7.6	0.0683	Yes	No
Crayfish	Chromium	-	0.764	NA	- -	No	Yes - No SLV
Crayfish	Mercury	-	0.0237	0.12	0.198	Yes	No
Crayfish	Methyl Mercury	-	0.0329	0.12	0.274	Yes	No
Crayfish	Nickel	-	4.88	NA	- -	No	Yes - No SLV
Sculpin	Cadmium	-	0.0243	5.6	0.00434	Yes	No
Sculpin	Lead	-	0.103	34	0.00303	Yes	No
Sculpin	Mercury	-	0.187	0.12	1.56	Yes	**Yes**
Smallmouth Bass	Aluminum	-	7.11	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Barium	-	1.73	NA	- -	No	Yes - No SLV
Smallmouth Bass	Copper	-	0.764	NA	- -	No	Yes - No SLV
Smallmouth Bass	Mercury	-	0.317	0.12	2.64	Yes	**Yes**
Smallmouth Bass	Zinc	-	14.9	NA	- -	Yes	**Yes - Bio - No SLV**
PCB Aroclors (ug/kg)							
Sculpin	Aroclor 1254	-	436	880	0.495	Yes	**Yes**
Sculpin	Total PCBs As Aroclors (NDs at MDL)	-	436	880	0.495	Yes	**Yes**
Smallmouth Bass	Aroclor 1242	-	260	880	0.295	Yes	**Yes**
Smallmouth Bass	Aroclor 1254	-	4,050	880	4.60	Yes	**Yes**
Smallmouth Bass	Total PCBs As Aroclors (NDs at MDL)	-	4,100	880	4.66	Yes	**Yes**
PCB Congeners (ug/kg)							
Crayfish	3,3',4,4'-Tetrachlorobiphenyl	77	0.00867	5.8	0.00149	Yes	No
Crayfish	3,4,4',5-Tetrachlorobiphenyl	81	0.000452	2.0	0.000226	Yes	No
Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	105	0.0908	20	0.00454	Yes	No
Crayfish	2,3,4,4',5-Pentachlorobiphenyl	114	0.697	20	0.0349	Yes	No
Crayfish	2,3',4,4',5-Pentachlorobiphenyl	118	11.9	20	0.595	Yes	**Yes**
Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	123	0.412	20	0.0206	Yes	No
Crayfish	3,3',4,4',5-Pentachlorobiphenyl	126	0.00208	0.0058	0.359	Yes	**Yes**
Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	3.53	20	0.177	Yes	**Yes**
Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	167	1.49	20	0.0745	Yes	No
Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.0821	20	0.00411	Yes	No
Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	36.5	880	0.0414	Yes	No
Crayfish	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.00117	0.000580	2.01	Yes	**Yes**
Sculpin	3,3',4,4'-Tetrachlorobiphenyl	77	0.160	5.8	0.0276	Yes	No

Table N-57
Identification of Bioaccumulative CPECs in Forebay Tissue - Mammals (Individual)
Bradford Island - River Operable Unit
(2 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Individual Mammals Exposed to Tissue (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
Sculpin	3,4,4',5-Tetrachlorobiphenyl	81	0.00145	2.0	0.000725	Yes	No
Sculpin	2,3,3',4,4'-Pentachlorobiphenyl	105	177	20	8.85	Yes	**Yes**
Sculpin	2,3,4,4',5-Pentachlorobiphenyl	114	13.3	20	0.665	Yes	**Yes**
Sculpin	2,3',4,4',5-Pentachlorobiphenyl	118	500	20	25.0	Yes	**Yes**
Sculpin	2,3',4,4',5'-Pentachlorobiphenyl	123	7.77	20	0.389	Yes	**Yes**
Sculpin	3,3',4,4',5-Pentachlorobiphenyl	126	0.0247	0.0058	4.26	Yes	**Yes**
Sculpin	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	79.8	20	3.99	Yes	**Yes**
Sculpin	2,3',4,4',5,5'-Hexachlorobiphenyl	167	20.4	20	1.02	Yes	**Yes**
Sculpin	3,3',4,4',5,5'-Hexachlorobiphenyl	169	0.00365	0.02	0.183	Yes	**Yes**
Sculpin	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	1.67	20	0.0835	Yes	No
Sculpin	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	3,180	880	3.61	Yes	**Yes**
Sculpin	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.0146	0.000580	25.2	Yes	**Yes**
Smallmouth Bass	3,3',4,4'-Tetrachlorobiphenyl	77	5.64	5.8	0.972	Yes	**Yes**
Smallmouth Bass	3,4,4',5-Tetrachlorobiphenyl	81	0.691	2.0	0.346	Yes	**Yes**
Smallmouth Bass	2,3,3',4,4'-Pentachlorobiphenyl	105	887	20	44.4	Yes	**Yes**
Smallmouth Bass	2,3,4,4',5-Pentachlorobiphenyl	114	65.6	20	3.28	Yes	**Yes**
Smallmouth Bass	2,3',4,4',5-Pentachlorobiphenyl	118	2,310	20	116	Yes	**Yes**
Smallmouth Bass	2,3',4,4',5'-Pentachlorobiphenyl	123	38.7	20	1.94	Yes	**Yes**
Smallmouth Bass	3,3',4,4',5-Pentachlorobiphenyl	126	1.92	0.0058	331	Yes	**Yes**
Smallmouth Bass	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	375	20	18.8	Yes	**Yes**
Smallmouth Bass	2,3',4,4',5,5'-Hexachlorobiphenyl	167	108	20	5.40	Yes	**Yes**
Smallmouth Bass	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	8.14	20	0.407	Yes	**Yes**
Smallmouth Bass	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	19,314	880	21.9	Yes	**Yes**
Smallmouth Bass	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.307	0.000580	530	Yes	**Yes**
SVOCs (ug/kg)							
Crayfish	Bis(2-ethylhexyl) Phthalate	-	77.4	55,500	0.00139	Yes	No
Smallmouth Bass	Bis(2-ethylhexyl) Phthalate	-	338	55,500	0.00609	Yes	No
Smallmouth Bass	Butyl Benzyl Phthalate	-	239	55,500	0.00431	Yes	No
Smallmouth Bass	Di-n-butyl Phthalate	-	150	1,670,000	0.0000898	Yes	No
PAHs (ug/kg)							
Crayfish	Acenaphthene[4]	-	0.160	190,000	0.000000842	Yes	No
Crayfish	Anthracene[4]	-	0.094	190,000	0.000000495	Yes	No
Crayfish	Fluorene[4]	-	0.165	190,000	0.000000868	Yes	No

Table N-57
Identification of Bioaccumulative CPECs in Forebay Tissue - Mammals (Individual)
Bradford Island - River Operable Unit
(3 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Individual Mammals Exposed to Tissue (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
Crayfish	Phenanthrene[4]	-	0.576	190,000	0.00000303	Yes	No
Crayfish	Benzo(a)anthracene[5]	-	0.273	9,500,000	0.0000000287	Yes	No
Crayfish	Benzo(a)pyrene[5]	-	0.135	9,500,000	0.0000000142	Yes	No
Crayfish	Benzo(b)fluoranthene[5]	-	0.140	9,500,000	0.0000000147	Yes	No
Crayfish	Benzo(g,h,i)perylene[5]	-	0.165	9,500,000	0.0000000174	Yes	No
Crayfish	Benzo(k)fluoranthene[5]	-	0.111	9,500,000	0.0000000117	Yes	No
Crayfish	Chrysene[5]	-	0.144	9,500,000	0.0000000152	Yes	No
Crayfish	Fluoranthene	-	0.426	190,000	0.00000224	Yes	No
Crayfish	Indeno(1,2,3-cd)pyrene[5]	-	0.166	9,500,000	0.0000000175	Yes	No
Crayfish	Pyrene	-	0.468	9,500,000	0.0000000493	Yes	No
Smallmouth Bass	Acenaphthene[4]	-	1.07	190,000	0.00000563	Yes	No
Smallmouth Bass	Anthracene[4]	-	11.8	190,000	0.0000621	Yes	No
Smallmouth Bass	Fluorene[4]	-	2.52	190,000	0.0000133	Yes	No
Smallmouth Bass	Phenanthrene[4]	-	2.88	190,000	0.0000152	Yes	No
Smallmouth Bass	Benzo(a)anthracene[5]	-	3.69	9,500,000	0.000000388	Yes	No
Smallmouth Bass	Benzo(a)pyrene[5]	-	3.25	9,500,000	0.000000342	Yes	No
Smallmouth Bass	Benzo(b)fluoranthene[5]	-	4.21	9,500,000	0.000000443	Yes	No
Smallmouth Bass	Benzo(g,h,i)perylene[5]	-	1.46	9,500,000	0.000000154	Yes	No
Smallmouth Bass	Benzo(k)fluoranthene[5]	-	3.29	9,500,000	0.000000346	Yes	No
Smallmouth Bass	Chrysene[5]	-	2.81	9,500,000	0.000000296	Yes	No
Smallmouth Bass	Dibenz(a,h)anthracene[5]	-	1.72	9,500,000	0.000000181	Yes	No
Smallmouth Bass	Fluoranthene	-	3.03	190,000	0.0000159	Yes	No
Smallmouth Bass	Indeno(1,2,3-cd)pyrene[5]	-	2.76	9,500,000	0.000000291	Yes	No
Smallmouth Bass	Pyrene	-	2.30	9,500,000	0.000000242	Yes	No
					Crayfish Sum R_{Bac}[6] = 0.541 : 0.583 : 2.55		
					Sculpin Sum R_{Bac}[6] = 2.06 : 5.18 : 26.7		
					Smallmouth Bass Sum R_{Bac}[6] = 7.31 : 24.6 : 532		

This table only includes COIs detected > 5% and above the reference area (metals only).
ATL = acceptable tissue level
CPEC = chemical of potential ecological concern
COI = chemical of interest

Table N-57
Identification of Bioaccumulative CPECs in Forebay Tissue - Mammals (Individual)
Bradford Island - River Operable Unit
(4 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Individual Mammals Exposed to Tissue (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)

KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
TEQ = Toxicity Equivalence Quotient
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.
(2) DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31 (see Table J-5d).

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The SLV for Fluoranthene was used as a surrogate for the individual LPAHs without SLVs. Fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH; however, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH SLVs.
(5) The SLV for pyrene was used as a surrogate for the individual HPAHs without SLVs.
(6) The Sum R_{Bac} is the sum of the individual R_{Bac}. Three ways of calculating Sum R_{Bac}: Total PCBs as Aroclors, individual metals, SVOCs, and PAHs : Total PCBs as Congeners, individual metals, SVOCs, and PAHs : PCBs as Fish TEQs, individual metals, SVOCs, and PAHs.

Table N-58
Identification of Bioaccumulative CPECs in Forebay Tissue - Mammals (Population)
Bradford Island - River Operable Unit
(1 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Mammal Populations Exposed to Tissue (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)							
Crayfish	Antimony	-	0.0420	NA	- -	No	Yes - No SLV
Crayfish	Arsenic	-	0.519	38	0.0137	Yes	No
Crayfish	Chromium	-	0.764	NA	- -	No	Yes - No SLV
Crayfish	Mercury	-	0.0237	0.20	0.119	Yes	No
Crayfish	Methyl Mercury	-	0.0329	0.20	0.165	Yes	No
Crayfish	Nickel	-	4.88	NA	- -	No	Yes - No SLV
Sculpin	Cadmium	-	0.0243	28	0.000868	Yes	No
Sculpin	Lead	-	0.103	170	0.000606	Yes	No
Sculpin	Mercury	-	0.187	0.20	0.935	Yes	**Yes**
Smallmouth Bass	Aluminum	-	7.11	NA	- -	Yes	**Yes - Bio - No SLV**
Smallmouth Bass	Barium	-	1.73	NA	- -	No	Yes - No SLV
Smallmouth Bass	Copper	-	0.764	NA	- -	No	Yes - No SLV
Smallmouth Bass	Mercury	-	0.317	0.20	1.59	Yes	**Yes**
Smallmouth Bass	Zinc	-	14.9	NA	- -	Yes	**Yes - Bio - No SLV**
PCB Aroclors (ug/kg)							
Sculpin	Aroclor 1254	-	436	1,700	0.256	Yes	**Yes**
Sculpin	Total PCBs As Aroclors (NDs at MDL)	-	436	1,700	0.256	Yes	**Yes**
Smallmouth Bass	Aroclor 1242	-	260	1,700	0.153	Yes	**Yes**
Smallmouth Bass	Aroclor 1254	-	4,050	1,700	2.38	Yes	**Yes**
Smallmouth Bass	Total PCBs As Aroclors (NDs at MDL)	-	4,100	1,700	2.41	Yes	**Yes**
PCB Congeners (ug/kg)							
Crayfish	3,3',4,4'-Tetrachlorobiphenyl	77	0.00867	160	0.0000542	Yes	No
Crayfish	3,4,4',5-Tetrachlorobiphenyl	81	0.000452	54	0.00000837	Yes	No
Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	105	0.0908	540	0.000168	Yes	No
Crayfish	2,3,4,4',5-Pentachlorobiphenyl	114	0.697	540	0.00129	Yes	No
Crayfish	2,3',4,4',5-Pentachlorobiphenyl	118	11.9	540	0.0220	Yes	No
Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	123	0.412	540	0.000763	Yes	No
Crayfish	3,3',4,4',5-Pentachlorobiphenyl	126	0.00208	0.16	0.0130	Yes	No
Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	3.53	540	0.00654	Yes	No
Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	167	1.49	540	0.00276	Yes	No
Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.0821	540	0.000152	Yes	No
Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	36.5	1,700	0.0215	Yes	No
Crayfish	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.00117	0.0160	0.0729	Yes	No
Sculpin	3,3',4,4'-Tetrachlorobiphenyl	77	0.1600	160	0.00100	Yes	No
Sculpin	3,4,4',5-Tetrachlorobiphenyl	81	0.00145	54	0.0000269	Yes	No

Table N-58
Identification of Bioaccumulative CPECs in Forebay Tissue - Mammals (Population)
Bradford Island - River Operable Unit
(2 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Mammal Populations Exposed to Tissue (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
Sculpin	2,3,3',4,4'-Pentachlorobiphenyl	105	177	540	0.328	Yes	**Yes**
Sculpin	2,3,4,4',5-Pentachlorobiphenyl	114	13.3	540	0.0246	Yes	No
Sculpin	2,3',4,4',5-Pentachlorobiphenyl	118	500	540	0.926	Yes	**Yes**
Sculpin	2,3',4,4',5'-Pentachlorobiphenyl	123	7.77	540	0.0144	Yes	No
Sculpin	3,3',4,4',5-Pentachlorobiphenyl	126	0.0247	0.16	0.154	Yes	**Yes**
Sculpin	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	79.8	540	0.148	Yes	**Yes**
Sculpin	2,3',4,4',5,5'-Hexachlorobiphenyl	167	20.4	540	0.0378	Yes	No
Sculpin	3,3',4,4',5,5'-Hexachlorobiphenyl	169	0.00365	0.54	0.00676	Yes	No
Sculpin	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	1.67	540	0.00309	Yes	No
Sculpin	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	3,180	1,700	1.87	Yes	**Yes**
Sculpin	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.0146	0.0160	0.913	Yes	**Yes**
Smallmouth Bass	3,3',4,4'-Tetrachlorobiphenyl	77	5.64	160	0.0353	Yes	No
Smallmouth Bass	3,4,4',5-Tetrachlorobiphenyl	81	0.691	54	0.0128	Yes	No
Smallmouth Bass	2,3,3',4,4'-Pentachlorobiphenyl	105	887	540	1.64	Yes	**Yes**
Smallmouth Bass	2,3,4,4',5-Pentachlorobiphenyl	114	65.6	540	0.121	Yes	**Yes**
Smallmouth Bass	2,3',4,4',5-Pentachlorobiphenyl	118	2,310	540	4.28	Yes	**Yes**
Smallmouth Bass	2,3',4,4',5'-Pentachlorobiphenyl	123	38.7	540	0.0717	Yes	No
Smallmouth Bass	3,3',4,4',5-Pentachlorobiphenyl	126	1.92	0.16	12.0	Yes	**Yes**
Smallmouth Bass	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	375	540	0.694	Yes	**Yes**
Smallmouth Bass	2,3',4,4',5,5'-Hexachlorobiphenyl	167	108	540	0.200	Yes	**Yes**
Smallmouth Bass	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	8.14	540	0.0151	Yes	No
Smallmouth Bass	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	19,314	1,700	11.4	Yes	**Yes**
Smallmouth Bass	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.307	0.0160	19.2	Yes	**Yes**
SVOCs (ug/kg)							
Crayfish	Bis(2-ethylhexyl) Phthalate	-	77.4	555,000	0.000139	Yes	No
Smallmouth Bass	Bis(2-ethylhexyl) Phthalate	-	338	555,000	0.000609	Yes	No
Smallmouth Bass	Butyl Benzyl Phthalate	-	239	555,000	0.000431	Yes	No
Smallmouth Bass	Di-n-butyl Phthalate	-	150	5,570,000	0.0000269	Yes	No
PAHs (ug/kg)							
Crayfish	Acenaphthene[4]	-	0.160	950,000	0.000000168	Yes	No
Crayfish	Anthracene[4]	-	0.094	950,000	0.0000000989	Yes	No
Crayfish	Fluorene[4]	-	0.165	950,000	0.000000174	Yes	No
Crayfish	Phenanthrene[4]	-	0.576	950,000	0.000000606	Yes	No
Crayfish	Benzo(a)anthracene[5]	-	0.273	47,000,000	0.00000000581	Yes	No

Table N-58
Identification of Bioaccumulative CPECs in Forebay Tissue - Mammals (Population)
Bradford Island - River Operable Unit
(3 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Mammal Populations Exposed to Tissue (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
Crayfish	Benzo(a)pyrene[5]	-	0.135	47,000,000	0.00000000287	Yes	No
Crayfish	Benzo(b)fluoranthene[5]	-	0.140	47,000,000	0.00000000298	Yes	No
Crayfish	Benzo(g,h,i)perylene[5]	-	0.165	47,000,000	0.00000000351	Yes	No
Crayfish	Benzo(k)fluoranthene[5]	-	0.111	47,000,000	0.00000000236	Yes	No
Crayfish	Chrysene[5]	-	0.144	47,000,000	0.00000000306	Yes	No
Crayfish	Fluoranthene	-	0.426	950,000	0.000000448	Yes	No
Crayfish	Indeno(1,2,3-cd)pyrene[5]	-	0.166	47,000,000	0.00000000353	Yes	No
Crayfish	Pyrene	-	0.468	47,000,000	0.0000000100	Yes	No
Smallmouth Bass	Acenaphthene[4]	-	1.07	950,000	0.00000113	Yes	No
Smallmouth Bass	Anthracene[4]	-	11.8	950,000	0.0000124	Yes	No
Smallmouth Bass	Fluorene[4]	-	2.52	950,000	0.00000265	Yes	No
Smallmouth Bass	Phenanthrene[4]	-	2.88	950,000	0.00000303	Yes	No
Smallmouth Bass	Benzo(a)anthracene[5]	-	3.69	47,000,000	0.0000000785	Yes	No
Smallmouth Bass	Benzo(a)pyrene[5]	-	3.25	47,000,000	0.0000000691	Yes	No
Smallmouth Bass	Benzo(b)fluoranthene[5]	-	4.21	47,000,000	0.0000000896	Yes	No
Smallmouth Bass	Benzo(g,h,i)perylene[5]	-	1.46	47,000,000	0.0000000311	Yes	No
Smallmouth Bass	Benzo(k)fluoranthene[5]	-	3.29	47,000,000	0.0000000700	Yes	No
Smallmouth Bass	Chrysene[5]	-	2.81	47,000,000	0.0000000598	Yes	No
Smallmouth Bass	Dibenz(a,h)anthracene[5]	-	1.72	47,000,000	0.0000000366	Yes	No
Smallmouth Bass	Fluoranthene	-	3.03	950,000	0.00000319	Yes	No
Smallmouth Bass	Indeno(1,2,3-cd)pyrene[5]	-	2.76	47,000,000	0.0000000587	Yes	No
Smallmouth Bass	Pyrene	-	2.30	47,000,000	0.0000000489	Yes	No
					Crayfish Sum R_{Bac}[6] =	0.297 : 0.318 : 0.370	
					Sculpin Sum R_{Bac}[6] =	1.19 : 2.81 : 1.85	
					Smallmouth Bass Sum R_{Bac}[6] =	4.00 : 12.9 : 20.8	

This table only includes COIs detected > 5% and above the reference area (metals only).
ATL = acceptable tissue level
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect

Table N-58
Identification of Bioaccumulative CPECs in Forebay Tissue - Mammals (Population)
Bradford Island - River Operable Unit
(4 of 4)

Medium	Chemicals of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	ATLs for Mammal Populations Exposed to Tissue (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)

TEQ = Toxicity Equivalence Quotient
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.
(2) DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31 (see Appendix J-5d).

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The SLV for Fluoranthene was used as a surrogate for the individual LPAHs without SLVs. Fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH; however, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH SLVs.
(5) The SLV for pyrene was used as a surrogate for the individual HPAHs without SLVs.
(6) The Sum R_{Bac} is the sum of the individual R_{Bac}. Three ways of calculating Sum R_{Bac}; Total PCBs as Aroclors, individual metals, SVOCs, and PAHs : Total PCBs as Congeners, individual metals, SVOCs, and PAHs : PCBs as Fish TEQs, individual metals, SVOCs, and PAHs.

Table N-59
Identification of Bioaccumulative CPECs in Forebay Sediment - Mammals (Individual)
Bradford Island - River Operable Unit
(1 of 2)

Chemical of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	SLVs for Individual Mammals Exposed to Sediment (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)						
Aluminum	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
Antimony	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Barium	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Chromium	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Copper	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Mercury	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
Nickel	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Zinc	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
PCB Aroclors (ug/kg)						
Aroclor 1254	-	27.0	44.0	0.614	Yes	No
Total PCBs As Aroclors (NDs at MDL)	-	28.7	44.0	0.652	Yes	No
PCB Congeners (ug/kg)						
2,3,3',4,4'-Pentachlorobiphenyl	105	0.318	0.940	0.338	Yes	**Yes**
2,3,4,4',5-Pentachlorobiphenyl	114	0.0238	0.980	0.0243	Yes	No
2,3',4,4',5-Pentachlorobiphenyl	118	0.783	1.20	0.653	Yes	**Yes**
3,3',4,4',5-Pentachlorobiphenyl	126	0.000188	0.000280	0.671	Yes	**Yes**
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.149	1.20	0.124	Yes	**Yes**
2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0449	1.20	0.0374	Yes	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	3.59	44.0	0.0816	Yes	No
PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.0000895	0.0000520	1.72	Yes	**Yes**
Sum R_{Bac}^{4} = 0.652 : 0.0816 : 1.72						

This table only includes the CPECs detected > 5% from the Tissue - Mammal Individual Table (Table N-57).
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
TEQ = Toxicity Equivalence Quotient

Table N-59
Identification of Bioaccumulative CPECs in Forebay Sediment - Mammals (Individual)
Bradford Island - River Operable Unit
(2 of 2)

Chemical of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	SLVs for Individual Mammals Exposed to Sediment (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)

UCL = upper confidence limit on the mean
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.
(2) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative mammalian (individual) SLVs from (see Appendix J-5c):

Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31.

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The Sum R_{Bac} is the R_{Bac} for Total PCBs as Aroclors, Total PCBs as congeners, and PCBs as TEQ (respectively), since there are no other COIs with toxicity ratios.

Table N-60
Identification of Bioaccumulative CPECs in Forebay Sediment - Mammals (Population)
Bradford Island - River Operable Unit
(1 of 2)

Chemical of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	SLVs for Mammal Populations Exposed to Sediment (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)						
Aluminum	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
Antimony	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Barium	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Chromium	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Copper	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Mercury	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
Nickel	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			No	No
Zinc	-	Statistically ≤ to Reference Area (see Table L-4 in RI)			Yes	No
PCB Aroclors (ug/kg)						
Aroclor 1254	-	27.0	84.0	0.321	Yes	No
Total PCBs As Aroclors (NDs at MDL)	-	28.7	84.0	0.342	Yes	No
PCB Congeners (ug/kg)						
2,3,3',4,4'-Pentachlorobiphenyl	105	0.318	26.0	0.0122	Yes	No
2,3,4,4',5-Pentachlorobiphenyl	114	0.0238	27.0	0.000881	Yes	No
2,3',4,4',5-Pentachlorobiphenyl	118	0.783	33.0	0.0237	Yes	No
3,3',4,4',5-Pentachlorobiphenyl	126	0.000188	0.00780	0.0241	Yes	No
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.149	33.0	0.00452	Yes	No
2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0449	33.0	0.00136	Yes	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	3.59	84.0	0.0427	Yes	No
PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.0000895	0.00140	0.0639	Yes	No
				Sum R_{Bac}^4 = 0.342 : 0.0427 : 0.0639		

This table only includes the CPECs detected > 5% from the Tissue - Mammal Population Table (Table N-58).
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
TEQ = Toxicity Equivalence Quotient

Table N-60
Identification of Bioaccumulative CPECs in Forebay Sediment - Mammals (Population)
Bradford Island - River Operable Unit
(2 of 2)

Chemical of Interest	IUPAC #	Lower of Maximum and 95% UCL (1)	SLVs for Mammal Populations Exposed to Sediment (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)

UCL = upper confidence limit on the mean
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.
(2) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative mammalian (population) SLVs from (see Appendix J-5c):

Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31.

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where $R_{Bac} = Cij/SLVij$, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .
R_{Bac} = bioaccumulation index for an individual COI
Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The Sum R_{Bac} is the R_{Bac} for Total PCBs as Aroclors, Total PCBs as congeners, and PCBs as TEQ (respectively), since there are no other COIs with toxicity ratios.

Table N-61
Identification of CPECs in Sediment at Mouth of Eagle Creek - Individual COIs for Benthic Invertebrates
Bradford Island - River Operable Unit
(1 of 1)

Chemicals of Interest (2)	Max Detected Conc	Level II SLVs for Benthics Exposed to Sediment (1)	Toxicity Ratio for Benthics (Tij)	Chemical is a Concern for Benthic Community? (Tij>1)	COI is Identified as a CPEC? (3) (Q = 1)
PCB Aroclors (ug/kg)					
Aroclor 1248	76.0	7.00	10.9	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	77.7	34.0	2.29	Yes	**Yes**
SVOCs (ug/kg)					
Carbazole	2.20	140	0.0157	No	No
PAHs (ug/kg)					
Anthracene	2.60	57	0.0456	No	No
Phenanthrene	6.50	42	0.155	No	No
Total LPAHs (KM, capped; NDs at MDL)	11.8	76	0.155	No	No
Benzo(a)anthracene	6.60	32	0.206	No	No
Benzo(a)pyrene	7.10	32	0.222	No	No
Benzo(b)fluoranthene	11.0	27	0.407	No	No
Benzo(g,h,i)perylene	5.00	300	0.0167	No	No
Benzo(k)fluoranthene	3.40	27	0.126	No	No
Chrysene	13.0	57	0.228	No	No
Fluoranthene	11.0	111	0.0991	No	No
Indeno(1,2,3-cd)pyrene	4.60	17	0.271	No	No
Pyrene	17.0	53	0.321	No	No
Total HPAHs (KM, capped; NDs at MDL)	80.9	193	0.419	No	No
Total PAHs (KM, capped; NDs at MDL)	90.8	1610	0.0564	No	No
TPH (mg/kg)					
Diesel Range Organics	13.0	NA	- -	- -	Yes - No SLV

This table does not include metals because they were detected below the reference area (Table L-7)
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

(1) DEQ Level II SLV from Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001 (see Appendix J-5c).
(2) Inorganics, with maximum detected concentrations less than the site-specific reference area concentrations (aluminum, antimony, arsenic, barium, beryllium, chromium, cobalt, copper, lead, mercury, nickel, vanadium, and zinc), were not considered CPECs and are not evaluated.

Individual COIs in a Given Media
(3) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-62
Identification of CPECs in Sediment at Mouth of Eagle Creek - Multiple COIs for Benthic Invertebrates
Bradford Island - River Operable Unit
(1 of 1)

Chemicals of Interest (2)	Max Detected Conc	Level II SLVs for Benthics Exposed to Sediment (1)	Toxicity Ratio for Benthics (Tij)	(Tij/Tj) (3)	Chemical is a Concern for Benthic Community? (Tij/Tj >= [1/Nij] x Q when Q = 1)	COI is Identified as a CPEC? (3) (Q = 1)
PCB Aroclors (ug/kg)						
Aroclor 1248	76.0	7.00	10.9	0.712	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	77.7	34.0	2.29	0.150	Yes	**Yes**
SVOCs (ug/kg)						
Carbazole	2.20	140	0.0157	0.00103	No	No
PAHs (ug/kg)						
Anthracene	2.60	57	0.0456	0.00299	No	No
Phenanthrene	6.50	42	0.155	0.0101	No	No
Benzo(a)anthracene	6.60	32	0.206	0.0135	No	No
Benzo(a)pyrene	7.10	32	0.222	0.0145	No	No
Benzo(b)fluoranthene	11.0	27	0.407	0.0267	No	No
Benzo(g,h,i)perylene	5.00	300	0.0167	0.00109	No	No
Benzo(k)fluoranthene	3.40	27	0.126	0.00825	No	No
Chrysene	13.0	57	0.228	0.0150	No	No
Fluoranthene	11.0	111	0.0991	0.00650	No	No
Indeno(1,2,3-cd)pyrene	4.60	17	0.271	0.0177	No	No
Pyrene	17.0	53	0.321	0.0210	No	No
TPH (mg/kg)						
Diesel Range Organics	13.0	NA	- -	- -	- -	Yes - No SLV

This table does not include metals because they were detected below the reference area (Table L-7)
CPEC = chemical of potential ecological concern
COI = chemical of interest
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

(1) DEQ Level II SLV from Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001 (see Appendix J-5c).
(2) Inorganics, with maximum detected concentrations less than the site-specific reference area concentrations (aluminum, antimony, arsenic, barium, beryllium, chromium, cobalt, copper, lead, mercury, nickel, vanadium, and zinc), were not considered CPECs and are not evaluated.

Multiple COIs Simultaneously within a Given Medium
(3) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
Nij = total number of *i* contaminants in medium *j* = 13
Tj = sum of toxicity ratios for all contaminants in medium *j* = 13.0
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-63
Identification of Bioaccumulative CPECs in Sediment at Mouth of Eagle Creek - Fish
Bradford Island - River Operable Unit
(1 of 1)

Chemicals of Interest (2)	Max Detected Conc	SLVs for Freshwater Fish Exposed to Sediment (1)	Toxicity Ratio for Fish (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
PCB Aroclors (ug/kg)					
Aroclor 1248	76.0	22.0	3.45	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	77.7	22.0	3.53	Yes	**Yes**
SVOCs (ug/kg)					
Carbazole	2.20	NA	- -	Yes	**Yes - Bio - No SLV**
PAHs (ug/kg)					
Anthracene[4]	2.60	37,000	0.0000703	Yes	No
Phenanthrene[4]	6.50	37,000	0.000176	Yes	No
Benzo(a)anthracene[5]	6.60	1,900	0.00347	Yes	No
Benzo(a)pyrene[5]	7.10	1,900	0.00374	Yes	No
Benzo(b)fluoranthene[5]	11.0	1,900	0.00579	Yes	No
Benzo(g,h,i)perylene[5]	5.00	1,900	0.00263	Yes	No
Benzo(k)fluoranthene[5]	3.40	1,900	0.00179	Yes	No
Chrysene[5]	13.0	1,900	0.00684	Yes	No
Fluoranthene	11.0	37,000	0.000297	Yes	No
Indeno(1,2,3-cd)pyrene[5]	4.60	1,900	0.00242	Yes	No
Pyrene	17.0	1,900	0.00895	Yes	No
TPH (mg/kg)					
Diesel Range Organics	13.0	NA	- -	NA	Yes - No SLV
			Sum R_{Bac}[6] =	3.57	

This table does not include metals because they were detected below the reference area (Table L-7)
CPEC = chemical of potential ecological concern
COI = chemical of interest
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) Bioaccumulative freshwater fish SLVs from Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31 (see Appendix J-5c).
(2) Inorganics, with maximum detected concentrations less than the site-specific reference area concentrations (aluminum, antimony, arsenic, barium, beryllium, chromium, cobalt, copper, lead, mercury, nickel, vanadium, and zinc), were not considered CPECs and are not evaluated.

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant*i* in medium *j* .
R_{Bac} = bioaccumulation index for an individual COI
Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The SLV for Fluoranthene was used as a surrogate for the individual LPAHs without SLVs. Fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH; however, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH SLVs.
(5) The SLV for pyrene was used as a surrogate for the individual HPAHs without SLVs
(6) The Sum R_{Bac} is the sum of the R_{Bac} for Total PCBs as Aroclors and the individual PAHs

Table N-64
Identification of Bioaccumulative CPECs in Sediment at Mouth of Eagle Creek - Birds (Individual)
Bradford Island - River Operable Unit
(1 of 1)

Chemicals of Interest (2)	Max Detected Conc	SLVs for Individual Birds Exposed to Sediment (1)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
PCB Aroclors (ug/kg)					
Aroclor 1248	76.0	1.80	42.2	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	77.7	1.80	43.2	Yes	**Yes**
SVOCs (ug/kg)					
Carbazole	2.20	NA	- -	Yes	**Yes - Bio - No SLV**
PAHs (ug/kg)					
Anthracene	2.60	NA	- -	Yes	**Yes - Bio - No SLV**
Phenanthrene	6.50	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(a)anthracene	6.60	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(a)pyrene	7.10	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(b)fluoranthene	11.0	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(g,h,i)perylene	5.00	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(k)fluoranthene	3.40	NA	- -	Yes	**Yes - Bio - No SLV**
Chrysene	13.0	NA	- -	Yes	**Yes - Bio - No SLV**
Fluoranthene	11.0	NA	- -	Yes	**Yes - Bio - No SLV**
Indeno(1,2,3-cd)pyrene	4.60	NA	- -	Yes	**Yes - Bio - No SLV**
Pyrene	17.0	NA	- -	Yes	**Yes - Bio - No SLV**
TPH (mg/kg)					
Diesel Range Organics	13.0	NA	- -	NA	Yes - No SLV
		Sum R_{Bac}[4] =	43.2		

This table does not include metals because they were detected below the reference area (Table L-7)
CPEC = chemical of potential ecological concern
COI = chemical of interest
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) Bioaccumulative bird (individual) SLVs from Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31 (see Appendix J-5c).

(2) Inorganics, with maximum detected concentrations less than the site-specific reference area concentrations (aluminum, antimony, arsenic, barium, beryllium, chromium, cobalt, copper, lead, mercury, nickel, vanadium, and zinc), were not considered CPECs and are not evaluated.

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant*i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The Sum R_{Bac} is the sum of the R_{Bac} for Total PCBs as Aroclors

Table N-65
Identification of Bioaccumulative CPECs in Sediment at Mouth of Eagle Creek - Birds (Population)
Bradford Island - River Operable Unit
(1 of 1)

Chemicals of Interest (2)	Max Detected Conc	SLVs for Bird Populations Exposed to Sediment (1)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
PCB Aroclors (ug/kg)					
Aroclor 1248	76.0	91.0	0.835	Yes	No
Total PCBs As Aroclors (NDs at MDL)	77.7	91.0	0.854	Yes	No
SVOCs (ug/kg)					
Carbazole	2.20	NA	- -	Yes	**Yes - Bio - No SLV**
PAHs (ug/kg)					
Anthracene	2.60	NA	- -	Yes	**Yes - Bio - No SLV**
Phenanthrene	6.50	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(a)anthracene	6.60	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(a)pyrene	7.10	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(b)fluoranthene	11.0	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(g,h,i)perylene	5.00	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(k)fluoranthene	3.40	NA	- -	Yes	**Yes - Bio - No SLV**
Chrysene	13.0	NA	- -	Yes	**Yes - Bio - No SLV**
Fluoranthene	11.0	NA	- -	Yes	**Yes - Bio - No SLV**
Indeno(1,2,3-cd)pyrene	4.60	NA	- -	Yes	**Yes - Bio - No SLV**
Pyrene	17.0	NA	- -	Yes	**Yes - Bio - No SLV**
TPH (mg/kg)					
Diesel Range Organics	13.0	NA	- -	NA	Yes - No SLV
		Sum R_{Bac}[4] =	0.854		

This table does not include metals because they were detected below the reference area (Table L-7)
CPEC = chemical of potential ecological concern
COI = chemical of interest
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) Bioaccumulative bird (population) SLVs from Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31 (see Appendix J-5c).

(2) Inorganics, with maximum detected concentrations less than the site-specific reference concentrations (aluminum, antimony, arsenic, barium, beryllium, chromium, cobalt, copper, lead, mercury, nickel, vanadium, and zinc), were not considered CPECs and are not evaluated.

Individual COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant*i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The Sum R_{Bac} is the sum of the R_{Bac} for Total PCBs as Aroclors

Table N-66
Identification of Bioaccumulative CPECs in Sediment at Mouth of Eagle Creek - Mammals (Individual)
Bradford Island - River Operable Unit
(1 of 1)

Chemicals of Interest (2)	Max Detected Conc	SLVs for Individual Mammals Exposed to Sediment (1)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
PCB Aroclors (ug/kg)					
Aroclor 1248	76.0	44.0	1.73	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	77.7	44.0	1.77	Yes	**Yes**
SVOCs (ug/kg)					
Carbazole	2.20	NA	- -	Yes	**Yes - Bio - No SLV**
PAHs (ug/kg)					
Anthracene[4]	2.60	360,000	0.00000722	Yes	No
Phenanthrene[4]	6.50	360,000	0.0000181	Yes	No
Benzo(a)anthracene[5]	6.60	18,000,000	0.000000367	Yes	No
Benzo(a)pyrene[5]	7.10	18,000,000	0.000000394	Yes	No
Benzo(b)fluoranthene[5]	11.0	18,000,000	0.000000611	Yes	No
Benzo(g,h,i)perylene[5]	5.00	18,000,000	0.000000278	Yes	No
Benzo(k)fluoranthene[5]	3.40	18,000,000	0.000000189	Yes	No
Chrysene[5]	13.0	18,000,000	0.000000722	Yes	No
Fluoranthene	11.0	360,000	0.0000306	Yes	No
Indeno(1,2,3-cd)pyrene[5]	4.60	18,000,000	0.000000256	Yes	No
Pyrene	17.0	18,000,000	0.000000944	Yes	No
TPH (mg/kg)					
Diesel Range Organics	13.0	NA	- -	NA	Yes - No SLV
			Sum R_{Bac}[6] = 1.77		

This table does not include metals because they were detected below the reference area (Table L-7).
CPEC = chemical of potential ecological concern
COI = chemical of interest
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) Bioaccumulative mammal (individual) SLVs from Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31 (see Appendix J-5c).
(2) Inorganics, with maximum detected concentrations less than the site-specific reference area concentrations (aluminum, antimony, arsenic, barium, beryllium, chromium, cobalt, copper, lead, mercury, nickel, vanadium, and zinc), were not considered CPECs and are not evaluated.

Bioaccumulative COIs in a Given Media
(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant*i* in medium *j* .
R_{Bac} = bioaccumulation index for an individual COI
Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The SLV for Fluoranthene was used as a surrogate for the individual LPAHs without SLVs. Fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH; however, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH SLVs.
(5) The SLV for pyrene was used as a surrogate for the individual HPAHs without SLVs.
(6) The Sum R_{Bac} is the sum of the R_{Bac} for Total PCBs as Aroclors and the individual PAHs.

Table N-67
Identification of Bioaccumulative CPECs in Sediment at Mouth of Eagle Creek - Mammals (Population)
Bradford Island - River Operable Unit
(1 of 1)

Chemicals of Interest (2)	Max Detected Conc	SLVs for Mammal Populations Exposed to Sediment (1)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
PCB Aroclors (ug/kg)					
Aroclor 1248	76.0	84.0	0.905	Yes	No
Total PCBs As Aroclors (NDs at MDL)	77.7	84.0	0.925	Yes	No
SVOCs (ug/kg)					
Carbazole	2.20	NA	- -	Yes	**Yes - Bio - No SLV**
PAHs (ug/kg)					
Anthracene[4]	2.60	1,800,000	0.00000144	Yes	No
Phenanthrene[4]	6.50	1,800,000	0.00000361	Yes	No
Benzo(a)anthracene[5]	6.60	90,000,000	0.0000000733	Yes	No
Benzo(a)pyrene[5]	7.10	90,000,000	0.0000000789	Yes	No
Benzo(b)fluoranthene[5]	11.0	90,000,000	0.000000122	Yes	No
Benzo(g,h,i)perylene[5]	5.00	90,000,000	0.0000000556	Yes	No
Benzo(k)fluoranthene[5]	3.40	90,000,000	0.0000000378	Yes	No
Chrysene[5]	13.0	90,000,000	0.000000144	Yes	No
Fluoranthene	11.0	1,800,000	0.00000611	Yes	No
Indeno(1,2,3-cd)pyrene[5]	4.60	90,000,000	0.0000000511	Yes	No
Pyrene	17.0	90,000,000	0.000000189	Yes	No
TPH (mg/kg)					
Diesel Range Organics	13.0	NA	- -	NA	Yes - No SLV
			Sum R_{Bac}[6] = 0.925		

This table does not include metals because they were detected below the reference area (Table L-7).
CPEC = chemical of potential ecological concern
COI = chemical of interest
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) Bioaccumulative mammal (population) SLVs from Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31 (see Appendix J-5c).
(2) Inorganics, with maximum detected concentrations less than the site-specific reference area concentrations (aluminum, antimony, arsenic, barium, beryllium, chromium, cobalt, copper, lead, mercury, nickel, vanadium, and zinc), were not considered CPECs and are not evaluated.

Bioaccumulative COIs in a Given Media
(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLV ij = Level II Screening Level Value from DEQ for contaminant*i* in medium *j* .
R_{Bac} = bioaccumulation index for an individual COI
Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The SLV for Fluoranthene was used as a surrogate for the individual LPAHs without SLVs. Fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH; however, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH SLVs.
(5) The SLV for pyrene was used as a surrogate for the individual HPAHs without SLVs.
(6) The Sum R_{Bac} is the sum of the R_{Bac} for Total PCBs as Aroclors and the individual PAHs.

Table N-68
Identification of CPECs in Sediment at Goose Island - Individual COIs for Benthic Invertebrates
Bradford Island - River Operable Unit
(1 of 3)

Chemicals of Interest	IUPAC #	Max Detected Conc	Level II SLVs for Benthics Exposed to Sediment (1)	Toxicity Ratio for Benthics (R_{Bac})	Chemical is a Concern for Benthic Community? (Tij>1)	COI is Identified as a CPEC? (3) (Q = 1)
INORGANICS (mg/kg) (2)						
Antimony	-	0.580	3.0	0.193	No	No
Cadmium	-	1.17	0.674	1.74	Yes	**Yes**
Thallium	-	0.435	0.354	1.23	Yes	**Yes**
Zinc	-	148	123	1.20	Yes	**Yes**
PCB Aroclors (ug/kg)						
Aroclor 1254	-	9.90	7.00	1.41	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	-	12.6	34.0	0.371	No	No
PCB Congeners (ug/kg)						
3,3',4,4'-Tetrachlorobiphenyl	77	0.00353	34.0	0.000104	No	No
3,4,4',5-Tetrachlorobiphenyl	81	0.000135	34.0	0.00000397	No	No
2,3,3',4,4'-Pentachlorobiphenyl	105	0.0277	34.0	0.000815	No	No
2,3,4,4',5-Pentachlorobiphenyl	114	0.00137	34.0	0.0000403	No	No
2,3',4,4',5-Pentachlorobiphenyl	118	0.0695	34.0	0.00204	No	No
2,3',4,4',5'-Pentachlorobiphenyl	123	0.000963	34.0	0.0000283	No	No
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.0104	34.0	0.000306	No	No
2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.00402	34.0	0.000118	No	No
2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.000869	34.0	0.0000256	No	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	1.34	34.0	0.0394	No	No
SVOCs (ug/kg)						
Bis(2-ethylhexyl) Phthalate	-	13.0	750	0.0173	No	No
Di-n-butyl Phthalate	-	10.0	111	0.0901	No	No
p-cresol (4-Methylphenol)	-	8.50	48	0.177	No	No
PAHs (ug/kg)						
Phenanthrene	-	4.60	42	0.110	No	No
Total LPAHs (KM, capped; NDs at MDL)	-	9.90	76	0.130	No	No
Benzo(a)anthracene	-	7.80	32	0.244	No	No
Benzo(a)pyrene	-	13.0	32	0.406	No	No
Benzo(b)fluoranthene	-	15.0	27	0.556	No	No
Benzo(g,h,i)perylene	-	9.90	300	0.0330	No	No
Benzo(k)fluoranthene	-	4.10	27	0.152	No	No

Table N-68
Identification of CPECs in Sediment at Goose Island - Individual COIs for Benthic Invertebrates
Bradford Island - River Operable Unit
(2 of 3)

Chemicals of Interest	IUPAC #	Max Detected Conc	Level II SLVs for Benthics Exposed to Sediment (1)	Toxicity Ratio for Benthics (R_{Bac})	Chemical is a Concern for Benthic Community? (Tij>1)	COI is Identified as a CPEC? (3) (Q = 1)
Chrysene	-	11.0	57	0.193	No	No
Fluoranthene	-	9.60	111	0.0865	No	No
Indeno(1,2,3-cd)pyrene	-	7.10	17	0.418	No	No
Pyrene	-	8.80	53	0.166	No	No
Total HPAHs (KM, capped; NDs at MDL)	-	89.1	193	0.462	No	No
Total PAHs (KM, capped; NDs at MDL)	-	96.1	1,610	0.0597	No	No
TPH (mg/kg)						
Diesel Range Organics	-	53.0	NA	- -	- -	Yes - No SLV
Residual Range Organics	-	480	NA	- -	- -	Yes - No SLV

This table only includes COIs detected above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

(1) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the DEQ Level II SLV (see Appendix J-5c):
Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(2) Inorganics with maximum detected concentrations less than the site-specific reference area concentrations (aluminum, arsenic, barium, beryllium, chromium, cobalt, copper, lead, mercury, nickel, and vanadium) were not considered CPECs and are not evaluated.

Individual COIs in a Given Media
(3) Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*.
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*.

Table N-68
Identification of CPECs in Sediment at Goose Island - Individual COIs for Benthic Invertebrates
Bradford Island - River Operable Unit
(3 of 3)

Chemicals of Interest	IUPAC #	Max Detected Conc	Level II SLVs for Benthics Exposed to Sediment (1)	Toxicity Ratio for Benthics (R_{Bac})	Chemical is a Concern for Benthic Community? (Tij>1)	COI is Identified as a CPEC? (3) (Q = 1)

Q = Receptor designator.

Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).

Q = 1 for terrestrial T&E species and all aquatic species

Q = 5 for all common terrestrial species

Table N-69
Identification of CPECs in Sediment at Goose Island - Multiple COIs for Benthic Invertebrates
Bradford Island - River Operable Unit
(1 of 2)

Chemical of Interest	IUPAC #	Max Detected Conc	Level II SLVs for Benthics Exposed to Sediment (1)	Toxicity Ratio for Benthics (Tij)	(Tij/Tj) (3)	Chemical is a Concern for Benthic Community? (Tij/Tj >= [1/Nij] x Q when Q = 1)	COI is Identified as a CPEC? (3) (Q = 1)
INORGANICS (mg/kg) (2)							
Antimony	-	0.580	3.0	0.193	0.0227	No	No
Cadmium	-	1.17	0.674	1.74	0.204	Yes	**Yes**
Thallium	-	0.435	0.354	1.23	0.144	Yes	**Yes**
Zinc	-	148	123	1.20	0.141	Yes	**Yes**
PCB Aroclors (ug/kg)							
Aroclor 1254	-	9.90	7.00	1.41	0.166	Yes	**Yes**
PCB Congeners (ug/kg)							
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	1.34	34.0	0.0394	0.00463	No	No
SVOCs (ug/kg)							
Bis(2-ethylhexyl) Phthalate	-	13.0	750	0.017	0.00203	No	No
Di-n-butyl Phthalate	-	10.0	140	0.0714	0.00838	No	No
p-cresol (4-Methylphenol)	-	8.50	48	0.177	0.0208	No	No
PAHs (ug/kg)							
Phenanthrene	-	7.40	42	0.176	0.0207	No	No
Benzo(a)anthracene	-	12.0	32	0.375	0.0440	No	No
Benzo(a)pyrene	-	7.50	32	0.234	0.0275	No	No
Benzo(b)fluoranthene	-	9.10	27	0.337	0.0396	No	No
Benzo(g,h,i)perylene	-	6.20	300	0.0207	0.00243	No	No
Benzo(k)fluoranthene	-	4.90	27	0.181	0.0213	No	No
Chrysene	-	20.0	57	0.351	0.0412	No	No
Fluoranthene	-	12.0	111	0.108	0.0127	No	No
Indeno(1,2,3-cd)pyrene	-	5.70	17	0.335	0.0394	No	No
Pyrene	-	17.0	53	0.321	0.0376	No	No
TPH (mg/kg)							
Diesel Range Organics	-	54	NA	- -	- -	- -	Yes - No SLV
Residual Range Organics	-	180	NA	- -	- -	- -	Yes - No SLV

This table only includes COIs detected above the reference area (metals only).

Table N-69
Identification of CPECs in Sediment at Goose Island - Multiple COIs for Benthic Invertebrates
Bradford Island - River Operable Unit
(2 of 2)

CPEC = chemical of potential ecological concern
COI = chemical of interest
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

(1) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the DEQ Level II SLV (see Appendix J-5c):
Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.
(2) Inorganics with maximum detected concentrations less than the site-specific reference area concentrations (aluminum, arsenic, barium, beryllium, chromium, cobalt, copper, lead, mercury, nickel, and vanadium) were not considered CPECs and are not evaluated.

Multiple COIs Simultaneously within a Given Medium
(3) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific.
Q = Receptor designator.
Nij = total number of *i* contaminants in medium *j* = 19.
Tj = sum of toxicity ratios for all contaminants in medium *j* = 8.52.
* Conservatively including both Aroclor 1254 and Total PCBs as Congeners.
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table N-70
Identification of Bioaccumulative CPECs in Tissue at Goose Island - Fish and Shellfish
Bradford Island - River Operable Unit
(1 of 3)

Tissue	Chemicals of Interest	IUPAC #	Max Detected Conc	CTLs for Fish & Shellfish Exposed to Tissue (1)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)							
Clam	Beryllium	-	0.00200	NA	- -	No	Yes - No SLV
Crayfish	Mercury	-	0.0359	0.088	0.408	Yes	No
PCB Congeners (ug/kg)							
Clam	3,3',4,4'-Tetrachlorobiphenyl	77	0.0337	430	0.0000784	Yes	No
Clam	2,3,3',4,4'-Pentachlorobiphenyl	105	0.352	430	0.000819	Yes	No
Clam	2,3,4,4',5-Pentachlorobiphenyl	114	0.0228	430	0.0000530	Yes	No
Clam	2,3',4,4',5-Pentachlorobiphenyl	118	1.59	430	0.00370	Yes	No
Clam	2,3',4,4',5'-Pentachlorobiphenyl	123	0.028	430	0.0000651	Yes	No
Clam	3,3',4,4',5-Pentachlorobiphenyl	126	0.00307	430	0.00000714	Yes	No
Clam	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.0969	430	0.000225	Yes	No
Clam	2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0925	430	0.000215	Yes	No
Clam	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.00157	430	0.00000365	Yes	No
Clam	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	21.4	430	0.0499	Yes	No
Clam	PCBs As Fish TEQ (KM, capped; NDs at MDL)	-	0.0000298	0.00640	0.00466	Yes	No
Crayfish	3,3',4,4'-Tetrachlorobiphenyl	77	0.00226	430	0.00000526	Yes	No
Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	105	0.00624	430	0.0000145	Yes	No
Crayfish	2,3,4,4',5-Pentachlorobiphenyl	114	0.00235	430	0.00000547	Yes	No
Crayfish	2,3',4,4',5-Pentachlorobiphenyl	118	0.0870	430	0.000202	Yes	No
Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	123	0.00256	430	0.00000595	Yes	No
Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.0133	430	0.0000309	Yes	No
Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0112	430	0.0000260	Yes	No
Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.000662	430	0.00000154	Yes	No
Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	0.587	430	0.00136	Yes	No
Crayfish	PCBs As Fish TEQ (KM, capped; NDs at MDL)	-	0.000000960	0.00640	0.000150	Yes	No
Sculpin	3,3',4,4'-Tetrachlorobiphenyl	77	0.00799	430	0.0000186	Yes	No
Sculpin	2,3,3',4,4'-Pentachlorobiphenyl	105	0.362	430	0.000842	Yes	No
Sculpin	2,3,4,4',5-Pentachlorobiphenyl	114	0.022	430	0.0000512	Yes	No
Sculpin	2,3',4,4',5-Pentachlorobiphenyl	118	0.872	430	0.00203	Yes	No
Sculpin	2,3',4,4',5'-Pentachlorobiphenyl	123	0.0163	430	0.0000379	Yes	No
Sculpin	3,3',4,4',5-Pentachlorobiphenyl	126	0.00315	430	0.00000733	Yes	No
Sculpin	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.106	430	0.000247	Yes	No
Sculpin	2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0348	430	0.0000809	Yes	No
Sculpin	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.00383	430	0.00000891	Yes	No

Table N-70
Identification of Bioaccumulative CPECs in Tissue at Goose Island - Fish and Shellfish
Bradford Island - River Operable Unit
(2 of 3)

Tissue	Chemicals of Interest	IUPAC #	Max Detected Conc	CTLs for Fish & Shellfish Exposed to Tissue (1)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
Sculpin	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	8.14	430	0.0189	Yes	No
Sculpin	PCBs As Fish TEQ (KM, capped; NDs at MDL)	-	0.0000238	0.00640	0.00371	Yes	No
SVOCs (ug/kg)							
Clam	p-cresol (4-Methylphenol)	-	29.0	NA	- -	Yes	**Yes - Bio - No SLV**
PAHs (ug/kg)							
Clam	Acenaphthene[4]	-	0.680	19,000	0.0000358	Yes	No
Clam	Anthracene[4]	-	1.20	19,000	0.0000632	Yes	No
Clam	Fluorene[4]	-	1.80	19,000	0.0000947	Yes	No
Clam	Phenanthrene[4]	-	10.0	19,000	0.000526	Yes	No
Clam	Benzo(a)anthracene[5]	-	3.40	1,000	0.00340	Yes	No
Clam	Benzo(a)pyrene[5]	-	0.750	1,000	0.000750	Yes	No
Clam	Benzo(b)fluoranthene[5]	-	2.20	1,000	0.00220	Yes	No
Clam	Benzo(g,h,i)perylene[5]	-	0.740	1,000	0.000740	Yes	No
Clam	Benzo(k)fluoranthene[5]	-	1.30	1,000	0.00130	Yes	No
Clam	Chrysene[5]	-	2.50	1,000	0.00250	Yes	No
Clam	Dibenz(a,h)anthracene[5]	-	0.480	1,000	0.000480	Yes	No
Clam	Fluoranthene	-	18.0	19,000	0.000947	Yes	No
Clam	Indeno(1,2,3-cd)pyrene[5]	-	0.890	1,000	0.000890	Yes	No
Clam	Pyrene	-	5.40	1,000	0.00540	Yes	No
Crayfish	Anthracene[4]	-	0.430	19,000	0.0000226	Yes	No
Crayfish	Fluorene[4]	-	0.510	19,000	0.0000268	Yes	No
Crayfish	Phenanthrene[4]	-	0.820	19,000	0.0000432	Yes	No
Crayfish	Benzo(b)fluoranthene[5]	-	0.150	1,000	0.000150	Yes	No
Crayfish	Benzo(g,h,i)perylene[5]	-	0.110	1,000	0.000110	Yes	No
Crayfish	Benzo(k)fluoranthene[5]	-	0.110	1,000	0.000110	Yes	No
Crayfish	Indeno(1,2,3-cd)pyrene[5]	-	0.150	1,000	0.000150	Yes	No
					Clam Sum R_{Bac}[6] = 0.0692 : 0.0240		
					Crayfish Sum R_{Bac}[6] = 0.410 : 0.409		
					Sculpin Sum R_{Bac}[6] = 0.0189 : 0.00371		

This table only includes COIs detected above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest

Table N-70
Identification of Bioaccumulative CPECs in Tissue at Goose Island - Fish and Shellfish
Bradford Island - River Operable Unit
(3 of 3)

Tissue	Chemicals of Interest	IUPAC #	Max Detected Conc	CTLs for Fish & Shellfish Exposed to Tissue (1)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)

CTL = critical tissue level (for fish)
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31 (see Appendix J-5d).
(2) Inorganics with maximum detected concentrations less than the site-specific reference 95% UPL concentration were not considered CPECs and are not evaluated.

Bioaccumulative COIs in a Given Media
(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*.
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
R_{Bac} = bioaccumulation index for an individual COI.
Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs.

(4) The SLV for Fluoranthene was used as a surrogate for the individual LPAHs without SLVs. Fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH; however, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH SLVs.
(5) The SLV for pyrene was used as a surrogate for the individual HPAHs without SLVs.
(6) The Sum R_{Bac} is the sum of the individual R_{Bac}. Two ways of calculating Sum R_{Bac}; Total PCBs as Congeners, individual metals, SVOCs, and PAHs : PCBs as Fish TEQs, individual metals, SVOCs, and PAHs.

Table N-71
Identification of Bioaccumulative CPECs in Sediment at Goose Island - Fish
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	IUPAC #	Max Detected Conc	SLVs for Freshwater Fish Exposed to Sediment (1)	Toxicity Ratio for Fish (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (2)
INORGANICS (mg/kg)						
Aluminum	-	Sed ≤ to Reference Area (see Table L-7)			Yes	No
Barium	-	Sed ≤ to Reference Area (see Table L-7)			No	No
Beryllium	-	Sed ≤ to Reference Area (see Table L-7)			No	No
Copper	-	Sed ≤ to Reference Area (see Table L-7)			No	No
Mercury	-	Sed ≤ to Reference Area (see Table L-7)			Yes	No
Zinc	-	148	106	1.40	Yes	**Yes**
PCB Aroclors (ug/kg)						
Aroclor 1254	-	9.90	22.0	0.450	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	-	12.6	22.0	0.573	Yes	**Yes**
PCB Congeners (ug/kg)						
2,3,3',4,4'-Pentachlorobiphenyl	105	0.0277	62.0	0.000447	Yes	No
2,3,4,4',5-Pentachlorobiphenyl	114	0.00137	65.0	0.0000211	Yes	No
2,3',4,4',5-Pentachlorobiphenyl	118	0.0695	79.0	0.000880	Yes	No
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.0104	79.0	0.000132	Yes	No
2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.00402	79.0	0.0000509	Yes	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	1.34	22.0	0.0609	Yes	No
PCBs As Fish TEQ (KM, capped; NDs at MDL)	-	0.00000104	0.000560	0.00186	Yes	No
SVOCs (ug/kg)						
Bis(2-ethylhexyl) Phthalate	-	13.0	NA	- -	Yes	**Yes - Bio - No SLV**
p-cresol (4-Methylphenol)	-	8.50	NA	- -	Yes	**Yes - Bio - No SLV**
				Sum R_{Bac}^3 = 1.97 : 1.46 : 1.40		

This table only includes the CPECs from Goose Island Tissue - Fish and Shellfish (Table N-70) and Smallmouth Bass CPECs from Random Forebay Tissue - Fish and Shellfish (Table N-51

CPEC = chemical of potential ecological concern

COI = chemical of interest

KM, capped = Kaplan–Meier-based with Efron's bias correction, capped

MDL = method detection limit

NA = not available

ND = non detect

SLV = screening level value

Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV

- - = not applicable

Table N-71
Identification of Bioaccumulative CPECs in Sediment at Goose Island - Fish
Bradford Island - River Operable Unit
(2 of 2)

(1) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative freshwater fish SLVs from (see Appendix J-5c):
Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31.

Bioaccumulative COIs in a Given Media

(2) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where $R_{Bac} = Cij/SLVij$, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*.

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI.

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs.

(3) The Sum R_{Bac} is the sum of the individual R_{Bac}. Three ways of calculating Sum R_{Bac}; Total PCBs as Aroclors, individual metals, and SVOCs : Total PCBs as Congeners, individual metals, and SVOCs : PCBs as Fish TEQs, individual metals, and SVOCs.

Table N-72
Identification of Bioaccumulative CPECs in Tissue at Goose Island - Birds (Individual)
Bradford Island - River Operable Unit
(1 of 2)

Medium	Chemicals of Interest	IUPAC #	Max Detected Conc	ATLs for Individual Birds Exposed to Tissue (1)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg) (2)							
Crayfish	Mercury	-	0.0359	0.074	0.485	Yes	No
PCB Congeners (ug/kg)							
Crayfish	3,3',4,4'-Tetrachlorobiphenyl	77	0.00226	0.16	0.0141	Yes	No
Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	105	0.00624	80	0.0000780	Yes	No
Crayfish	2,3,4,4',5-Pentachlorobiphenyl	114	0.00235	800	0.00000294	Yes	No
Crayfish	2,3',4,4',5-Pentachlorobiphenyl	118	0.0870	800	0.000109	Yes	No
Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	123	0.00256	800	0.00000320	Yes	No
Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.0133	80	0.000166	Yes	No
Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0112	800	0.0000140	Yes	No
Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.000662	800	0.000000828	Yes	No
Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	0.587	35	0.0168	Yes	No
Crayfish	PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.000117	0.019	0.00614	Yes	No
Sculpin	3,3',4,4'-Tetrachlorobiphenyl	77	0.00799	0.16	0.0499	Yes	No
Sculpin	2,3,3',4,4'-Pentachlorobiphenyl	105	0.362	80	0.00453	Yes	No
Sculpin	2,3,4,4',5-Pentachlorobiphenyl	114	0.022	800	0.0000275	Yes	No
Sculpin	2,3',4,4',5-Pentachlorobiphenyl	118	0.872	800	0.00109	Yes	No
Sculpin	2,3',4,4',5'-Pentachlorobiphenyl	123	0.0163	800	0.0000204	Yes	No
Sculpin	3,3',4,4',5-Pentachlorobiphenyl	126	0.00315	0.08	0.0394	Yes	No
Sculpin	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.106	80	0.00133	Yes	No
Sculpin	2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0348	800	0.0000435	Yes	No
Sculpin	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.00383	800	0.00000479	Yes	No
Sculpin	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	8.14	35	0.233	Yes	No
Sculpin	PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.000780	0.019	0.0410	Yes	No
PAHs (ug/kg)							
Crayfish	Anthracene	-	0.430	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Fluorene	-	0.510	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Phenanthrene	-	0.820	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(b)fluoranthene	-	0.150	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(g,h,i)perylene	-	0.110	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(k)fluoranthene	-	0.110	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Indeno(1,2,3-cd)pyrene	-	0.150	NA	- -	Yes	**Yes - Bio - No SLV**
					Crayfish Sum R_{Bac}^4 = 0.502 : 0.491		
					Sculpin Sum R_{Bac}^4 = 0.233 : 0.0410		

Table N-72
Identification of Bioaccumulative CPECs in Tissue at Goose Island - Birds (Individual)
Bradford Island - River Operable Unit
(2 of 2)

This table only includes COIs detected above the reference area (metals only).
ATL = acceptable tissue level
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
- - = not applicable

(1) DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31 (see Appendix J-5d).
(2) Inorganics with maximum detected concentrations less than the site-specific reference 95% UPL concentration were not considered CPECs and are not evaluated.

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where $R_{Bac} = Cij/SLVij$, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*.
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .
R_{Bac} = bioaccumulation index for an individual COI.
Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs.

(4) The Sum R_{Bac} is the sum of the individual R_{Bac}. Two ways of calculating Sum R_{Bac}; Total PCBs as Congeners, individual metals, and PAHs : PCBs as Avian TEQs, individual metals, and

Table N-73
Identification of Bioaccumulative CPECs in Tissue at Goose Island - Birds (Population)
Bradford Island - River Operable Unit
(1 of 2)

Medium	Chemicals of Interest	IUPAC #	Max Detected Conc	ATLs for Bird Populations Exposed to Tissue (1)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg) (2)							
Crayfish	Mercury	-	0.0359	0.15	0.239	Yes	No
PCB Congeners (ug/kg)							
Crayfish	3,3',4,4'-Tetrachlorobiphenyl	77	0.00226	0.80	0.00283	Yes	No
Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	105	0.00624	400	0.0000156	Yes	No
Crayfish	2,3,4,4',5-Pentachlorobiphenyl	114	0.00235	4,000	0.000000588	Yes	No
Crayfish	2,3',4,4',5-Pentachlorobiphenyl	118	0.0870	4,000	0.0000218	Yes	No
Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	123	0.00256	4,000	0.000000640	Yes	No
Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.0133	400	0.0000333	Yes	No
Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0112	4,000	0.00000280	Yes	No
Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.000662	4,000	0.000000166	Yes	No
Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	0.587	1,800	0.000326	Yes	No
Crayfish	PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.000117	0.0400	0.00292	Yes	No
Sculpin	3,3',4,4'-Tetrachlorobiphenyl	77	0.00799	0.80	0.00999	Yes	No
Sculpin	2,3,3',4,4'-Pentachlorobiphenyl	105	0.362	400	0.000905	Yes	No
Sculpin	2,3,4,4',5-Pentachlorobiphenyl	114	0.022	4,000	0.00000550	Yes	No
Sculpin	2,3',4,4',5-Pentachlorobiphenyl	118	0.872	4,000	0.000218	Yes	No
Sculpin	2,3',4,4',5'-Pentachlorobiphenyl	123	0.0163	4,000	0.00000408	Yes	No
Sculpin	3,3',4,4',5-Pentachlorobiphenyl	126	0.00315	0.40	0.00788	Yes	No
Sculpin	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.106	400	0.000265	Yes	No
Sculpin	2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0348	4,000	0.00000870	Yes	No
Sculpin	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.00383	4,000	0.000000958	Yes	No
Sculpin	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	8.14	1,800	0.00452	Yes	No
Sculpin	PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.000780	0.0400	0.0195	Yes	No
PAHs (ug/kg)							
Crayfish	Anthracene	-	0.430	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Fluorene	-	0.510	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Phenanthrene	-	0.820	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(b)fluoranthene	-	0.150	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(g,h,i)perylene	-	0.110	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Benzo(k)fluoranthene	-	0.110	NA	- -	Yes	**Yes - Bio - No SLV**
Crayfish	Indeno(1,2,3-cd)pyrene	-	0.150	NA	- -	Yes	**Yes - Bio - No SLV**
					Crayfish Sum R_{Bac}[4] =	0.240 : 0.242	
					Sculpin Sum R_{Bac}[4] =	0.00452 : 0.0195	

Table N-73
Identification of Bioaccumulative CPECs in Tissue at Goose Island - Birds (Population)
Bradford Island - River Operable Unit
(2 of 2)

This table only includes COIs detected above the reference area (metals only).
ATL = acceptable tissue level
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
- - = not applicable

(1) DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31 (see Appendix J-5d).
(2) Inorganics with maximum detected concentrations less than the site-specific reference 95% UPL concentration were not considered CPECs and are not evaluated.

Bioaccumulative COIs in a Given Media
(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where $R_{Bac} = Cij/SLVij$, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*.
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
R_{Bac} = bioaccumulation index for an individual COI.
Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs.

(4) The Sum R_{Bac} is the sum of the individual R_{Bac}. Two ways of calculating Sum R_{Bac}; Total PCBs as Congeners, individual metals, and PAHs : PCBs as Avian TEQs, individual metals, and PAHs.

Table N-74
Identification of Bioaccumulative CPECs in Sediment at Goose Island - Birds (Individual)
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	IUPAC #	Max Detected Conc	SLVs for Individual Birds Exposed to Sediment (1)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (2)
INORGANICS (mg/kg)						
Aluminum	-	Sed ≤ to Reference Area (see Table L-7)			Yes	No
Barium	-	Sed ≤ to Reference Area (see Table L-7)			No	No
Copper	-	Sed ≤ to Reference Area (see Table L-7)			No	No
Mercury	-	Sed ≤ to Reference Area (see Table L-7)			Yes	No
Zinc	-	148	106	1.40	Yes	**Yes**
PCB Aroclors (ug/kg)						
Aroclor 1254	-	9.90	1.80	5.50	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	-	12.6	1.80	7.00	Yes	**Yes**
PCB Congeners (ug/kg)						
3,3',4,4'-Tetrachlorobiphenyl	77	0.00353	0.00800	0.441	Yes	**Yes**
3,4,4',5-Tetrachlorobiphenyl	81	0.000135	0.00400	0.0338	Yes	No
2,3,3',4,4'-Pentachlorobiphenyl	105	0.0277	3.90	0.00710	Yes	No
2,3',4,4',5-Pentachlorobiphenyl	118	0.0695	49.0	0.00142	Yes	No
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.0104	4.9	0.00212	Yes	No
2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.00402	49.0	0.0000820	Yes	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	1.34	1.80	0.745	Yes	**Yes**
PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.000183	0.00170	0.107	Yes	**Yes**
SVOCs (ug/kg)						
Di-n-butyl Phthalate	-	10.0	NA	- -	Yes	**Yes - Bio - No SLV**
PAHs (ug/kg)						
Phenanthrene	-	4.60	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(a)anthracene	-	7.80	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(a)pyrene	-	13.0	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(b)fluoranthene	-	15.0	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(g,h,i)perylene	-	9.90	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(k)fluoranthene	-	4.10	NA	- -	Yes	**Yes - Bio - No SLV**
Chrysene	-	11.0	NA	- -	Yes	**Yes - Bio - No SLV**
Fluoranthene	-	9.60	NA	- -	Yes	**Yes - Bio - No SLV**
Indeno(1,2,3-cd)pyrene	-	7.10	NA	- -	Yes	**Yes - Bio - No SLV**
Pyrene	-	8.80	NA	- -	Yes	**Yes - Bio - No SLV**
Sum $R_{Bac}{}^3$ = 8.40 : 2.14 : 1.50						

Table N-74
Identification of Bioaccumulative CPECs in Sediment at Goose Island - Birds (Individual)
Bradford Island - River Operable Unit
(2 of 2)

This table only includes the CPECs from the Goose Island Tissue - Bird (Individual) (Table N-72) and Smallmouth Bass CPECs from Forebay Tissue - Bird (Individual) (Table N-53).
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative bird (individual) SLVs from (see Appendix J-5c):
Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31.

Bioaccumulative COIs in a Given Media

(2) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(3) The Sum R_{Bac} is the sum of the individual R_{Bac}. Three ways of calculating Sum R_{Bac}; Total PCBs as Aroclors, individual metals, SVOCs, and PAHs : Total PCBs as Congeners, individual metals, SVOCs, and PAHs : PCBs as Avian TEQs, individual metals, SVOCs, and PAHs.

Table N-75
Identification of Bioaccumulative CPECs in Sediment at Goose Island - Birds (Population)
Bradford Island - River Operable Unit
(1 of 2)

Chemicals of Interest	IUPAC #	Max Detected Conc	SLVs for Bird Populations Exposed to Sediment (1)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (2)
INORGANICS (mg/kg)						
Aluminum	-	Sed ≤ to Reference Area (see Table L-7)			Yes	No
Barium	-	Sed ≤ to Reference Area (see Table L-7)			No	No
Copper	-	Sed ≤ to Reference Area (see Table L-7)			No	No
Mercury	-	Sed ≤ to Reference Area (see Table L-7)			Yes	No
Zinc	-	148	106	1.40	Yes	**Yes**
PCB Aroclors (ug/kg)						
Aroclor 1254	-	9.90	91.0	0.109	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	-	12.6	91.0	0.138	Yes	**Yes**
PCB Congeners (ug/kg)						
3,3',4,4'-Tetrachlorobiphenyl	77	0.00353	0.040	0.0883	Yes	No
3,4,4',5-Tetrachlorobiphenyl	81	0.000135	0.020	0.00675	Yes	No
2,3,3',4,4'-Pentachlorobiphenyl	105	0.0277	19.0	0.00146	Yes	No
2,3',4,4',5-Pentachlorobiphenyl	118	0.0695	240	0.000290	Yes	No
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.0104	24.0	0.000433	Yes	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	1.34	91.0	0.0147	Yes	No
PCBs As Avian TEQ (KM, capped; NDs at MDL)	-	0.000183	0.00350	0.0522	Yes	No
SVOCs (ug/kg)						
Di-n-butyl Phthalate	-	10.0	NA	- -	Yes	**Yes - Bio - No SLV**
PAHs (ug/kg)						
Phenanthrene	-	4.60	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(a)anthracene	-	7.80	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(a)pyrene	-	13.0	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(b)fluoranthene	-	15.0	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(g,h,i)perylene	-	9.90	NA	- -	Yes	**Yes - Bio - No SLV**
Benzo(k)fluoranthene	-	4.10	NA	- -	Yes	**Yes - Bio - No SLV**
Chrysene	-	11.0	NA	- -	Yes	**Yes - Bio - No SLV**
Fluoranthene	-	9.60	NA	- -	Yes	**Yes - Bio - No SLV**
Indeno(1,2,3-cd)pyrene	-	7.10	NA	- -	Yes	**Yes - Bio - No SLV**
Pyrene	-	8.80	NA	- -	Yes	**Yes - Bio - No SLV**
				Sum $R_{Bac}{}^{3}$ = 1.53 : 1.41 : 1.45		

This table only includes the CPECs from the Goose Island Tissue - Bird (Population) (Table N-73) and Smallmouth Bass CPECs from Forebay Tissue - Bird (Population) (Table N-54).

Table N-75
Identification of Bioaccumulative CPECs in Sediment at Goose Island - Birds (Population)
Bradford Island - River Operable Unit
(2 of 2)

CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

(1) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative bird (population) SLVs from (see Appendix J-5c):
Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31.

Bioaccumulative COIs in a Given Media

(2) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where $R_{Bac} = Cij/SLVij$, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*.

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI.

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs.

(3) The Sum R_{Bac} is the sum of the individual R_{Bac}. Three ways of calculating Sum R_{Bac}; Total PCBs as Aroclors, individual metals, and PAHs : Total PCBs as Congeners, individual metals, and PAHs : PCBs as Avian TEQs, individual metals, and PAHs.

Table N-76
Identification of Bioaccumulative CPECs in Tissue at Goose Island - Mammals (Individual)
Bradford Island - River Operable Unit
(1 of 2)

Medium	Chemicals of Interest	IUPAC #	Max Detected Conc	ATLs for Individual Mammals Exposed to Tissue (1)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg) (2)							
Crayfish	Mercury	-	0.0359	0.12	0.299	Yes	No
PCB Congeners (ug/kg)							
Crayfish	3,3',4,4'-Tetrachlorobiphenyl	77	0.00226	5.8	0.000390	Yes	No
Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	105	0.00624	20	0.000312	Yes	No
Crayfish	2,3,4,4',5-Pentachlorobiphenyl	114	0.00235	20	0.000118	Yes	No
Crayfish	2,3',4,4',5-Pentachlorobiphenyl	118	0.0870	20	0.00435	Yes	No
Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	123	0.00256	20	0.000128	Yes	No
Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.0133	20	0.000665	Yes	No
Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0112	20	0.000560	Yes	No
Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.000662	20	0.0000331	Yes	No
Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	0.587	880	0.000667	Yes	No
Crayfish	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.00000482	0.000580	0.00831	Yes	No
Sculpin	3,3',4,4'-Tetrachlorobiphenyl	77	0.00799	5.8	0.00138	Yes	No
Sculpin	2,3,3',4,4'-Pentachlorobiphenyl	105	0.362	20	0.0181	Yes	No
Sculpin	2,3,4,4',5-Pentachlorobiphenyl	114	0.022	20	0.00110	Yes	No
Sculpin	2,3',4,4',5-Pentachlorobiphenyl	118	0.872	20	0.0436	Yes	No
Sculpin	2,3',4,4',5'-Pentachlorobiphenyl	123	0.0163	20	0.000815	Yes	No
Sculpin	3,3',4,4',5-Pentachlorobiphenyl	126	0.00315	0.0058	0.543	Yes	No
Sculpin	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.106	20	0.00530	Yes	No
Sculpin	2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0348	20	0.00174	Yes	No
Sculpin	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.00383	20	0.000192	Yes	No
Sculpin	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	8.14	880	0.00925	Yes	No
Sculpin	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.000363	0.000580	0.626	Yes	No
PAHs (ug/kg)							
Crayfish	Anthracene[4]	-	0.430	190,000	0.00000226	Yes	No
Crayfish	Fluorene[4]	-	0.510	190,000	0.00000268	Yes	No
Crayfish	Phenanthrene[4]	-	0.820	190,000	0.00000432	Yes	No
Crayfish	Benzo(b)fluoranthene[5]	-	0.150	9,500,000	0.0000000158	Yes	No
Crayfish	Benzo(g,h,i)perylene[5]	-	0.110	9,500,000	0.0000000116	Yes	No
Crayfish	Benzo(k)fluoranthene[5]	-	0.110	9,500,000	0.0000000116	Yes	No
Crayfish	Indeno(1,2,3-cd)pyrene[5]	-	0.150	9,500,000	0.0000000158	Yes	No
					Crayfish Sum R_{Bac}[6] = 0.309 : 0.307		
					Sculpin Sum R_{Bac}[6] = 0.00925 : 0.626		

Table N-76
Identification of Bioaccumulative CPECs in Tissue at Goose Island - Mammals (Individual)
Bradford Island - River Operable Unit
(2 of 2)

This table only includes COIs detected above the reference area (metals only).
ATL = acceptable tissue level
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
- - = not applicable

(1) DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31 (see Appendix J-5d).
(2) Inorganics with maximum detected concentrations less than the site-specific reference 95% UPL concentration were not considered CPECs and are not evaluated.

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*.

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.

R_{Bac} = bioaccumulation index for an individual COI.

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs.

(4) The SLV for Fluoranthene was used as a surrogate for the individual LPAHs without SLVs. Fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH; however, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH SLVs.
(5) The SLV for pyrene was used as a surrogate for the individual HPAHs without SLVs.
(6) The Sum R_{Bac} is the sum of the individual R_{Bac}. Two ways of calculating Sum R_{Bac}; Total PCBs as Congeners, individual metals, and PAHs : PCBs as Mammal TEQs, individual metals, and

Table N-77
Identification of Bioaccumulative CPECs in Tissue at Goose Island - Mammals (Population)
Bradford Island - River Operable Unit
(1 of 2)

Medium	Chemicals of Interest	IUPAC #	Max Detected Conc	ATLs for Bird Populations Exposed to Tissue (1)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg) (2)							
Crayfish	Mercury	-	0.0359	0.20	0.180	Yes	No
PCB Congeners (ug/kg)							
Crayfish	3,3',4,4'-Tetrachlorobiphenyl	77	0.00226	160	0.0000141	Yes	No
Crayfish	2,3,3',4,4'-Pentachlorobiphenyl	105	0.00624	540	0.0000116	Yes	No
Crayfish	2,3,4,4',5-Pentachlorobiphenyl	114	0.00235	540	0.00000435	Yes	No
Crayfish	2,3',4,4',5-Pentachlorobiphenyl	118	0.0870	540	0.000161	Yes	No
Crayfish	2,3',4,4',5'-Pentachlorobiphenyl	123	0.00256	540	0.00000474	Yes	No
Crayfish	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.0133	540	0.0000246	Yes	No
Crayfish	2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0112	540	0.0000207	Yes	No
Crayfish	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.000662	540	0.00000123	Yes	No
Crayfish	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	0.587	1,700	0.000345	Yes	No
Crayfish	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.00000482	0.0160	0.000301	Yes	No
Sculpin	3,3',4,4'-Tetrachlorobiphenyl	77	0.00799	160	0.0000499	Yes	No
Sculpin	2,3,3',4,4'-Pentachlorobiphenyl	105	0.362	540	0.000670	Yes	No
Sculpin	2,3,4,4',5-Pentachlorobiphenyl	114	0.022	540	0.0000407	Yes	No
Sculpin	2,3',4,4',5-Pentachlorobiphenyl	118	0.872	540	0.00161	Yes	No
Sculpin	2,3',4,4',5'-Pentachlorobiphenyl	123	0.0163	540	0.0000302	Yes	No
Sculpin	3,3',4,4',5-Pentachlorobiphenyl	126	0.00315	0.16	0.0197	Yes	No
Sculpin	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.106	540	0.000196	Yes	No
Sculpin	2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.0348	540	0.0000644	Yes	No
Sculpin	2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.00383	540	0.00000709	Yes	No
Sculpin	Total PCBs As Congeners (KM, capped; NDs at MDL)	-	8.14	1,700	0.00479	Yes	No
Sculpin	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.000363	0.0160	0.0227	Yes	No
PAHs (ug/kg)							
Crayfish	Anthracene[4]	-	0.430	950,000	0.000000453	Yes	No
Crayfish	Fluorene[4]	-	0.510	950,000	0.000000537	Yes	No
Crayfish	Phenanthrene[4]	-	0.820	950,000	0.000000863	Yes	No
Crayfish	Benzo(b)fluoranthene[5]	-	0.150	47,000,000	0.00000000319	Yes	No
Crayfish	Benzo(g,h,i)perylene[5]	-	0.110	47,000,000	0.00000000234	Yes	No
Crayfish	Benzo(k)fluoranthene[5]	-	0.110	47,000,000	0.00000000234	Yes	No
Crayfish	Indeno(1,2,3-cd)pyrene[5]	-	0.150	47,000,000	0.00000000319	Yes	No
					Crayfish Sum R_{Bac}[6] = 0.180	0.180	
					Sculpin Sum R_{Bac}[6] = 0.00479	0.0227	

Table N-77
Identification of Bioaccumulative CPECs in Tissue at Goose Island - Mammals (Population)
Bradford Island - River Operable Unit
(2 of 2)

This table only includes COIs detected above the reference area (metals only).
ATL = acceptable tissue level
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
- - = not applicable

(1) DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31 (see Appendix J-5d).
(2) Inorganics with maximum detected concentrations less than the site-specific reference 95% UPL concentration were not considered CPECs and are not evaluated.

Bioaccumulative COIs in a Given Media

(3) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where R_{Bac} = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*.

SLVij = Level II Screening Level Value from DEQ for contaminant*i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI.

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs.

(4) The SLV for Fluoranthene was used as a surrogate for the individual LPAHs without SLVs. Fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH; however, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH SLVs.
(5) The SLV for pyrene was used as a surrogate for the individual HPAHs without SLVs.
(6) The Sum R_{Bac} is the sum of the individual R_{Bac}. Two ways of calculating Sum R_{Bac}; Total PCBs as Congeners, individual metals, and PAHs : PCBs as Mammal TEQs, individual metals, and PAHs.

Table N-78
Identification of Bioaccumulative CPECs in Sediment at Goose Island - Mammals (Individual)
Bradford Island - River Operable Unit
(1 of 2)

Chemical of Interest	IUPAC #	Max Detected Conc	SLVs for Individual Mammals Exposed to Sediment (1)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (2)
INORGANICS (mg/kg)						
Aluminum	-	Sed ≤ to Reference Area (see Table L-7)			Yes	No
Barium	-	Sed ≤ to Reference Area (see Table L-7)			No	No
Copper	-	Sed ≤ to Reference Area (see Table L-7)			No	No
Mercury	-	Sed ≤ to Reference Area (see Table L-7)			Yes	No
Zinc	-	148	106	1.40	Yes	**Yes**
PCB Aroclors (ug/kg)						
Aroclor 1254	-	9.90	44.0	0.225	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	-	12.6	44.0	0.286	Yes	**Yes**
PCB Congeners (ug/kg)						
3,3',4,4'-Tetrachlorobiphenyl	77	0.00353	0.300	0.0118	Yes	No
3,4,4',5-Tetrachlorobiphenyl	81	0.000135	0.0980	0.00138	Yes	No
2,3,3',4,4'-Pentachlorobiphenyl	105	0.0277	0.940	0.0295	Yes	No
2,3,4,4',5-Pentachlorobiphenyl	114	0.00137	0.980	0.00140	Yes	No
2,3',4,4',5-Pentachlorobiphenyl	118	0.0695	1.20	0.0579	Yes	No
2,3',4,4',5'-Pentachlorobiphenyl	123	0.000963	1.20	0.000803	Yes	No
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.0104	1.20	0.00867	Yes	No
2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.00402	1.20	0.00335	Yes	No
2,3,3',4,4',5,5'-Heptachlorobiphenyl	189	0.000869	6.60	0.000132	Yes	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	1.34	44.0	0.0305	Yes	No
PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.00000467	0.0000520	0.0898	Yes	No
				Sum R_{Bac}^{3} = 1.68 : 1.43 : 1.49		

This table only includes the CPECs from the Goose Island Tissue - Mammal (Individual) (Table N-76) and Smallmouth Bass CPECs from Forebay Tissue - Mammal (Individual) (Table N-57).
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
UCL = upper confidence limit on the mean

Table N-78
Identification of Bioaccumulative CPECs in Sediment at Goose Island - Mammals (Individual)
Bradford Island - River Operable Unit
(2 of 2)

- - = not applicable

(1) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative mammalian (individual) SLVs from (see Appendix J-5c):
Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31.

Bioaccumulative COIs in a Given Media

(2) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where $R_{Bac} = Cij/SLVij$, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*.

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI.

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs.

(3) The Sum R_{Bac} is the sum of the individual R_{Bac}. Three ways of calculating Sum R_{Bac}; Total PCBs as Aroclors and individual metals : Total PCBs as Congeners and individual metals : PCBs as Mammal TEQs and individual metals.

Table N-79
Identification of Bioaccumulative CPECs in Sediment at Goose Island - Mammals (Population)
Bradford Island - River Operable Unit
(1 of 2)

Chemical of Interest	IUPAC #	Max Detected Conc	SLVs for Mammal Populations Exposed to Sediment (1)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	COI is Identified as a Bioaccumulative CPEC? (2)
INORGANICS (mg/kg)						
Aluminum	-	Sed ≤ to Reference Area (see Table L-7)			Yes	No
Barium	-	Sed ≤ to Reference Area (see Table L-7)			No	No
Copper	-	Sed ≤ to Reference Area (see Table L-7)			No	No
Mercury	-	Sed ≤ to Reference Area (see Table L-7)			Yes	No
Zinc	-	148	106	1.40	Yes	**Yes**
PCB Aroclors (ug/kg)						
Aroclor 1254	-	9.90	84.0	0.118	Yes	**Yes**
Total PCBs As Aroclors (NDs at MDL)	-	12.6	84.0	0.150	Yes	**Yes**
PCB Congeners (ug/kg)						
2,3,3',4,4'-Pentachlorobiphenyl	105	0.0277	26.0	0.00107	Yes	No
2,3,4,4',5-Pentachlorobiphenyl	114	0.00137	27.0	0.0000507	Yes	No
2,3',4,4',5-Pentachlorobiphenyl	118	0.0695	33.0	0.00211	Yes	No
2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	156 + 157	0.0104	33.0	0.000315	Yes	No
2,3',4,4',5,5'-Hexachlorobiphenyl	167	0.00402	33.0	0.000122	Yes	No
Total PCBs As Congeners (KM, capped; NDs at MDL)	-	1.34	84,000	0.0000160	Yes	No
PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	-	0.00000467	0.00140	0.00333	Yes	No
				Sum R_{Bac}^{3} = 1.55 : 1.40 : 1.40		

This table only includes the CPECs from the Goose Island Tissue - Mammal (Population) (Table N-77) and Smallmouth Bass CPECs from Forebay Tissue - Mammal (Population) (Table N-58).
CPEC = chemical of potential ecological concern
COI = chemical of interest
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
UCL = upper confidence limit on the mean
- - = not applicable

(1) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative mammalian (population) SLVs from (see Appendix J-5c):
Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. January 31.

Table N-79
Identification of Bioaccumulative CPECs in Sediment at Goose Island - Mammals (Population)
Bradford Island - River Operable Unit
(2 of 2)

Bioaccumulative COIs in a Given Media

(2) Any individual COI in any given media with $R_{Bac} > 0.1$ and Sum $R_{Bac} > 1$, where $R_{Bac} = Cij/SLVij$, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(3) The Sum R_{Bac} is the sum of the individual R_{Bac}. Three ways of calculating Sum R_{Bac}; Total PCBs as Aroclors and individual metals : Total PCBs as Congeners and individual metals : PCBs as Mammal TEQs and individual metals.

Table N-80
Summary of Forebay CPECs for Benthic Community, Fish and Shellfish
Bradford Island - River Operable Unit
(1 of 1)

Group	Benthic Community [a]	Clams	Crayfish	Sculpin	Smallmouth Bass
Metals	none	Cadmium	No CPECs	Cadmium, Lead, and Mercury	Mercury
PCBs	Aroclors 1254 and 1248 [b] and Total PCBs as Aroclors [b]	Total PCBs as Congeners		Aroclor 1254* and Total PCBs as Aroclors*	Aroclors 1242 and 1254*; and Total PCBs as Aroclors*
				PCBs 105, 118, 156+157,Total PCBs as Congeners, and fish PCB TEQ	PCBs 105, 114, 118, 156+157, 167, Total PCBs as Congeners, and fish PCB TEQ
SVOCs	none	Bis(2-ethylhexyl) Phthalate		not enough tissue for analysis	Bis(2-ethylhexyl) Phthalate* and Butyl Benzyl Phthalate

* Also identified as CPECs in Forebay sediment.
[a] CPECs identified for benthic community based on evaluation of direct toxicity from exposure to sediment. CPECs for clams, crayfish, sculpin, and smallmouth bass based on evaluation of exposure through dietary pathway (i.e., evaluation of species-specific tissue data).
[b] Eagle Creek sediment only.

Table N-81
Summary of Forebay CPECs for Birds
Bradford Island - River Operable Unit
(1 of 1)

Group	Individual-Level CPEC for Birds			Population-Level CPEC for Birds		
	Crayfish	**Sculpin**	**Smallmouth Bass**	**Crayfish**	**Sculpin**	**Smallmouth Bass**
Metals	Mercury	Mercury	Mercury	No CPECs	Mercury	Mercury
PCBs	Total PCBs as Congeners*	Aroclors 1254* and Total PCBs as Aroclors*	Aroclors 1242 and 1254*, and Total PCBs as Aroclors*		Aroclors 1254 and Total PCBs as Aroclors	Aroclors 1242 and 1254, and Total PCBs as Aroclors
		PCBs 77*, 105, 118, 126, 156+157, Total PCBs as Congeners*, and avain PCB TEQ	PCBs 77*, 81, 105, 118, 126, 156+157, 167, Total PCBs as Congeners*, and avain PCB TEQ		PCBs 77, 105, 118, 156+157, Total PCBs as Congeners, and avain PCB TEQ	PCBs 77, 81, 105, 118, 126, 156+157, Total PCBs as Congeners, and avain PCB TEQ
SVOCs	not enough tissue for analysis	not enough tissue for analysis	Di-n-butyl phthalate		not enough tissue for analysis	none

* Also identified as CPECs in Forebay sediment

Table N-82
Summary of Forebay CPECs for Mammals
Bradford Island - River Operable Unit
(1 of 1)

Group	Individual-Level CPEC for Mammals			Population-Level CPEC for Mammals		
	Crayfish	**Sculpin**	**Smallmouth Bass**	**Crayfish**	**Sculpin**	**Smallmouth Bass**
Metals	PCBs 118, 126, 156+157, mammalian PCB TEQ	Mercury	Mercury	No CPECs	Mercury	Mercury
PCBs		Aroclor 1254 and Total PCBs as Aroclors	Aroclors 1242 and 1254; and Total PCBs as Aroclors		Aroclor 1254 and Total PCBs as Aroclors	Aroclors 1242 and 1254; and Total PCBs as Aroclors
		PCBs 105*, 114, 118*, 123, 126*, 156+157*, 167, 169, Total PCBs as Congeners, and mammalian PCB TEQ*	PCBs 77, 81, 105*, 114, 118*, 123, 126*, 156+157*, 167, 189, Total PCBs as Congeners, and mammalian PCB TEQ*		PCBs 105, 118, 126, 156+157, Total PCBs as Congeners, and mammalian PCB TEQ	PCBs 105, 114, 118, 126, 156+157, 167, Total PCBs as Congeners, and mammalian PCB TEQ

* Also identified as CPECs in Forebay sediment

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Uncertainties are inherent in any risk-based approach to evaluation and decision-making for potentially contaminated sites. The uncertainties may be general and systemic as well as specific to the site. The objective of the uncertainty assessment is to identify the sources of uncertainty in the risk assessment (RA) process, understand their potential to contribute to either underestimation or overestimation of risk for the selected receptors and pathways and describe how the uncertainty is addressed. By describing the nature and magnitude of the uncertainties, the findings and conclusions of the RA can be better understood and used as a tool for decision-making.

Both the human health risk assessment (HHRA) and ecological risk assessment (ERA) use essentially the same process for chemicals of potential concern (COPCs) identification, or chemicals of potential ecological concern (CPECs), and screening level risk evaluation. The process includes 4 elements: compilation of useable analytical data, identification of receptors and exposure pathways, selection and application of media-specific screening level values (SLVs), and identification of COPCs and CPECs from the broader list of chemicals of interest (COIs) that were analyzed. Therefore, some uncertainties are common to both the HHRA and the ERA. These uncertainties are described first followed by more extensive discussion of uncertainties that apply specifically to either the HHRA or ERA.

O.1 Uncertainties Common to the HHRA and ERA

The sources of uncertainty that are common to the HHRA and ERA include issues related to data quality, estimation of exposure point concentrations (EPCs), and the selection and application of SLVs to identify COPCs. For simplicity, the term COPCs is used in reference to both the HHRA and ERA in this section. The uncertainties common to the HHRA and ERA that are not specific to the Upland or River Operable Units (OUs) are in Section O.1.1, and those that are OU-specific are described in Sections O.1.2 and O.1.3.

O.1.1 Upland and River OUs

O.1.1.1 Data Adequacy and Data Quality

Section 7.0 of the main remedial investigation (RI) text provides a thorough evaluation of the adequacy and quality of the data used in the Upland and River OU RAs. Specifically, the following elements were assessed for each data set included in the RAs:

- Sample size
- J-flagged Data
- Variable method detection limits (MDLs) and method reporting limits (MRLs)
- MDLs of undetected data (U-flagged) greater than SLVs
- MRLs of undetected (U-flagged) and estimated (J-flagged) data greater than SLVs
- Analytes without SLVs

The findings of the data adequacy and quality evaluations are described in detail in Section 7.0. In summary, the majority of sample sizes for each analyte measured in media of the Upland and River OUs are considered to be sufficient for their intended uses since they meet the minimum required sample size for statistical evaluation. Analytes for which the sample sizes were limited include, but are not limited to, those that were targeted (i.e., Goose Island and Eagle Creek), focused (i.e., groundwater, seep water, and surface water), or limited based on the ability to collect (i.e., sculpin and sucker) and were included for non-statistical use.

Eight samples is the minimum necessary to calculate a 95% upper confidence limit on the mean (UCL) as the exposure point concentration (EPC), and 14 samples is the minimum desired for the population-to-population statistical comparison to identify COIs that are above Reference concentrations. Limited sample sizes were noted for some analytes in samples intended for these statistical analyses. For human and ecological receptors for which the UCL is an appropriate EPC, the maximum detected concentration was used to represent the EPC for analytes with less than 8 samples and represents the best effort to avoid underestimation of risk. Analytes for which at least 14 samples are not available were not included in the statistical comparison, and a qualitative comparison to Reference concentrations was performed.

The use of J-flagged data and analytical MDLs and MRLs with respect to SLVs are associated with some potential for underprediction of risk but have been mitigated to the extent possible by the RA methodology by including J-flagged data as detected values in the data comparisons. The treatment of analytes without SLVs may also have the potential to underpredict risk, but these analytes and media are evaluated qualitatively in the RAs. Sections O.2 and O.3 provide a

more detailed discussion of the MDLs in exceedance of the SLVs specific to the HHRA and ERA, as well as COPCs that lack SLVs protective of either human or ecological receptors. Overall, data quality issues have been addressed in a manner that tends to overestimate the occurrence and concentrations of COIs in the screening-level HHRA and ERA.

O.1.1.2 COPC Selection Process

The extensive COPC selection process includes consideration of detection frequency (for Upland media and analytes with more than 20 samples), comparison with Reference levels for inorganics, and a concentration-risk screen. The use of the 5% detection frequency criterion may underestimate risk by omitting some COIs that are present at low frequency but may potentially contribute to human and ecological risk if exposures to those COIs were to occur. Several of the COIs omitted on the basis of detection frequency (a number of volatile organic compounds [VOCs] and semivolatile organic compound [SVOCs]) are generally of low toxicity and do not bioaccumulate. Bioaccumulation of COIs in soil is only a concern for ecological receptors in the Upland OU, and bioaccumulation of COIs in groundwater that could discharge to surface water of the River is a concern for both human and ecological receptors. Overall, the selection process tends to retain more COPCs than are actually expected to contribute significantly to human health or ecological risks.

O.1.1.3 Exposure Point Concentrations

As with all site characterizations for RA, there is uncertainty that the maximum and minimum detected concentrations for COPCs may potentially not be the actual highest and lowest concentrations in each medium. Since the actual high and low concentrations may not have been detected, the calculation of the EPC (e.g., maximum detected concentrations and 95% UCLs) may overestimate or underestimate the risk at the site to human and ecological receptors, but is assumed to represent an upper-bound estimate of the mean.

O.1.1.4 Selection and Use of SLVs

The human or ecological screening value represents a constituent concentration in a given medium (e.g., soil) that is considered to be protective of humans or the ecological community, provided that the ecological screening value is not exceeded. However, some of the SLVs used in the Human Health Problem Formulation and Level II ERA screening may be based on the protection of a single, most-sensitive receptor or species in a specific medium, which may not be an exposure pathway or species likely to be present on Bradford Island (e.g., potable use of shallow perched groundwater in a residential setting).

In addition, SLVs protective of ecological receptors were not available to evaluate species-specific toxicity for all of the COIs evaluated in the HHRA and ERA. When appropriate, surrogate SLVs were selected from chemically-similar COIs to assess risk for the COIs without chemical-specific SLVs. However, the exposed organisms may respond differently to exposures to different toxicants, and responses from exposures to COIs with surrogate SLVs may be different from the response for the COIs for which toxicity data were reported. The direction and magnitude of this uncertainty are not measurable, although the choice of conservative SLVs is likely to skew the evaluation toward more protective conclusions.

O.1.2 Upland OU

O.1.2.1 Exposure to Undiluted Groundwater

The assumption that aquatic organisms, fish, aquatic-based wildlife, and humans utilizing the River could be exposed to undiluted groundwater concentrations likely overestimated risk. However, risk to these receptors is more accurately assessed through the evaluation of the seep water and adjacent shoreline surface water (i.e., Landfill area of potential concern [AOPC]), thereby minimizing the uncertainty surrounding risk to aquatic receptors from groundwater. Also the assumption of potable use of unfiltered groundwater in a hypothetical on-site residential setting is an unlikely exposure scenario but is built in to the unavoidable use of residential water use SLVs for evaluation of the potable use pathway for occupational receptors.

O.1.2.2 Overland Transport Pathway from Upland to River

The majority of the Landfill AOPC is flat and well vegetated, with no evidence of runoff or erosion. While there is no visual evidence of current sloughing along the northern perimeter of the Landfill AOPC, if mass wasting were to occur (i.e., catastrophic event) on the steep slopes, the soils may reach the river. During a site visit in 2009, an area northeast of the Sandblast Building was observed to have been recently disturbed and was identified as erodible, whereby contaminated surface soil is transported to the river via stormwater drainage and surface water runoff. However, this area has become revegetated (see the photo in Appendix C) and the soils are no longer considered erodible. The majority of the Bulb Slope AOPC exhibits no evidence of surface runoff or overland flow to the River. However, wave erosion at the base of the slope has resulted in mass wasting (small slope failures) of material into the river and appears to be a potential mechanism for transport of debris and/or contaminated soil into the river.

For these reasons, the evaluation to address the potential transport of soil from the Landfill, Sandblast Area, and Bulb Slope AOPCs to the River through a comparison of COI concentrations detected in soil samples collected in-place from these three AOPCs to sediment SLVs protective of aquatic organisms, aquatic-dependent wildlife, and humans utilizing the River likely overestimates risk for exposure to these receptor groups. Risk to these receptors is more accurately assessed through the evaluation of the sediment and tissue data collected from River OU, thereby minimizing the uncertainty surrounding risk to aquatic receptors from Upland soil transport. The findings of the receptor-specific evaluation of the overland transport pathway are provided in Sections O.2 and O.3.

O.1.3 River OU

O.1.3.1 Large Scale Sucker Data

The large scale sucker is a higher trophic level fish that represents a different feeding guild than either the sculpin or smallmouth bass, and may conceivably be exposed to COIs from different prey items than the smallmouth bass. The sucker is considered to be an edible sport fish of low attraction to anglers. One composite sample of large scale sucker was collected and analyzed prior to the interim sediment and equipment removal. The sample size was limited due to the inability to collect sufficient tissue from the Forebay. Due to the limited sample size and time of collection, the large-scale sucker data are not considered representative of current Forebay conditions. However, the data are evaluated qualitatively here to address two concerns expressed

by Oregon Department of Environmental Quality (DEQ): whether there are any CPECs unique to large-scale sucker that were not found in other fish species sampled, and whether concentrations of any COIs are higher in large-scale sucker than in other tissue matrices.

Table O.1-1 shows a comparison of the COI concentrations in large scale sucker tissue to smallmouth bass tissue, and to tissue SLVs protective of human and ecological receptors. Total polychlorinated biphenyls (PCBs) as well as individual dioxin-like congeners were substantially higher (by 1 to 3 orders of magnitude) in the bass than the sucker. The only exception detected in the sucker that was not reported in bass was PCB congener 169. PCB 169 was detected in sucker tissue at a concentration of 0.011 µg/kg, which is higher than the human health tissue SLVs of 0.00025 micrograms per kilogram (µg/kg) and 0.0021 µg/kg for subsistence and recreational fishers, respectively, and lower than the lowest ecological tissue SLV of 0.02 µg/kg. All other chemicals detected in sucker were also reported in bass, the majority of which were higher in the bass. No other COIs in large scale sucker tissue exceeded the tissue SLVs.

Based on this analysis, it is concluded that the addition of large-scale sucker data to the RAs (in addition to smallmouth bass) is not likely to add either precision or accuracy to the risk estimates, and excluding it did not result in underestimation of risk.

O.1.3.2 Use of Tissue Data

A major source of uncertainty for the River OU is whether the tissue and sediment data utilized in the RAs represent current conditions in the Forebay. The risk characterization is based upon post-sediment removal clam tissue, crayfish tissue, and sculpin tissue, as well as smallmouth bass tissue data that were collected prior to the 2007 sediment removal. The crayfish tissue was collected after the sediment removal but may represent exposure periods that date back to pre-removal conditions. These factors may overestimate the number of COPCs and the magnitudes of their exceedances above SLVs for smallmouth bass and crayfish. Crayfish, smallmouth bass and other receptors that may have been exposed to both pre-removal and post-removal conditions are likely to show a trend of declining tissue concentrations over time. However, crayfish and smallmouth bass populations that are hatched after the removal will be exposed only to post-removal conditions and will furnish a more accurate estimate of bioaccumulation potential under current conditions.

O.1.3.3 Pre-Removal Sediment

Five sediment samples (termed pre-removal sediment samples) were collected from within the footprint of the sediment removal area before the removal action (Table 6-7). These samples are not representative of current conditions in the Forebay. Therefore, it is inappropriate to use these data as part of the COPC selection process. However, the data were reviewed on a qualitative basis herein.

In Table O.1-2, the data from the five pre-removal samples are screened against the lowest SLV (applicable to ecological or human health). The only COIs that exceed these most-conservative SLVs are Aroclor 1254, Total PCBs as Aroclors, and mercury. Mercury, Aroclor 1254 and Total PCBs are already identified as COPCs for the River OU. Although mercury levels in Forebay sediment are comparable to Reference Area concentrations, mercury was retained as a bioaccumulative COPC for sediments based on its selection as a COPC for fish tissues.

If the pre-removal sediment data were included for evaluation of PCBs, the benthic invertebrate EPC (the maximum detected concentration) for Aroclor 1254 would change from 29.0 to 130 µg/kg and the EPC for Total PCBs as Aroclors would change from 29.7 to 131 µg/kg. This would have resulted in toxicity ratios (Tij) above 1 for both Aroclor 1254 and total PCBs as Aroclors. However, Aroclor 1254 is already identified as a CPEC for benthic invertebrates exposed to multiple COIs, so there is no change in the overall outcome (identification of PCBs as CPECs) of the current ERA.

Although the pre-removal data are not representative of current conditions, and should not be used quantitatively in the RAs, the United States Army Corps of Engineers (USACE) agreed to calculate the area-weighted average 95% UCL for the Forebay, both with and without the pre-removal data (URS Corporation [URS] 2010d). The 95% UCL for Total PCBs as Congeners, characterizing the Forebay using the 19 random sediment samples is 3.63 µg/kg. The area of nearshore Forebay sediments represented by the five pre-removal samples is 5% of the total area. Only PCB Aroclor data is available for these samples, but if the Total PCBs as Aroclors data from the pre-removal data is used to characterize 5% of the Forebay, the area-weighted average 95% UCL for Forebay sediments is 9.05 µg/kg.

The area-weighted 95% UCL for Total PCBs as Aroclors in pre-removal sediment (9.05 µg/kg), is roughly 3 times lower than post-remediation Total PCBs as Aroclors maximum concentration (28.7 µg/kg) . Therefore, it is unlikely that risk has been underestimated in the evaluation for PCBs as Aroclors performed in the HHRA or ERA. .

O.1.3.4 Bioaccumulative Metals Without SLVs

Several metals (aluminum, thallium, vanadium, and zinc) were detected in tissue that are bioaccumulative (bioconcentration factor [BCF] > 300) or potentially bioaccumulative (no BCF available) but do not have DEQ Acceptable Tissue Levels (ATLs) protective of humans and wildlife that consume fish and shellfish, or Critical Tissue Levels (CTLs) protective of piscivorous fish. Ecological ATLs and CTLs were not developed for these metals for the following reasons:

- Concentrations of thallium and vanadium in Forebay sediment and tissue were not elevated above the Reference Area concentrations.
- Concentrations of aluminum and zinc were not elevated relative to Reference Area concentrations for sediment, clams, crayfish, or sculpin.
- Although aluminum and zinc concentrations in Forebay bass tissue were found to be statistically higher than the Reference Area bass tissue concentrations in the population-to-population evaluation, the Forebay smallmouth bass tissue had 95% UCL concentrations (Table N-55) lower than the Reference Area:
    - Aluminum – Small mouth bass 95% UCL for the Forebay was 7.11 milligrams per kilogram (mg/kg) compared to the Reference Area 95% UCL of 10.1 mg/kg.
    - Zinc – Small mouth bass 95% UCL for the Forebay was 14.9 mg/kg compared to the Reference Area 95% UCL of 15.5 mg/kg.

Based on this analysis, the uncertainty regarding these metals is manageable and is unlikely to substantively underestimate risk.

In addition to the comparison with Reference Area concentrations, human health-protective ATLs were calculated for aluminum, antimony, barium, chromium, copper, nickel, and zinc since they were detected in either crayfish or smallmouth bass tissue in the Forebay, as described in Section 11.3.4.1. The human health-based values were developed by multiplying the water quality criterion that is protective of consumption of organisms (and water, if organism only-based criteria are not available) by the BCF for each of these metals. In all cases, the measured tissue concentrations were well below the ATLs. All the ATLs developed in this manner are not specific to the subsistence or recreational fisher, they are a useful tool in demonstrating that these poorly bioaccumulative chemicals were reported at low concentrations in the tissues and that elimination of these COIs is not a concern for human receptors.

O.1.3.5 Ubiquitous Presence of PCBs

The most abundant PCB congener in the majority of the River OU samples was PCB 11. This PCB congener constituted from approximately 7 to 27% of the total PCB congener burden, and contributes a larger percentage to samples with lower total PCB concentrations. This is consistent with the results of other regional studies have noted that airborne PCBs in the Willamette airshed have contributed to the ubiquitous occurrence of PCBs in sediments and that PCB 11 is one of the indicator PCB congeners for evidence of airborne deposition (Hope 2007, 2008). PCB 11 has also been found in water and air in urban environments (Hu et al. 2008, Du et al. 2009, Rodenburg et al. 2010), the great lakes watershed (Basu et al. 2009), and even the polar regions (Choi et al. 2008). Part of the reason it is so ubiquitous may be that it is not derived by Aroclor mixtures, but is instead found in unregulated paints and pigments (Fraser 2010, Hu and Hornbuckle 2010, Rodenburg et al. 2010).

PCB 118, another ubiquitous PCB congener in the Willamette airshed, was also observed in all river media (surface water, sediment, clam, crayfish, sculpin, and smallmouth bass). Therefore, risk from PCBs in the River OU likely includes both site-related sources, and non-site related sources, including those from upstream as well as from the ubiquitous presence of PCBs in the Willamette airshed

O.2 HHRA Uncertainty Assessment

O.2.1 Upland OU

The sources of uncertainty in the problem formulation for the HHRA are described in this section. The major potential sources of uncertainty in the problem formulation process are associated with the level of confidence in the adequacy of the analytical data used for site characterization, the identified receptors and exposure pathways, selection and use of SLVs and the level of confidence in the COPC selection and screening risk characterization.

O.2.1.1 Data Sensitivity Analysis for HHRA

In Section 7.4, the analytical data used for the HHRA were evaluated with regard to the sensitivity of the data for RA use. The goal was to understand whether COIs reported as not detected could be reliably assumed to not be present in the individual sample or medium at levels of concern to human health. Evaluating this issue necessarily requires an understanding of how close the analyte's MDLs are to the SLV for that analyte. This evaluation was performed for analytes reported as non-detect at least once in any medium.

The following datasets were considered in the Upland OU data quality evaluation:

- Landfill AOPC: soil, groundwater, and co-located (adjacent) seep water and surface water
- Sandblast Area AOPC: soil, soil gas, and groundwater.
- Pistol Range AOPC: soil and groundwater (All COIs analyzed for in lagoon sediments were detected in all samples, so no MDL comparison was required)
- Bulb Slope AOPC: soil

Tables K-1 through K-4 in Appendix K present the results of this analysis for the Landfill, Sandblast Area, Pistol Range, and Bulb Slope AOPCs, respectively. At all the AOPCs, one metal (thallium), one SVOC (N-nitrosodimethylamine), and three VOCs (1,2,3-trichlorobenzene, 1,2,-dibromo-3-chloropropane, trichloroethene [TCE]) had a few observations where the MDL exceeded the SLVs for soil. For all of these analytes, except the SVOC, the number of samples with MDLs exceeding the SLV formed only a subset of the total number of samples. Therefore, it did not affect the evaluation of the analytes as to whether they should be identified as COPCs. In groundwater, MDLs for antimony, arsenic and thallium sometimes exceeded their SLVs. Arsenic is retained as a COPC for landfill groundwater while thallium and antimony are of less human health concern and were not associated with high exceedances. The magnitude of MDL exceedance above the SLV is generally less than a factor of ten for the analytes. MDLs for pesticides, Aroclors, and many SVOCs and VOCs routinely exceeded the SLVs for groundwater, seep water and shoreline surface water. These are analytes that are poorly soluble in water and generally are best evaluated based on their occurrence in the solid phase, such as soils, sediments or tissue. These limits to analytical technology are well understood and are inherent in the RA process. The SLVs for some chemicals such as pesticides are sometimes based on literature-based estimates of toxicity and threshold values and do not necessarily take the feasibility of analytical detection limits into consideration. This only means that the limitations and uncertainties associated with concentrations detected or not detected at the low end of the concentration gradient should be understood.

O.2.1.2 Statistical Background Comparison Screening

As discussed in Section 8.1 of the main text, the goal established in the remedial investigation/ feasibility study (RI/FS) management plan (MP) (URS 2007a) for statistical power associated with the background comparison was achieved (i.e., to detect "one-standard-deviation-away"). However, for some Upland soils, this one-standard-deviation is high due to the high data variability, which could not be controlled because of the inherent heterogeneity of the Upland soils. As an artifact of this high data variability, minimum detectable differences (MDDs) greater than 100% of the reference mean were calculated for several metals in soil of the Landfill, Sandblast Area, and the four combined AOPCs (Table L-1), and include the following:

Landfill AOPC

- 0 to 3 feet below ground surface (ft bgs) – chromium, copper, magnesium, nickel, and silver
- 0 to 10 ft bgs – arsenic, chromium, copper, magnesium

Sandblast Area AOPC

- 0 to 3 ft bgs and 0 to 10 ft bgs – antimony, copper, magnesium, and mercury

All Four AOPCs Combined

- 0 to 3 ft bgs and 0 to 10 ft bgs – antimony, copper, magnesium, mercury, and silver

Although the null hypothesis was not rejected, the statistical power to detect substantial differences between the site and Reference Area datasets for metals with MDDs greater than 100% of the reference mean might be limited.

Magnesium is an essential nutrient in soil, it was eliminated from the risk-based evaluation and no further investigation is recommended. Examination of the box-and-whisker plots in Appendix L indicated that silver (0-3 ft bgs, Landfill AOPC), antimony (0-3 and 0-10 ft bgs, Sandblast AOPC), and antimony, mercury, and silver (0-3 and 0-10 ft bgs, All Four AOPCs Combined) should be considered as having higher concentrations than the Reference Area concentrations even though the population-to-population comparison indicated that they were the same or equal to Reference Area concentrations; therefore, these analytes were compared included in the HHRA screening evaluation and compared to SLVs (Section 11.2.4). However, they were not retained as COPCs as a result of the screening.

Since the results of the statistical background comparisons (population-to-population and box-and-whisker plot) indicated that concentrations of the remaining metals were present below or equal to that of the Reference Area levels, these metals were not carried to the COPC SLV screening step in Section 11 (HHRA). However, the high MDDs (greater than 100% of the reference mean) present an uncertainty with this finding.

To address the uncertainty with the results of the statistical background comparison, the remaining metals were subjected to a risk-based screening evaluation, herein. The purpose of this evaluation is to explore whether or not these metals should be included as COPCs, and ultimately advanced to the next level of RA or directly to the FS. A weight-of-evidence approach similar to the one implemented in Section 11 (HHRA) was used to evaluate these metals.

The following sequential steps summarize the risk screening process used to evaluate these metals with MDDs greater than 100% of the reference mean:

- SLVs protective of human health receptors were compared to the appropriate EPCs , which are the lower of the 95% UCLs and maximum detected concentrations for each analyte.
- Magnitude of SLV exceedances, detection frequency, confidence in the SLV, comparison of AOPC versus Reference Area concentration ranges, and other lines of evidence were evaluated.
- Spatial distribution of the concentrations relative to the site-specific background upper prediction limits (UPLs) and SLVs was assessed by referencing existing figures presented in the main RI report.

The human health SLVs presented in Appendix J were compared to the EPCs calculated for soil from 0 to 3 ft bgs (adult outdoor worker), and soil from 0 to 10 ft bgs soils (construction workers and excavation workers) (Table O.2-1). SLVs for construction workers and excavation workers varied due to exposure duration differences, but the more conservative SLV was initially used in the screening for this analysis.

Based on this weight-of-evidence approach, those COPCs that truly warrant additional investigation or risk management were identified and discussed below.

Landfill AOPC

Of the three metals (chromium, copper, nickel) in 0 to 3 ft bgs soils with high MDDs, only the EPC for chromium exceeded the SLV. Of the three metals (arsenic, chromium, copper) in 0 to 10 ft bgs soils with high MDDs, none of the EPCs exceeded the SLV.

Chromium. The MDD generated for chromium in soil during the statistical background comparison is 1559% for 0 to 3 ft bgs (Table L-1).

The 95% UCL of 594 mg/kg was used as the chromium EPC, which exceeds the SLV of 190 mg/kg (based on the DEQ soil ingestion for occupational Risk Based Concentrations [RBC]).

Concentrations of chromium in Landfill AOPC soils from 0 to 3 ft bgs range from 14.7 mg/kg to 1,950 mg/kg (Table I-1). Concentrations of chromium in Upland Reference Area soils range from 15.5 mg/kg to 27.3 mg/kg (Table I-6). Highest levels of chromium occur in the Gully Test Pit and just downgradient of this area (Figure 11-5): BIL07 (0.5 ft bgs), BIL18 (2 ft bgs), and BIL-22 (3 ft bgs). BIL05 (0 to 0.5 ft bgs), located just east of Lead Hot Spot Test Pit #1, also has elevated chromium (237 mg/kg). Chromium concentrations in the remaining samples from 0 to 3 ft bgs are below the SLV, and many are equivalent to or below the Reference Area UPL.

In the absence of site-specific chromium speciation data, it was conservatively assumed that all the detected chromium was the more toxic hexavalent chromium rather than the more common and much less toxic trivalent chromium. Chromium is recommended for further evaluation.

Summary. Of the metals with high MDDs demonstrated for Landfill AOPC soils, only chromium in soil from 0 to 3 ft bgs is recommended for further evaluation in the form of either a baseline HHRA or remediation of the locations above the UPL.

Sandblast Area AOPC

Of the two metals (copper, mercury) in the 0 to 3 ft bgs and 0 to 10 ft bgs soils with high MDDs; there were no exceedances of their SLVs. Therefore, further evaluation is not warranted.

All Four AOPCs Combined

Of the single metal (copper) in the 0 to 3 ft bgs and 0 to 10 ft bgs soils with a high MDD. There was no exceedance of the SLV, therefore, further evaluation is not warranted.

O.2.1.3 COPC Selection and Screening Risk Characterization

Detection Frequency

The extensive COPC selection process includes consideration of detection frequency, comparison with reference soils and a concentration-risk screen. The use of the 5% detection frequency criterion may omit some COIs that are present in the Landfill and Sandblast AOPCs that were at low frequency but may potentially contribute to human health risk if exposures to those COIs were to occur. An evaluation of these COIs, which were detected in soil, groundwater, or both, was performed to understand the implications of not including these COIs in the quantitative screening assessment. In Tables O.2-2 and O.2-3, concentrations of these COIs were compared to SLVs protective of the relevant receptor groups:

- soil: outdoor worker, construction worker, and excavation worker
- groundwater: potable water user and bioaccumulation

In addition, whether or not these COIs were detected in both soil and groundwater from the same AOPC is also considered. Only bioaccumulative COIs (as defined in Table J-7) were compared to SLVs. Although the criteria used to identify bioaccumulative COIs for the River OU indicate selenium is not bioaccumulative in aquatic environments, selenium was included in the screening tables because it is included as a bioaccumulative COI in DEQ's sediment bioaccumulation guidance (2007).

Landfill AOPC

As shown in Tables O.2-2, Aroclor 1248 in 0-10 ft bgs soil interval and 4,4'-DDE, total DDTs, dieldrin, and carbon tetrachloride in groundwater at the Landfill AOPC were eliminated on the basis of detection frequency and were detected above the SLV.

The maximum detected soil concentration for Aroclor 1248 (968 µg/kg) exceeded the construction and excavation worker SLV (740 µg/kg). Based on earlier discussions with DEQ and as outlined in the RI/FS MP, 95% UCL values are used to represent site concentrations of COIs when there were at least two detections and a sample size of eight. The 95% UCL is based on United States Environmental Protection Agency (USEPA) recommendations and is consistent with the USACE's desire to maintain compatibility with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process. It is slightly different from DEQ's recommendation to use the 90% UCL. Since use of the 95% UCL will not lead to underestimation of risk when compared to the 90% UCL, the technical advisory group (TAG) agreed that representation of the 95% UCL is acceptable. The 95% UCL was not calculated in Appendix I because the detection frequency was below 5%; however, because there were two detections (in a sample size of 43), a 95% UCL could be calculated. Using the latest ProUCL

4.1.01, a 95% UCL of 211 µg/kg was calculated by using the Chebyshev KM method. The 95% UCL for Aroclor 1248 does not exceed the construction and excavation worker SLV. Therefore, elimination of Aroclor 1248 from the SLV screening for 0-10 ft bgs soil interval based on detection frequency is not expected to present a significant uncertainty in the HHRA.

The groundwater concentration of total DDTs is attributed to the one detection (out of 22 samples) for 4,4'-DDE, as the other DDT isomers were not detected in any of the 22 groundwater samples (Table I-1) collected at the Landfill AOPC. The 4,4'-DDE detected concentration of 0.00246 µg/L that exceeded the bioaccumulation SLV (0.00022 µg/L) was detected at a single well (MW-03, see Figure 11-7) and down gradient wells closer to the river were all non-detect for 4,4'-DDE. Furthermore, no DDT isomers were detected in the seep sample collected from the Landfill. The non-detect groundwater MDLs, which range from 0.00195 to 0.1 µg/L, all exceed the bioaccumulation SLV, indicating that the theoretically based SLV is lower than analytical methods can achieve. In addition, as discussed in Section 11.2.4.1.5 (of the main text), the potential for discharge of COPCs in Landfill AOPC groundwater into the river surface at levels of concern appears to be low. Based on the low, single detection of 4,4'-DDE in groundwater of the Landfill and lack of detected DDT isomers in seep water, elimination of this COI from the SLV screening for groundwater based on detection frequency is not expected to present a significant uncertainty in the HHRA.

Dieldrin was detected (0.00982 µg/L) in one of 22 groundwater samples collected at the Landfill AOPC, which exceeded the bioaccumulation SLV (0.000052 µg/L). Dieldrin was detected in MW-03 on May 1, 2002. MW-03 is located on the eastern edge of the Landfill debris (Figure 11-7) and the down gradient wells closer to the river were all non-detect for dieldrin. The non-detect MDLs, which range from 0.000294 to 0.100 µg/L, all exceed the bioaccumulation SLV, indicating that the theoretically based SLV is lower than analytical methods can achieve. As stated previously in section O.2.1.1, SLVs for some chemicals such as pesticides are sometimes based on literature-based estimates of toxicity and threshold values and do not necessarily take the feasibility of analytical detection limits into consideration. In addition, as discussed in Section 11.2.4.1.5 (of the main text), the potential for discharge of COPCs in Landfill AOPC groundwater into the river surface at levels of concern appears to be low. Elimination of dieldrin based on detection frequency is not expected to present a significant uncertainty in the HHRA.

Carbon tetrachloride was detected (1.4 µg/L) in one of 22 groundwater samples collected at the Landfill AOPC, which exceeded both the potable water user and bioaccumulation SLVs (0.19 and 0.23 micrograms per liter (µg/L), respectively). Carbon tetrachloride was detected in MW-04 on January 1, 2000. MW-04 is located in the Lead Hot-Spot Test Pit #2 (Figure 11-7). Wells down gradient and closer to the river were all non-detect for carbon tetrachloride. The non-detect MDLs, which range from 0.500 to 1 µg/L, which all exceed the potable water user and bioaccumulation SLVs, indicating that the theoretically based SLVs are lower than analytical methods can achieve. In addition, as discussed in Section 11.2.4.1.5 (of the main text), the potential for discharge of COPCs in Landfill AOPC groundwater into the river surface at levels of concern appears to be low. The single detection of carbon tetrachloride in only one medium of the Landfill AOPC likely demonstrates that elimination of carbon tetrachloride based on detection frequency is not expected to present a significant uncertainty in the HHRA.

Sandblast Area AOPC

As shown in Tables O.2-3, benzo(b)fluoranthene in groundwater at the Sandblast AOPC was eliminated on the basis of detection frequency and was detected above the SLV.

Benzo(b)fluoranthene was detected (0.0180 µg/L) in one of 20 direct push groundwater samples collected at the Sandblast AOPC, which exceeded the bioaccumulation SLV (0.0038 µg/L). Benzo(b)fluoranthene was detected in MW-12, which is located at an intermediate location between the upgradient and downgradient edges (Figure 11-13). This exceedance, however, was relatively low (corresponding to an excess lifetime cancer risk [ELCR] of 4.7E-06). The direct push groundwater data is considered to be of low quality for RA use due to matrix interferences (i.e. influence of particulate-related concentrations in unfiltered samples). For these reasons, elimination of benzo(b)fluoranthene based on detection frequency is not expected to present a significant uncertainty in the HHRA.

In summary, none of the COIs eliminated as soil and groundwater COPCs in the Landfill and Sandblast AOPCs on the basis of frequency of detection represent a significant uncertainty in the HHRA.

Three-Step Concentration-Risk Screen

The use of the single chemical, multi-chemical and multi-media COPC selection process is a comprehensive approach that greatly minimizes the potential for omission of qualified COPCs or underestimation of risks and hazards at a screening level. Many of the selected COPCs are unlikely to contribute significant risk or hazard if they were to be further evaluated in a baseline human health risk assessment (BHHRA). The summation of concentration over screening level value (C/SLV) ratios, where C is the concentration of the COI, for non-carcinogens provides an approximate estimate of the non-cancer hazard index (HI). This may be an underestimate since the non-cancer effects of carcinogenic COPCs are not included in this summation. However, this does not affect the COPC selection process since the cancer SLVs are typically lower than the non-cancer-based SLV for most carcinogens.

Degradation Products of PCE and TCE

Per DEQ guidance, degradation products of tetrachloroethylene (PCE) and trichloroethene (TCE) (cis,1,2-dichloroethene, trans-1,2-dichloroethene, 1,1-dichloroethene and vinyl chloride) were identified as COPCs (even if they were not detected) in all media where PCE or TCE was identified as a COPC. The retention of the degradation products as COPCs adds to the number of COPCs without necessarily demonstrating that they actually occur in these media.

Total Benzofluoranthenes

There is also uncertainty related to the use of historical and recently collected data for benzofluoranthenes at the Upland AOPC soils for the Landfill and Sandblast Area AOPCs. This sub-group of carcinogenic polycyclic aromatic hydrocarbon (cPAHs) is reported as total benzofluoranthenes in the historical data but is more precisely reported as the individual compounds in recent data: benzo(b)fluoranthene, benzo(j)fluoranthene and benzo(k)fluoranthene. The level of confidence in the quality of the summed analyte in the historical data, collected in 2001 and 2002, is unknown, but results in higher C/SLV ratios for total benzofluoranthenes than when the individual constituents are added (Tables M-1, M-2, and M-3). For the Landfill AOPC soils, in particular, the total benzofluoranthenes are a significant contributor to the cumulative C/SLV ratio and screening risks for cPAHs. There is greater

confidence in the sensitivity and representativeness of the recent data for polycyclic aromatic hydrocarbon (PAH) analysis. Therefore, the estimated C/SLV ratios and screening level risk estimate for the total benzofluoranthenes, cumulative cPAHs and cumulative carcinogenic risks for the Landfill and Sandblast AOPCs soils are likely to be substantial overestimates. The COI and COPC selection tables present the results separately for the older total benzofluoranthenes data and the recent individual benzofluoranthene to illustrate and clearly define the results of the screening.

Chromium

Total chromium in Upland soils was evaluated on the assumption that it is comprised entirely of the more toxic hexavalent form. This is a conservative assumption that is unlikely to be true and will overestimate risks related to chromium.

Direct-Push Groundwater Data for Sandblast AOPC

Groundwater samples from soil borings at the Sandblast AOPC were analyzed for the full analytical suite, while monitoring well groundwater samplers were only analyzed for a subset of COIs. The direct push groundwater data is considered to be of low quality for RA due to matrix interferences (i.e. influence of particulate-related concentrations in unfiltered samples). Only monitoring well data were included in the RAs, for which both filtered and unfiltered data are available. However, the direct push groundwater PAH data was used in the screening to address the sampling data gap for PAHs in monitoring well data for this AOPC. In the HHRA tables, benzo(a)pyrene (Tables M-17, M-18, and M-19), dibenzo(a,h)anthracene (Tables M-18 and M-19), and indeno(1,2,3-cd)pyrene (Table M-19) were screened using direct push data and were retained as COPCs. These were generally low exceedances (ELCR less than 3.1E-06) or retained due to multi-media selection process. Using direct push groundwater data would likely result in an overestimate the risk of the exposure to PAHs in groundwater due to the presence of suspended particulates.

Residential SLVs for Potable Water

The use of residential SLVs to identify COPCs for the potable water use pathway, even though no residential use will occur on the island, and the use of National Recommended Water Quality Criteria (NRWQC; USEPA 2009) (for consumption of water and organisms) to screen COPCs for the groundwater discharge to surface water pathway are both conservative since it is based on undiluted groundwater data. Both of these screening methods are likely to overestimate the number of COPCs that may actually qualify for these pathways.

HI and ELCR Estimates

As described in Section 11, the cumulative C/SLV ratios for a single medium were presented separately for the noncarcinogenic and carcinogenic COPCs. They were then further presented and discussed as screening-level estimates of the non-cancer hazard HI and the carcinogenic ELCR (after multiplying by 1E-06). These estimates are presented for initial comparison and to enable a screening-level discussion of whether an AOPC may be estimated to fall within USEPA's and DEQ's risk management range (1E-06 to 1E-04 ELCR, HI less than 1.0) or warranting remedial response (ELCR greater than 1E-04) or below the acceptable risk level (1E-06 ELCR). . .

Several chemical-specific attributes in interpreting these ratios are described in Section 11. They include issues such as not estimating ELCR values for C/SLV ratios for arsenic since the SLV is based on a Reference Area soil value and not a risk-based concentration; caution in interpreting C/SLV ratios for COIs in groundwater for which the SLV is based on an maximum contaminant level (MCL) since MCLs are not necessarily risk-based (e.g., lead and thallium) and ascribing bioaccumulation potential to COIs based solely on octanol-water partition coefficient (log K_{ow})greater than 3.5 or BCF greater than 300. The net effect of many of these assumptions is to increase the number of COIs that are initially identified as COPCs.

Infant Milk Ingestion Pathway

There is uncertainty regarding the pathway of infant exposure to bioaccumulative COIs through the human milk ingestion pathway. Although this is recognized as a viable pathway, there is no established federal guidance on quantitative evaluation methodology for this pathway. However, DEQ's recent guidance has suggested a method for evaluation of this pathway for PCBs. The suggested methodology in DEQ's guidance would generate a non-carcinogenic PCB hazard quotient (HQ) for this pathway for infants that would be approximately 25 times the HQ of the mother for the types of occupational and groundwater ingestion pathways considered for the Upland (Appendix D, DEQ 2010b). The subchronic PCB ELCR for the infant would be approximately similar to, or potentially lower than, the ELCR for the mother because of the shorter exposure duration of the infant. If DEQ's draft methodology were to be applied to the problem formulation, there would be no difference to the results of the COPC selection for carcinogens since PCBs are already considered for their carcinogenic potential.

For the Upland OU, PCBs in soil were evaluated by comparison to the USEPA cancer-based regional screening levels (RSL) (0.740 mg/kg for industrial soil, USEPA 2010). The non-cancer RSL for PCBs in industrial soil is 11 mg/kg, primarily based on Aroclor 1254 (Supporting Tables, USEPA 2010). Dividing the non-cancer RSL by a factor of 25 provides a soil SLV for the milk ingestion pathway of 0.44 mg/kg or 440 µg/kg. The UCL is lower than 440 µg/kg for all the Aroclors and Total PCBs as Aroclors that were reported in Landfill and Sandblast Area AOPCs soils for the Outdoor Occupational Worker, Construction Worker and Excavation Worker (Tables M-1, M-2, M-3, M-13, M-14 and M-15). Therefore, applying this SLV would not result in the addition of PCBs as COPCs at the Landfill or Sandblast Area AOPCs. The non-cancer C/SLV ratio would increase (e.g., C/SLV for Total PCBs for the Outdoor Occupational Worker at the Landfill AOPC from 0.554 [Table M-1] to 0.932 when the SLV of 410 µg/kg is used). The cumulative non-cancer HI would increase from 0.293 to 1.22 which would still be considered an acceptable HI that is only marginally higher than 1.0. Similarly, the increase in the HI for the Occupational Outdoor Worker at the Sandblast Area AOPC would be from 0.0866 to 1.04 when the C/SLV for Total Aroclors is applied to the UCL value of 0.419 mg/kg (Table M-13). In summary, consideration of the milk ingestion pathway does not add PCBs as COPCs to the Upland OUs nor does it increase the non-cancer HI to unacceptable levels.

O.2.1.4 Site Characterization Data

Use of the data from the two test pit mercury lamp area samples at the Landfill AOPC adds some uncertainty. The data were used in this HHRA to assess risk to human receptors exposed to shallow and deeper soil intervals (0-3 and 0-10 ft bgs) since there is no way to assign a depth at which the results for these samples occur.

Extensive discussion of the adequacy of the data with regard to representativeness, intended uses, and associated uncertainties is presented in Section 7 (in conjunction with Appendix K).

O.2.1.5 Receptors and Exposure Pathways

As shown in the Conceptual Exposure Models (CEMs) (Figures 11-1 to 11-4), numerous types of employees are present at Bradford Island and may engage in soil intrusive activities. There is a high degree of confidence in excluding residential land uses from the receptors due to the long history of industrial use at the Island and its continuing use for the foreseeable future. Therefore, there is little uncertainty or potential for underestimation of risk regarding the lack of consideration of residential receptors. .

Among the occupational uses at the site, construction workers engaged in activities that would fall within DEQ's exposure assumptions are unlikely (250 days for one year) and risks may be overestimated (DEQ 2010b). However, existing excavation workers may be engaged in activities that exceed DEQ's assumptions for excavation workers (9 days for one year) since they may actually perform such activities for multiple years. This may underestimate risks to excavation workers. For this reason, use of the construction worker SLVs is considered more appropriate for evaluation of soil-intrusive occupational exposures.

RAs following USEPA methodology often include a trespasser as a receptor even if public access is restricted at a site. A trespasser is not included here since the evaluation of the more highly exposed Occupational Outdoor Worker will encompass lesser exposures for other receptors, including trespassers.

All groundwater-related pathways are accompanied by a high level of uncertainty as to whether the pathways may actually occur. There is currently no use of on-site groundwater for potable use and no such use is planned for the foreseeable future. Similarly, although groundwater discharge to the river does occur, the use of untreated river water for potable water use is also unlikely and is not known to occur. Consideration of these pathways is part of the intentional conservatism of the problem formulation, complies with evaluation of the designated beneficial uses of groundwater and surface water and would overestimate risks for these pathways.

O.2.1.6 Erodible/Mass Wasting Soil

As discussed in Section O.1.2.2, an evaluation of the overland transport pathway to the River OU was conducted for the Landfill, Sandblast Area, and Bulb Slope AOPCs. Under current and likely future conditions, the only viable exposure route for human receptors for the mass wasting pathway is through bioaccumulation and subsequent consumption of smallmouth bass and crayfish. Direct exposure to eroded soils in the River OU is unlikely for humans. Selection of COPCs for the mass wasting pathway was based on multiple lines of evaluation including a comparison to reference sediments and a comparison to sediment bioaccumulation SLVs.

In the first step of this evaluation, the data from surface soils (0 to 1 ft bgs) that were collected from areas that may potentially be subject to erosion or mass wasting (as identified in Sections 3.5 and 10.1 of the main text) were compared to the inorganic concentrations in the site-specific Reference Area sediment (Table L-8). Those inorganic COIs that were detected less than the Reference Area were not retained as COPCs and were not evaluated further. The organic COIs and remaining inorganic COIs identified as potentially bioaccumulative were then compared to

sediment SLVs protective of human health and the results are presented in Tables O.2-4 to O.2-6. The following describes the erodible/mass wasting evaluation at each of the three AOPCs.

Landfill AOPC (0-1 ft bgs)

Bioaccumulative COIs in surface soils that exceed sediment SLVs included cadmium, lead, manganese, thallium, zinc, 4,4'-DDT, total DDTs, dieldrin, PCBs (Aroclor 1254, Aroclor 1260, and total PCBs as Aroclors), bis(2-ethyl hexyl)phthalate (B2EHP), carbazole, dibenzofuran, and di-n-butyl phthalate (Table O.2-4) were retained as COPCs. All of these COPCs, except for 4,4'-DDT, total DDTs, and dieldrin, were already evaluated for the River OU using Forebay data. PCBs and B2EHP were identified as COPCs for the River OU (Table M-46). In the absence of SLVs for cadmium, lead, manganese, thallium, and zinc, reference UPLs were used as surrogates. For these chemicals, C/SLV does not indicate that an acceptable risk level was exceeded, only that the site concentration is greater than the Reference UPL. Carbazole, dibenzofuran, and di-n-butyl phthalate were retained as COPCs due to lack of SLVs. Three pesticides, 4-4'-DDT, total DDTs, and dieldrin were retained because they exceeded the sediment SLVs. DDT and total DDTs were detected in 7 of 10 erodible soil samples and dieldrin in one of 10 samples. The magnitude of exceedance above the sediment SLV was more than two orders of magnitude, primarily because the SLVs are low. Due to the finite mass of erodible soils and the fact that erosion potential at this AOPC is low (Section 10), it is unlikely that these three COIs would actually have much potential to be released to the River OU.

However, due to the exceedances of human health SLVs and/or their potential to bioaccumulate, as well as the potential for these areas to be sources of contamination (e.g., erosion or mass wasting), further evaluation of this area is recommended for the Upland OU, which may include a BHHRA.

Sandblast Area AOPC (0-1 ft bgs)

The bioaccumulative COIs in surface soils that exceeded sediment SLVs included cadmium, lead, manganese, zinc, tributyltin, chlorinated pesticides, PCBs (Aroclor 1260 and total PCBs as Aroclors), 1,2,4-trimethylbenzene, 4-isopropyltoluene, B2EHP, and carbazole were retained as COPCs (Table O.2-5). All of these COPCs, except for tributyltin, chlorinated pesticides, and two VOCs, were already evaluated for the River OU using Forebay data. PCBs and B2EHP were identified as COPCs for the River OU (Table M-46). In the absence of SLVs for cadmium, lead, manganese, and zinc, reference UPLs were used as surrogates. For these chemicals, C/SLV does not indicate that an acceptable risk level was exceeded, only that the site concentration is greater than the Reference UPL. A few bioaccumulative pesticide compounds and tributyltin were also retained since they were detected in the erodible soils at concentrations exceeding the bioaccumulation SLVs, but had not been analyzed in the River OU media. Since the potential for mass wasting to actually occur is low, as described in Section 10, the chlorinated pesticides and tributyltin are unlikely to be released in significant quantities to the River OU. Two VOCs (1,2,4-trimethylbenzene and 4-isopropyltoluene) did not have SLVs but are eliminated from bioaccumulation concerns since VOCs are typically not persistent in the aquatic environment after release. Carbazole was retained as COPCs due to lack of an SLV.

However, due to the exceedances of human health SLVs and/or their potential to bioaccumulate, as well as the potential for these areas to be sources of contamination (e.g., erosion or mass

wasting), further evaluation of this area is recommended for the Upland OU, which may include a BHHRA.

Bulb Slope AOPC (0-1 ft bgs)

As shown in Table O.2-6, lead, mercury and PCBs (Aroclor 1260 and Total PCBs as Aroclors) exceeded the sediment SLVs and were retained as COPCs for the bioaccumulation pathway (if mass wasting soils from the Bulb Slope AOPC were to enter the Forebay). PCBs and mercury are already included as COPCs for the River OU. In the absence of SLVs for lead and mercury, reference UPLs were used as surrogates. For these chemicals, C/SLV does not indicate that an acceptable risk level was exceeded, only that the site concentration is greater than the Reference UPL. Although mercury in Forebay sediments is not elevated in comparison to the Reference Area sediments, it has been retained as a COPC because of its selection as a COPC for fish tissues. Because the Bulb Slope area is well vegetated, erosional activities are unlikely to occur (Section 10).

O.2.1.7 Selection and Use of SLVs

SLVs were identified for the majority of the COIs by following the hierarchical process of SLV selection (Appendix J). To the extent possible, surrogate chemicals were used to identify SLVs for COIs lacking their own SLVs. Only a few COIs remained without SLVs, and are identified in Table 7-4.

Human health-protective SLVs were available for all COIs that were detected in soil and groundwater in the Upland OU media (Table 7-4). Among COIs that were never detected, a small number of VOCs and SVOCs did not have SLVs, primarily some alkylbenzenes, chloroethers, and chlorotoluenes. Due to the lack of toxicity information for these chemicals, no further evaluation of the uncertainty related to them can be done. However, the fact that they were never detected lessens the potential for underestimation of risk.

DEQ SLVs for the evaluation of the construction workers and excavation workers were available only for a limited number of COIs and were supplemented with industrial soil RSLs that assume a much higher duration of exposure with a slightly lower level of soil ingestion. The effect of using the RSLs is likely to overestimate the number of COPCs and overestimate the screening-level risks and hazards for these receptors.

O.2.1.7.1 Updates to SLVs

As part of the uncertainty assessment, there have been updates to the agreed upon sources of SLVs. These include updates to DEQ RBCs (2011) (affecting direct contact pathways for soil and groundwater), DEQ RBCs for petroleum hydrocarbons (2011), DEQ's Water Quality Criteria (WQC; 2011) (affecting groundwater and surface water SLVs for fish ingestion pathway), and USEPA RSLs (2012) (affecting direct contact pathways for soil and groundwater). Since USEPA RSLs are likely to update again prior to a Level III baseline for the Upland OU, a comparison of SLVs was not conducted at this time. If these updates contain more stringent SLVs, those analytes will be considered for further evaluation as to whether they should be included in the BHHRA for the Upland OU or in a separate document. They will also be considered during future monitoring activities for the River OU, if additional surface water data are collected.

O.2.2 River OU

The uncertainties associated with tissue and sediment data as well as with the confidence in available screening criteria or COIs without SLVs are discussed in further detail in this section.

O.2.2.1 Sensitivity Analysis for HHRA

The following data sets were considered for the data quality evaluation:

- Random Forebay Data: surface water, sediment, crayfish, smallmouth bass, and largescale sucker
- Targeted Forebay Data:
    - Eagle Creek: sediment
    - Goose Island: sediment and crayfish

Tables K-9 through K-12 provide an analysis of MDLs in relation to SLVs for the River OU media. Analytes with MDLs that exceeded the SLVs included Aroclors in sediment, crayfish, smallmouth bass and large-scale sucker. Antimony and vanadium had MDLs exceeding SLVs in surface water. PCB Congeners 126 and 169 generally had MDLs exceeding the SLVs in all media. The SLVs for PCB Aroclors and congeners are drawn from DEQ's bioaccumulation-based SLVs (DEQ 2007) and are extremely low since they are based on literature-derived toxicity values and exposure assumptions, without regard to whether the SLVs are analytically achievable. The use of congener data to evaluate PCBs in the River OU greatly reduces dependence on the Aroclor data, thus the uncertainties related to the Aroclor MDLs do not affect the HHRA. PCB congeners 126 and 169 were reported in many samples, thus increasing the level of confidence in the sensitivity of the data. Therefore, no further assessment of uncertainty regarding these analytes is needed.

O.2.2.2 Statistical Background Comparison Screening

As discussed in Section 8.1 of the main text, the goal established in the RI/FS MP (URS 2007a) for statistical power associated with the background comparison was achieved (i.e., to detect "one-standard-deviation-away"). However, for some Forebay media, this one-standard-deviation is high due to the high data variability, which could not be controlled because of the inherent heterogeneity. As an artifact of this high data variability, MDDs greater than 100% of the reference mean were calculated for several metals in Forebay tissue (Table L-4) and included the following:

Forebay Tissues

- Crayfish – lead
- Smallmouth Bass – chromium

Although the null hypothesis was not rejected, the statistical power to detect substantial differences between the site and Reference Area datasets for metals with MDDs greater than 100% of the reference mean might be limited. Since the results of the statistical background comparison indicated that concentrations of these metals were present below or equal to that of the Reference Area levels, these metals were not carried to the COPC SLV screening step in

Section 11 (HHRA). However, the high MDDs (greater than 100% of the reference mean) present an uncertainty with this finding.

To address the uncertainty with the results of the statistical background comparison, these metals were subjected to a risk-based screening evaluation, herein. The purpose of this evaluation is to explore whether or not these metals should be included as COPCs, and ultimately advanced to the next level of RA or directly to the FS. A weight-of-evidence approach similar to the one implemented in Section 11 (HHRA) was used to evaluate these metals.

The following sequential steps summarize the risk screening process used to evaluate metals with MDDs greater than 100% of the reference mean:

- SLVs protective of human health receptors were compared to the appropriate EPCs, which are the lower of the 95% UCLs and maximum detected concentrations) for each analyte.
- Magnitude of SLV exceedances, detection frequency, confidence in the SLV, comparison of AOPC vs. Reference Area concentration ranges, and other lines of evidence were evaluated.
- Spatial distribution of the concentrations relative to the site-specific background UPLs and SLVs was assessed by referencing existing figures presented in the main RI report.

The human health SLVs presented in Appendix J were compared to the EPCs calculated for Forebay tissues (subsistence and recreational fisher) (Tables O.2-7). SLVs for subsistence and recreational fisher varied due to rates of consumption differences, the more conservative SLV was initially used in the screening of this analysis.

Based on this weight-of-evidence approach, those COPCs that truly warrant additional investigation or risk management were identified and discussed below.

Forebay Tissues

Crayfish. Lead was the only metal with a high MDD with a generated statistical background comparison of 108% (Table L-4), which is just slightly over 100%. The 95% UCL of 0.925 mg/kg was used as the lead EPC, which exceeds the SLV of 0.5 mg/kg (based on the DEQ non-carcinogen for subsistence ATLs). Nine of seventeen crayfish tissue samples, located throughout the Forebay, were above the lead SLV. However, crayfish lead concentrations within the Forebay range from 0.0980 mg/kg to 2.66 mg/kg (Table L-4) and were similar to lead concentrations in Reference Area crayfish tissue, which ranged from 0.0560 mg/kg to 1.55 mg/kg (Table L-4). There are uncertainties involved as to whether this pathway is complete. Shellfish consumption appears to be relatively minor or minimal, relative to finfish consumption. Crayfish have a large home range and may be exposed to COPCs from sources other than the Forebay. Crayfish may live to 5 or 6 years and often may live as long as 10 years (URS 2007a). Therefore, although the Forebay crayfish random samples were collected after the sediment removal action, they are very likely to have had exposure to pre-removal concentrations of Forebay COPCs for several years prior to their sample collection. Therefore, lead is not recommended for further evaluation.

Smallmouth Bass. Only one metal, chromium, had a MDD greater than 100% of the reference mean. There was no exceedance of the SLV, therefore, further evaluation is not warranted.

Summary. None of the metals with high MDDs demonstrated for Forebay tissues are recommended for further evaluation in the form of either a baseline HHRA or remediation of the locations above the UPL.

O.2.2.3 COPC Identification and Screening Risk Estimates

Similar to the discussion presented in Section O.2.1.5, a major uncertainty for PCBs in the River OU is that evaluation of the human milk ingestion pathway has not been performed and the non-cancer hazards to infants have not been estimated in this problem formulation. Evaluation of this pathway is unlikely to increase estimates of ELCR but is likely to increase non-cancer HQs by up to a factor of 25, according to DEQ (2010b). The non-cancer values corresponding to DEQ's tissue and sediment SLVs for PCBs are not available. Therefore, a non-cancer SLV could not be readily estimated in the manner that was done for the Upland OU soils. However, PCBs have already been included as COPCs for all the River OU media even without consideration of the milk ingestion pathway.

As noted earlier, all estimates of C/SLV ratios, HI and ELCR based on crayfish tissue and, more importantly, the smallmouth bass tissue, must be interpreted with caution and should not be assumed to represent current exposure conditions in the Forebay. Use of these data likely overestimates the potential risks.

Although they are generally considered to be readily metabolized in fish tissues, a number of PAHs were reported in the tissue of smallmouth bass. ATLs for the subsistence and recreational fish consumer were developed for the PAHs (Table J-4f) and the lower of the UCL and maximum were compared to the ATLs. The magnitude of exceedance was relatively small and was generally less than a factor of 4. The only exceptions were benzo(a)pyrene and dibenzo(a,h)anthracene which had higher ratios. Whether these cPAHs are likely to pose a threat to human health is uncertain. PAH levels in fish are usually low because this group rapidly metabolizes PAHs (Lawrence and Weber 1984); furthermore, higher molecular weight PAHs, which include the largest class of chemical carcinogens, do not seem to accumulate in fish (West et al. 1984). In general, free (unmetabolized) PAHs are detected at lower concentrations in muscle than in liver, gonads, stomach, or gall bladder (bile), although liver concentrations are probably more associated with short-term exposure and muscle concentrations are probably more associated with long-term bioaccumulation (Hellou 1996). Whether the PAHs in the smallmouth bass are present in the edible portions of the fish such as muscle, or in the portions that are discarded during cooking (e.g., viscera) is unknown since the smallmouth bass data for the Forebay are based on whole-body analyses.

Since PAHs in the Forebay sediments were not elevated in relation to Reference Area sediments, the source of PAHs to elevated concentrations in Forebay smallmouth bass is unknown. It may be related to pre-removal concentrations of PAHs in sediments and feeding range habits of the bass among other factors.

B2EHP

B2EHP was reported in several media including groundwater in the Upland AOPCs, and in sediment and smallmouth bass tissue in the River OU. It was not retained as a COPC based on an understanding of its properties, its spatial distribution and its potential to contribute to human health risk by the fish consumption pathway.

In the aquatic environment, lipophilic organic compounds (Log K_{ow} > 5; DEQ 1998) such as phthalates would be expected to bioaccumulate in aquatic organisms. However, B2EHP is not as readily absorbed into fish as are other phthalates. For example, gill uptake efficiencies in English sole (Parophrys vetulus) from single-pass exposures to phthalates ranged from 42% for butylbenzyl phthalate (Log K_{ow} =5.8), 12% for di-n-octyl phthalate (Log K_{ow} =9.2), 11% for diethylphthalate (Log K_{ow} =3.2), and 3% for B2EHP (Log K_{ow} =8.7) (Boese 1984). If absorbed into fish, there is little bioaccumulation of B2EHP or its first metabolic degradation product (monoethylhexyl phthalate [MEHP]) due to an efficient biotransformation mechanisms (Barron et al. 1989). Relative to other components of a model aquatic ecosystem (snails, clams, Daphnia, and aquatic plants), B2EHP was rapidly metabolized in a guppy species (*Lebistes reticulatus*) (Metcalf et al. 1973). Similarly, B2EHP and MEHP were reduced to near-background concentrations within one week after a four-week dietary exposure of Atlantic salmon (*Salmo salar*) (Norman et al. 2007). Perhaps due to its relatively rapid metabolism, there are no readily available data on the specific distribution of B2EHP among tissues within a fish. However, butylbenzyl phthalate bioconcentrated in viscera of bluegill sunfish (*Lepomis macrochirus*) approximately 5-fold greater than in fillet, following a 3-day exposure period (Carr et al. 1997). In general, these collective data indicate that B2EHP is not highly bioaccumulative in fish, and within fish, tends to occur to a lesser extent in muscle (fillet) than in the viscera.

Arsenic

Arsenic in fish and crayfish tissue was initially evaluated on the basis of SLVs that assume all the arsenic is present as the more toxic inorganic arsenic. In reality, the majority of arsenic in shellfish and finfish tissue is likely to be organic arsenic, which exerts minimal toxicity. This initial assumption is likely to overestimate risks related to arsenic by the shellfish and finfish consumption pathway.

O.2.2.4 Site Characterization Data

Extensive discussion of the quality and sensitivity of the data used to characterize the River OU media has been provided in Sections 7, 8, 9 (in conjunction with Appendix K).

O.2.2.5 Receptors and Exposure Pathways

A common uncertainty for subsistence and recreational fishers is that although site-specific consumption of shellfish tissue from the Forebay is theoretically possible, the actual occurrence of shellfishing and rates of consumption have been difficult to establish with certainty.

Another uncertainty is that actual use of the Forebay area for subsistence fishing use appears to be unlikely. As noted in the RI/FS MP (URS, 2007a), the Forebay area is of low habitat quality and is not considered to be as attractive for fishing as other portions of the Columbia River. Although tribal fishers may use the area to some degree, it is unlikely that sole usage of the Forebay for subsistence fishing actually occurs.

Although it is theoretically possible, the likelihood of potable use of unfiltered, untreated river water by receptors in the Forebay area or immediately downstream is also unlikely.

O.2.2.6 Selection and Use of SLVs

SLVs were identified for the majority of the COIs by following the hierarchical process of SLV selection (Appendix J). To the extent possible, surrogate chemicals were used to identify SLVs for COIs lacking their own SLVs. Only a few COIs remained without SLVs, and are identified in Table 7-6.

Bioaccumulative COIs without human health SLVs in the River OU consist primarily of several phthalate compounds, carbazole and p-cresol, as well as a few metals (Table J-7). The potential for bioaccumulation was evaluated by first identifying COPCs in the tissue data and using the results to guide the identification of COPCs for sediments. The phthalates were evaluated by reference to B2EHP. Although B2EHP is classified as a carcinogen, it has a relatively high soil SLV of 150 mg/kg for direct contact pathways unlike many other more potent carcinogens (Table J-4a). ATLs were developed for B2EHP in tissue for the subsistence and recreational fishers. Its occurrence is widespread and it was reported in both the Forebay and Reference media. Therefore it was evaluated in the context of whether it exceeded the ATLs and whether Forebay sediment concentrations exceeded Reference Area sediment concentrations. This multiple lines of evidence approach was useful in minimizing the level of uncertainty associated with these COIs. However, all COIs without SLVs or ATLs or surrogates were retained as COPCs.

COIs for which the appropriate speciation data were not available were screened using the more conservative of available SLVs, e.g., chromium was evaluated by using SLVs based on the more toxic hexavalent chromium rather than trivalent chromium. In addition, fluoranthene and pyrene bioaccumulation SLVs were used as surrogates for the other PAHs detected in tissue. This uncertainty is minimized by that fact that the detected concentrations of all PAHs in fish tissue are generally very low. Arsenic in crayfish and fish tissue is also likely to occur as the less toxic organic form of arsenic than the more toxic inorganic form. By applying the arsenic SLV that is based on inorganic arsenic, the potential risk associated with arsenic in tissue is likely overestimated.

The subsistence fisher and recreational fisher SLVs for sediment and tissue are based on estimated rates of finfish and shellfish consumption that are likely higher than actual consumption for these fishers in the Forebay. Therefore, the screening level risk estimates for these receptors are likely to be overestimated.

O.2.2.6.1 Updates to SLVs

As part of the uncertainty assessment, there have been updates to the agreed upon sources of SLVs, DEQ WQC (2011) (affecting surface water SLVs for fish ingestion pathway). If this update contains more stringent SLVs, they will be considered for further evaluation as to whether they should be included in subsequent River OU evaluations (e.g., future monitoring activities) if additional surface water data are collected.

O.3 ERA Uncertainty Assessment

This section describes the uncertainties specific to the ERAs conducted for the Upland and River OUs.

O.3.1 Upland OU

O.3.1.1 Data Sensitivity Analysis for ERA

To evaluate the quality of the data for specific use in the Level II ERA, the MDLs for the non-detect results from the Upland OU were compared with the lowest of the ecologically protective screening levels available for each receptor group (Appendix J). The MDL evaluation was only performed for analytes with a detection frequency of less than 100%; those with at least one non-detect sample. The data for analytes that have actual measurable detections above MDLs at every location are less uncertain than those that were not quantifiable in some samples. For individual chemicals that are consistently non-detect or estimated, there is uncertainty that is discussed further in Section 7.0, of the main RI, and below. There is relatively less uncertainty for chemicals for which there are some detected results above the MDL.

The following datasets were considered in the Upland OU data quality evaluation:

- Landfill AOPC: soil, groundwater, and co-located (adjacent) seep water and surface water
- Sandblast Area AOPC: soil and groundwater.
- Pistol Range AOPC: soil and groundwater (All COIs analyzed for in lagoon sediments were detected in all samples, so no MDL comparison was required)
- Bulb Slope: soil

Tables K-5 through K-8 in Appendix K present the results of this analysis for the Landfill, Sandblast Area, Pistol Range, and Bulb Slope AOPCs, respectively. Various MDLs for soils, groundwater, seep water and potentially mass wasting soils exceeded the lowest ecological SLVs at the Landfill AOPC (Table K-5). At the Sandblast Area AOPC, two metals, two SVOCs, various pesticides, and seven VOCs had MDLs greater than the lowest ecological SLVs (Table K-6). Of these, only three VOCs in soils that had 100% nondetects had MDLs greater than the lowest ecological SLV (Table K-6). For groundwater at the Sandblast Area AOPC, two VOCs, two SVOCs, and one pesticide had MDLs greater than the lowest ecological SLVs (Table K-6). Several SVOCs, pesticides and PCBs in the potentially erodible soils at the Sandblast Area AOPC also had MDLs greater than the lowest ecological SLV (Table K-6). At the Pistol Range AOPC, only antimony had MDLs greater than the lowest screening level (Table K-7). All MDLs at the Bulb Slope AOPC were below the screening levels (Table K-8).

In general, the majority of the MDLs are equal to or lower than the SLVs, but a few analytes (some PAHs, pesticides, herbicides, PCB-Aroclors) exceed their corresponding SLVs for certain media. Exceedance of the lowest ecological SLV does not mean that the MDL exceeds the screening level for all receptors. It is unlikely that additional analysis will be needed for the analytes and media with elevated MDLs, as shown in the data usability tables presented in Appendix K, for the following reasons:

- Elevated MDLs demonstrated for a specific analyte in one medium, but not in any other media may not be an issue due to the chemical properties of that particular analyte. For example, elevated MDLs for PCB-Aroclors in groundwater with 0% non-detects may reflect a combination of factors: the limits of analytical technology for detecting PCBs in water samples, the generally low solubility of PCBs in water and the use of extremely low, theoretically estimated risk screening values for comparison.
- Analytes for which the MDLs are exceeded in all samples (e.g., high molecular weight PAHs [HPAHs]) likely reflect the current analytical technology limitations.
- The lowest ecological SLVs were used, which may be replaced with more relevant screening levels in the RI Report and RAs.
- Many of the analytes were detected at a frequency greater than 5% (and were greater than background levels for metals) and will already be included as COIs in the ERA.

The use of flagged data increases the level of uncertainty associated with the EPC; however, none of the data were R flagged. In general, the historical and more recent data utilized in this ERA represents the best available analytical data and, as detailed in Section 7.0 of the main RI, the quality of the data was sufficient to provide for a defensible ERA.

O.3.1.2 Statistical Background Comparison Screening

As discussed in Section 8.1 of the main text, the goal established in the RI/FS MP (URS 2007a) for statistical power associated with the background comparison was achieved (i.e., to detect "one-standard-deviation-away"). However, for some Upland soils, this one-standard-deviation is high due to the high data variability, which could not be controlled because of the inherent heterogeneity of the Upland soils. As an artifact of this high data variability, MDDs greater than 100% of the reference mean were calculated for several metals in soil of the Landfill, Sandblast Area, and the four combined AOPCs (Table L-1). Although the null hypothesis was not rejected, the statistical power to detect substantial differences between the site and Reference Area datasets for metals with MDDs greater than 100% of the reference mean might be limited.

For metals with data sets containing a large numbers of non-detects, the statistical methodology used in the background comparison may present limitations. Therefore, comparisons also included an examination of the data distributions using box-and-whisker plots. These plots are included in Appendix L. Examination of these plots allowed for the identification of data sets in which the analyte concentrations in the site data were clearly higher than the reference area concentrations, even when the population-to-population comparisons were inconclusive. These metals were ultimately included in the SLV comparison presented in Section 12 (ERA). The final list of metal COIs considered to have concentrations higher than the Reference Area are provided in Table 8-1 of the main report.

The results of the statistical background comparison indicated that concentrations of several metals with high MDDs (greater than 100% of the reference mean) were present below or equal to that of the Reference Area levels. These metals were not carried to the SLV comparison step (not presented in Table 8-1). Since the high MDDs present an uncertainty with this approach, these metals were evaluated further below.

Metals with MDDs greater than 100% of the reference mean that were not included in the SLV comparison in Section 12 (ERA) include the following:

Landfill

- 0 to 1 ft bgs – arsenic, chromium, copper, and nickel
- 0 to 3 ft bgs – chromium, copper, magnesium, and nickel

Sandblast Area

- 0 to 1 ft bgs and 0 to 3 ft bgs – copper, magnesium, and mercury

Four Combined AOPCs

- 0 to 1 ft bgs and 0 to 3 ft bgs – copper and magnesium

Magnesium is an essential nutrient; therefore, it was eliminated from further evaluation and no further investigation is recommended. To address the uncertainty with the results of the statistical background comparison, the remaining metals were subjected to a risk-based screening evaluation. The purpose of this evaluation is to explore whether or not these metals should be included as CPECs, and ultimately advanced to the next level of RA or directly to the FS. A weight-of-evidence approach similar to the one implemented in Section 12 (ERA) was used to evaluate these metals.

The following sequential steps summarize the risk screening process used to evaluate metals with MDDs greater than 100% of the reference mean that were not included in the SLV comparison:

- SLVs protective of ecological receptors were compared to the appropriate EPCs (i.e., 95% UCLs for mobile receptors and maximum concentrations for stationary receptors) for each analyte.
- Magnitude of SLV exceedances, detection frequency, confidence in the SLV, comparison of AOPC vs. Reference Area concentration ranges, and other lines of evidence were evaluated.
- Spatial distribution of the concentrations relative to the site-specific background UPLs and SLVs was assessed by referencing existing figures presented in the main RI report.

The ecological SLVs presented in Appendix J were compared to the EPCs calculated for 0 to 1 ft bgs and 0 to 3 ft bgs soils (Table O.3-1). Based on this weight-of-evidence approach, those CPECs that truly warrant additional investigation or risk management were identified and discussed below. A unitless receptor designator that dictates the level of protection appropriate for a certain site: Q of 1 is applicable to all receptors with the exception of mammals, for which a Q of 5 was used.

Landfill AOPC

. . EPCs for the four metals in 0 to 1 ft bgs soils and three metals in 0 to 3 ft bgs soils with high MDDs exceed at least one receptor-specific SLV:

- 0 to 1 ft bgs – arsenic, chromium, copper, and nickel
- 0 to 3 ft bgs – chromium, copper, and nickel.

Arsenic. The MDD generated for arsenic in soil during the statistical background comparison is 148% for 0 to 1 ft bgs, while the MDD for 0 to 3 ft bgs is below 100% (i.e., no uncertainty needs to be addressed) (Table L-1).

As shown in Table O.3-1, toxicity ratios (EPC/SLV) for all receptors with the exception of plants are below 1.0. The toxicity ratio for plants is very low at 1.7. Concentrations of arsenic in Landfill soils from 0 to 1 ft bgs range from 1.5 mg/kg to 30.1 mg/kg, and concentrations in Upland Reference Area soils range from 1.09 mg/kg to 5.18 mg/kg (Table L-1). The location with the maximum detected concentration of 30.1 mg/kg is BIL05, just east of the Lead Hot Spot Test Pit #1. This is the only sample with a concentration greater than the plant SLV. No other samples exceed SLVs for any receptors.

Based on the relatively low MDD, low arsenic concentrations, and general lack of SLV exceedances in 0 to 1 ft soils (and 1 to 3 ft soils), arsenic is not recommended for further evaluation at the Landfill AOPC.

Chromium. The MDDs generated for chromium in soil during the statistical background comparison are 598% for 0 to 1 ft bgs and 1559% for 0 to 3 ft bgs (Table L-1).

As shown in Table O.3-1, toxicity ratios for plants and soil invertebrates range from 29 (0 to 1 ft bgs) to 69 (0 to 3 ft bgs), with the highest concentrations of chromium occurring between 1 to 3 ft bgs. The toxicity ratios for birds range from 8.6 (0 to 1 ft bgs) to 21 (0 to 3 ft bgs). With the exception of the SLV for mammals, all risk-based SLVs for chromium are below the site-specific background UPL of 28.1 mg/kg. Therefore, the UPL was used as the default soil SLV for these receptors. The soil SLV for mammals of 34 mg/kg is similar to the site-specific UPL, and when adjusted for a receptor designator (i.e., Q) of 5.0 (i.e., an SLV of 170 mg/kg), the toxicity ratios for mammals range from 1.4 (0 to 1 ft bgs) to 3.5 (0 to 3 ft bgs).

Concentrations of chromium in Landfill AOPC soils from 0 to 1 ft bgs range from 14.7 mg/kg to 801 mg/kg, and soils from 0 to 3 ft bgs range from 14.7 mg/kg to 1950 mg/kg (Table L-1). Concentrations of chromium in Upland Reference Area soils range from 15.5 mg/kg to 27.3 mg/kg (Table L-1). Highest levels of chromium occur in the Gully Test Pit and just downgradient of this area (Figure 12-6): BIL07 (0 to 1 ft bgs maximum), BIL08, BIL17, BIL18 (1 to 3 ft bgs maximum), and BIL-22. . BIL05, located just east of Lead Hot Spot Test Pit #1, also has elevated chromium (237 mg/kg), as well as BIL11 (50 mg/kg) to a lesser extent. Chromium concentrations in the remaining samples from 0 to 3 ft bgs are equivalent to or below the Reference Area UPL.

Elevated toxicity ratios were calculated for plants, soil invertebrates, and birds, which also reflect the high chromium levels in certain areas of the Landfill AOPC compared to Reference Area concentrations. Therefore, chromium is recommended for further evaluation.

Copper. The MDDs generated for copper in soil during the statistical background comparison are 195% for 0 to 1 foot bgs and 228% for 0 to 3 ft bgs (Table L-1).

As shown in Table O.3-1, respective toxicity ratios for plants and soil invertebrates are 7.1 and 6.2, respectively, for both depth intervals because the maximum concentration of copper, i.e., the EPC, occurs at the surface between 0 and 1 foot bgs. The toxicity ratios for birds range from 3.0 (0 to 1 foot bgs) to 3.4 (0 to 3 ft bgs) and are below 5.0 for mammals (the point of departure, or Q designator, for this receptor group). Toxicity ratios for birds and mammals are based on the

Reference Area UPL, as their risk-based SLVs are below the site-specific background UPL of 56.7 mg/kg. Therefore, the UPL was used as the default soil SLV for these receptors.

Concentrations of copper in Landfill AOPC soils for both depth intervals range from 23.5 mg/kg to 494 mg/kg (Table L-1). Concentrations of copper in Upland Reference Area soils range from 22.8 mg/kg to 58.2 mg/kg (Table L-1). The maximum concentration of copper occurs at BIL05, just east of Lead Hot Spot Test Pit #1, and the next highest concentration of 378 mg/kg was detected between 1 and 3 ft bgs at BIL22 in the Gully Test Pit (Figure 12-6). Elevated copper was also detected at BIL11 to the west of Lead Hot Spot Test Pit #1; BIL06 within Lead Hot Spot Test Pit #2; and BIL03 near the southern boundary of the Landfill AOPC. Copper concentrations in the remaining samples from 0 to 3 ft bgs are similar to or below the Reference Area UPL.

Elevated toxicity ratios were calculated for plants, soil invertebrates, and birds, which also reflect the high copper levels in specific areas of the Landfill AOPC compared to Reference Area concentrations. Therefore, copper is recommended for further evaluation.

Nickel. The MDDs generated for nickel in soil during the statistical background comparison are 492% for 0 to 1 foot bgs and 1458% for 0 to 3 ft bgs (Table L-1).

As shown in Table O.3-1, toxicity ratios for plants and soil invertebrates range from 2.0 (0 to 1 ft bgs) to 42 (0 to 3 ft bgs), with the highest concentrations of nickel occurring between 1 to 3 ft bgs. The toxicity ratios for birds range from 0.83 (0 to 1 ft bgs) to 2.2 (0 to 3 ft bgs) and are below 5.0 for mammals (the point of departure, or Q designator, for this receptor group).

Concentrations of nickel in Landfill AOPC soils from 0 to 1 ft bgs range from 13.4 mg/kg to 570 mg/kg, and Landfill AOPC soils from 0 to 3 ft bgs range from 13.4 mg/kg to 1610 mg/kg (Table L-1). Concentrations of nickel in Upland Reference Area soils range from 11.5 mg/kg to 26.1 mg/kg (Table L-1). Highest levels of nickel in Landfill AOPC soils appear to be co-located with highest concentrations of chromium and occur in the Gully Test Pit and just downgradient of this area (Figure 12-6): BIL07 (0 to 1 ft bgs maximum), BIL08, BIL17, BIL18 (1 to 3 ft bgs maximum), and BIL-22. . BIL05, located just east of Lead Hot Spot Test Pit #1, also has elevated nickel (170 mg/kg), as well as BIL11 (42.4 mg/kg) and BIL01 (40 mg/kg) to a lesser extent. Nickel concentrations in the remaining samples from 0 to 3 ft bgs are equivalent to or below the Reference Area UPL.

Elevated toxicity ratios were calculated for plants, soil invertebrates, and birds to a lesser degree at depth only, which also reflect the high nickel levels in certain areas of the Landfill AOPC compared to Reference Area concentrations. Therefore, nickel is recommended for further evaluation.

Summary. Of the metals with high MDDs demonstrated for Landfill soils, the following are recommended for further evaluation in the form of either a Level III Baseline Ecological Risk Assessment (BERA) (for all Upland receptors) or remediation of the locations above the UPL:

- Chromium
- Copper
- Nickel

In a Level III BERA, these metals should be evaluated for both soil depth intervals for Landfill soils. . . . . .

Sandblast Area AOPC

. EPCs for the two metals in 0 to 1 ft bgs soils and 0 to 3 ft bgs soils with high MDDs exceed at least one SLV: copper and mercury.

Copper. The MDDs generated for copper in soil during the statistical background comparison are 148% for 0 to 1 ft bgs and 134% for 0 to 3 ft bgs (Table L-1).

As shown in Table O.3-1, respective toxicity ratios for plants and soil invertebrates are 4.6 and 4.0, respectively (same for both depth intervals). The highest concentrations of copper occur at the surface. The toxicity ratios for birds range from 1.6 (0 to 3 ft bgs) to 1.8 (0 to 1 ft bgs), and are below 5.0 for mammals (Q designator for this receptor group). Risk-based SLVs for birds and mammals are below the site-specific background UPL for copper of 56.7 mg/kg. Therefore, the UPL was used as the default soil SLV for these receptors.

Concentrations of copper in Sandblast Area AOPC soils for both depth intervals range from 13.2 mg/kg to 319 mg/kg (Table L-1). Concentrations of copper in Upland Reference Area soils range from 22.8 mg/kg to 58.2 mg/kg (Table L-1). Highest levels of copper (greater than 100 mg/kg) occur near the HMSA (SBB18, maximum detection), in the eastern portion of the Equipment Laydown Area (LD-01, LD-02, LD-03, LD-05, LD-10, and LD-11), west side of the Equipment Laydown Area (TRA-04), near the former HMSA (DSA11), and near the southern boundary of the Spent Sandblast Grit Disposal Area (SBB12). Several other exceedances of the Upland Reference Area UPL are scattered throughout the Sandblast Area AOPC.

Given that no special status plant or soil invertebrate species are present in the Upland OU (protection is afforded at the community level), the 95% UCL concentration of copper at the Sandblast Area was considered. When the UCL for the 0 to 1 ft interval is used as the EPC instead of the maximum concentration of copper, the toxicity ratios decrease to 1.47 for plants and 1.29 for soil invertebrates.

The approach for the Level II Screening Assessment focused on protection of birds at the individual level to account for the bald eagle, and possible transient juvenile spotted owls, but these special-status species are not likely to forage at the 3.1-acre Sandblast Area AOPC. Owls have not been documented to occur on the island, and bald eagles have been seen roosting in the Upland OU, but these piscivorous birds would be much more likely to forage in the adjacent River OU. Therefore, the minor toxicity ratio exceedances of 1.8 and 1.6 are not considered significant and no exceedances are noted at a Q designator of 5.0, which is more applicable to the birds of the Upland OU. Piscivorous birds were evaluated in the Level II Screening Assessment for the River OU (Section 12.5 of the main text).

Based on the relatively low MDDs, low toxicity ratios based on the 95% UCL, lack of special status species in the Upland OU, and the fact that copper is an essential nutrient for plants and animals (USEPA 2005-2008), copper is not recommended for further evaluation at the Sandblast Area AOPC.

Mercury. The MDDs generated for mercury in soil during the statistical background comparison are 229% for 0 to 1 ft bgs and 209% for 0 to 3 ft bgs (Table L-1).

As shown in Table O.3-1, respective toxicity ratios for plants and soil invertebrates are 2.4 and 7.2, respectively (same for both depth intervals). The highest concentrations of mercury occur at the surface. The toxicity ratios for birds range from 1.7 (0 to 3 ft bgs) to 1.5 (0 to 1 ft bgs) and are below 5.0 for mammals (Q designator for this receptor group). The risk-based SLV for birds is below the site-specific background UPL for mercury of 0.066 mg/kg. Therefore, the UPL was used as the default soil SLV for birds.

Concentrations of mercury in Sandblast Area AOPC soils for both depth intervals range from 0.0114 mg/kg to 0.723 mg/kg (Table L-1, Appendix L). Concentrations of mercury in Upland Reference Area soils range from 0.034 mg/kg to 0.068 mg/kg (Table L-1). Highest levels of mercury occur in the eastern portion of the Equipment Laydown Area (LD-01, LD-02, LD-05, which has the maximum detection, and LD-10) and near the former HMSA (DSA09 and DSA10), and several other exceedances of the Upland Reference Area UPL are scattered throughout the Sandblast Area AOPC.

Elevated toxicity ratios were calculated for plants, soil invertebrates, and birds, which also reflect the high mercury levels in certain areas of the Sandblast Area AOPC compared to Reference Area concentrations. Therefore, mercury is recommended for further evaluation.

Summary. Of the two metals with high MDDs demonstrated for Sandblast Area soils, only mercury is recommended for further evaluation in the form of either a Level III BERA (for all Upland receptors) or remediation of the locations above the UPL. In a Level III BERA, mercury should be evaluated for both soil depth intervals.

All Four AOPCs Combined

As shown in Table O.3-1, copper is the only metal with a high MDD demonstrated for soil from the four combined AOPCs that was not included in the Section 12 (ERA) SLV evaluation. For all four AOPCs combined, toxicity ratios were calculated for the wide ranging receptors that might be exposed to soils from all four AOPCs. The toxicity ratios for all four AOPCs combined were greater than 1 for birds in both soil intervals. However, the toxicity ratio for birds is very low at 1.7. The all four COPCs combined evaluation did not identify any additional CPECs not already identified in the individual AOPC evaluations (see above).

Summary. In summary, although copper was identified as a CPEC for all four AOPCs combined, the toxicity ratio was very low (1.7) and copper was already retained as a CPEC recommended for further evaluation at the Landfill AOPC. Copper is recommended for further evaluation in the form of either a Level III BERA (for birds and mammals that could forage over all four AOPCs) or remediation of the locations above the UPL. In a Level III BERA, this CPEC should be evaluated for both soil depth intervals.

O.3.1.3 CPEC Selection Process

As part of the Level II Screening process (DEQ 2001), several COIs were eliminated as CPECs in soil and groundwater on the basis of detection frequency for the Landfill and Sandblast Area. An evaluation of these COIs, which were detected in soil, groundwater, or both, was performed to understand the implications of not including these COIs in the quantitative screening assessment. In Tables O.3-2 and O.3-3, concentrations of these COIs were compared to SLVs protective of the relevant receptor groups:

- soil: plants, soil invertebrates, and terrestrial birds and mammals

- groundwater: aquatic organisms and aquatic-dependent birds and mammals

In addition, whether or not these COIs were detected in both soil and groundwater from the same AOPC is also considered. Only bioaccumulative COIs (as defined in Table J-7) were compared to SLVs protective of birds and mammals, with the exception of selenium. Although the criteria used to identify bioaccumulative COIs for the River OU indicate selenium is not bioaccumulative in aquatic environments, selenium was included in the screening tables because it is included as a bioaccumulative COI in DEQ's sediment bioaccumulation guidance (2007).

Landfill AOPC

As shown in Table O.3-2 for Landfill AOPC soils, only ethylbenzene was detected at a concentration in exceedance of the SLV protective of soil invertebrates (0-3 ft bgs interval). However, this exceedance is low (resulting in a toxicity ratio of 1.19, Table N-2). Ethylbenzene was detected in one of 20 soil samples (0 to 3 ft bgs) collected from the Landfill AOPC (Table I-1), and the detection was in a surface sample (0 to 1 ft bgs). Because less than 20 samples are available for the 0 to 1 ft depth interval, ethylbenzene was already included in the screening for this depth interval in Section 12.0. The concentration in soil of 2700 µg/kg was detected at BIL04TPG in the Gully Test Pit (Figure 12-7).

Ethylbenzene was detected in one of 22 groundwater samples of the Landfill AOPC as well. The concentration in groundwater of 1 µg/L was detected from MW-05, which is east of the Gully Test Pit (Figure 12-10). This concentration is below the SLV protective of aquatic organisms, and ethylbenzene was not detected in the seep sample collected from the Landfill AOPC.

Based on the low, single detection of ethylbenzene in soil and groundwater at the Landfill AOPC, elimination of this COI from the SLV screening for shallow soils (0 to 3 ft bgs) and groundwater based on detection frequency is not expected to present a significant uncertainty in the ERA, especially since the single detection in soil was already included in the 0-1 ft bgs soil interval evaluation in Section 12.

4,4'-DDE and Total DDTs in groundwater at the Landfill AOPC were eliminated on the basis of detection frequency and were detected above the SLV (Table O.3-2). The concentration of Total DDTs is attributed to the one detection (out of 22 samples) for 4,4'-DDE, as the other DDT isomers were not detected in the 22 groundwater samples from the Landfill. No DDTs were detected in the seep water (Table I-1).

The groundwater 4,4'-DDE concentration of 0.00246 µg/L was detected at a single well (MW-03; Figure 12-10) and down gradient wells closer to the river were all non-detect for 4,4'-DDE. The non-detect MDLs, which range from 0.00195 to 0.1 µg/L, all exceed the surface water benchmark of 0.001 µg/L, indicating that the theoretically based SLV is lower than analytical methods can achieve. In addition, as discussed in Section O.1.2, the assumption that aquatic organisms are exposed to undiluted groundwater concentrations is highly conservative.

4,4'-DDE was detected in one of 23 soil samples (0 to 3 ft bgs) collected from the Landfill AOPC, and this sample is a surface sample (0 to 1 ft bgs). The detected concentration (17 µg/kg) was in surface soil (0 to 1 ft bgs) at BIL04SSI in the Lead Hot-Spot Test Pit #1 (Figure 12-7). Due to the higher detection frequency for 4,4'-DDT in Landfill AOPC soils, 4,4'-DDE was already included in the screening for both depth intervals in Section 12.0 (4,4'-DDE is included in the calculation of Total DDTs). As noted above, 4,4'-DDT (and 4,4'-DDD) was not detected

in groundwater of the Landfill AOPC. Furthermore, no DDT isomers were detected in the seep sample collected from the Landfill.

Based on the low, single detection of 4,4'-DDE in groundwater of the Landfill AOPC and lack of DDT isomers in seep water, elimination of this COI from the SLV screening for groundwater based on detection frequency is not expected to present a significant uncertainty in the ERA.

The remaining COIs that were eliminated on the basis of detection frequency and were detected above the SLV for the Landfill AOPC are two SVOCs (2-methylphenol and p-cresol) and one VOC (carbon disulfide) (Table O.3-2). 2-Methylphenol and p-cresol were detected in one of 23 groundwater samples collected from the Landfill AOPC, and carbon disulfide was detected in one of 22 groundwater samples.

The single detections of the two SVOCs occurred at MW-05, and the single detection of carbon disulfide occurred at MW-09 (Figure 12-10). 2-Methylphenol and p-cresol were not detected in wells closer to the River and were not detected in the seep sample (Table I-1). 2-Methylphenol was not detected in soil at the Landfill AOPC, and p-cresol was only detected in one of 29 soil samples collected from 0 to 3 ft bgs (BIL17, Gully Test Pit; see Figure 12-7). The single detection of p-cresol is below the corresponding soil SLV (Table O.3-2). Neither of these SVOCs is considered to be potentially bioaccumulative (Table O.3-2).

Carbon disulfide was not detected in the seep sample or in any soil samples collected from the Landfill AOPC (Table I-1). In addition, this VOC is not expected to persist once discharged to surface water and is not considered to be potentially bioaccumulative (Table O.3-2).

Based on the single detections of 2-methylphenol, p-cresol, and carbon disulfide in groundwater at the Landfill AOPC, lack of detections in seep water, and the fact that none of these COIs are potentially bioaccumulative, elimination of these COIs from the SLV screening for groundwater based on detection frequency is not expected to present a significant uncertainty in the ERA.

Several pesticides in soil and anthracene in groundwater of the Landfill are potentially bioaccumulative but lack dietary-based SLVs. For these COIs, the uncertainty associated with the low detection frequency was not as easily quantified. Most of the pesticides were detected once in soil, however, none were detected in groundwater (Table I-1). The single detection of these COIs in only one medium of the Landfill AOPC likely demonstrates that elimination of these COIs based on detection frequency is not expected to present a significant uncertainty in the ERA.

Sandblast Area AOPC

None of the COIs eliminated on the basis of detection frequency in soil and groundwater at the Sandblast Area AOPC exceed the corresponding SLVs (Table O.3-3). However, a few butyltins, pesticides, and VOCs in soil and two PAHs in groundwater of the Sandblast Area AOPC are potentially bioaccumulative but lack dietary-based SLVs. In addition, seven COIs in soil lack SLVs protective of plants and soil invertebrates that are exposed through direct contact. For these COIs, the uncertainty associated with the low detection frequency was not as easily quantified. All of these potentially bioaccumulative COIs in soil (with the exception of isopropylbenzene in the direct push groundwater data set) (Table I-2), however, were never detected in groundwater, and the two potentially bioaccumulative COIs (PAHs) in groundwater were detected below the direct toxicity-based SLVs. For these reasons, elimination of these COIs based on detection frequency is not expected to present a significant uncertainty in the ERA.

O.3.1.4 Calculation of Total LPAHs and Total HPAHs

USEPA (2005-2008) included fluoranthene in the development of the Total low molecular weight PAH (LPAH) Ecological Soil Screening Levels (EcoSSL). However, fluoranthene is more often considered a HPAH (Agency for Toxic Substances and Disease Registry [ATSDR] 1995; Washington State Department of Ecology [Ecology] 2008; USEPA 1998; Canadian Council of Ministers of the Environment [CCME] 2008) and was evaluated as an HPAH in the ERA and used to calculate Total HPAH. Exposure to LPAHs and HPAHs due to inclusion of fluoranthene in the totaling of HPAHs does not underestimate risk and may actually overestimate risk because the EcoSSLs for HPAHs are lower than those for LPAHs and grouping fluoranthene as a HPAH is actually more conservative (e.g., HPAH totals are higher and screened against a lower SLV).

O.3.1.5 Erodible/Mass Wasting Soil

As discussed in Section O.1.2, an evaluation of the overland transport pathway to the River OU was conducted for the Landfill, Sandblast Area, and Bulb Slope AOPCs. In the first step of this evaluation, the data from surface soils (0 to 1 ft bgs) that were collected from areas that may potentially be subject to erosion or mass wasting (as identified in Sections 3.5 and 10.1 of the RI Report) were compared to the inorganic concentrations in the site-specific Reference Area sediment (Table L-8). Those COIs that were detected less than the Reference Area were not retained as CPECs and were not evaluated further.

The organic COIs and remaining inorganic COIs were then compared to sediment SLVs protective of the four receptor groups relevant to the River OU, and the results are summarized below. For fish and wildlife, only the COIs identified as potentially bioaccumulative were evaluated through a comparison of soil concentrations to DEQ's bioaccumulation SLVs:

- Benthic Invertebrates - (Tables O.3-4 and O.3-5). Soil CPECs for benthic invertebrates that could be exposed if mass wasting of debris and soil from the Landfill or Bulb Slope AOPCs were to occur or through soil erosion at the Sandblast Area AOPC include arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, thallium, zinc, 4,4'-DDT, Total DDTs, Aroclor 1254, Aroclor 1260, Total Aroclors, carbazole, bis(2-ethylhexyl) phthalate, di-n-butyl phthalate, and most PAHs.
- Fish - (Tables O.3-6). Soil CPECs for fish that could be exposed through their diet if mass wasting of debris and soil from the Landfill or Bulb Slope AOPCs were to occur or through soil erosion at the Sandblast Area AOPC include arsenic, cadmium, lead, mercury, selenium, thallium, zinc, tributyltin, 4,4'-DDE, 4,4'-DDT, Total DDTs, dieldrin, Aroclor 1254, Aroclor 1260, Total Aroclors, and most HPAHs.
- Birds – Individuals and Populations - (Tables O.3-7 and O.3-8). Soil CPECs for piscivorous birds that could be exposed through their diet if mass wasting of debris and soil from the Landfill or Bulb Slope AOPCs were to occur or through soil erosion at the Sandblast Area AOPC include arsenic, cadmium, lead, mercury, selenium, thallium, zinc, 4,4'-DDE, 4,4'-DDT, Total DDTs, dieldrin, Aroclor 1254, Aroclor 1260, Total Aroclors.
- Mammals – Individuals and Populations - (Tables O.3-9 and O.3-10). Soil CPECs for piscivorous mammals that could be exposed through their diet if mass wasting of debris and soil from the Landfill or Bulb Slope AOPCs were to occur or through soil erosion at

the Sandblast Area AOPC include arsenic, cadmium, lead, mercury, selenium, thallium, zinc, 4,4'-DDT, Total DDTs, dieldrin, Aroclor 1254, Aroclor 1260, Total Aroclors.

As shown in Tables O.3-4 and O.3-5, several COIs in soil were identified as CPECs for the benthic community exposed through direct contact because they lacked SLVs: selenium, butyltins, a few pesticides, most VOCs, two SVOCs, 2-methylnaphthalene, and total petroleum hydrocarbons (TPH). As shown in Tables O.3-6 through O.3-10, several COIs in soil were identified as CPECs for upper trophic level fish and shellfish and aquatic-dependent birds and mammals solely due to their bioaccumulation potential; they either lacked SLVs or their SLVs were not dietary-based (i.e., do not account for bioaccumulation). These primarily include manganese, TPH, and a few VOCs, SVOCs, and pesticides, as well as PAHs for birds. In addition, TPH was identified as a CPEC due to the lack of reliable SLVs protective of fish and shellfish and aquatic-dependent birds and mammals that could be exposed through direct contact. Naphthalene is the other CPEC identified for birds based on direct contact due to the lack of reliable SLVs for PAHs and birds.

The CPECs in soil identified through the evaluation of the overland transport pathway were evaluated for their potential to bioaccumulate in the ERA for the River OU (Section 12.5 of the main RI), with the exception of pesticides, and the protection of fish and aquatic-dependent wildlife is discussed in that section of the ERA. The lack of data for the Forebay for pesticides constitutes an additional source of uncertainty that was discussed previously.

Due to the elevated toxicity ratios for the CPECs listed above and/or their potential to bioaccumulate, as well as the potential for these areas to be sources of contamination (e.g., erosion or mass wasting), further evaluation of these CPECs within their respective AOPCs (i.e., Landfill, Sandblast Area, and Bulb Slope) is recommended for the Upland OU.

The magnitude of the potential for mass wasting/erosion and the mass of CPECs from the mass wasting/erodible soils that may actually enter the River OU are both highly uncertain. Therefore, the toxicity ratios associated with CPECs in the erodible soils do not provide a reliable evaluation (even at a screening level) of the potential risks and hazards associated with this pathway. The primary purpose of this exercise was to identify CPECs that may warrant further evaluation and discussion of the magnitude of the ratios is not appropriate.

O.3.1.6 Selection and Use of SLVs

The general uncertainties associated with the selection of SLVs were described in Section O.1, and this section specifically addresses those uncertainties related to SLVs used in the Level II ERA.

The applicability of the selected SLVs to the habitats and receptors present or likely to be present in the Upland (and River) OUs presents an uncertainty in the ERA because the inherent assumption in these SLVs is that a site is comprised of high-quality habitats, which is not always the case given current and future land use conditions. For example, most of the AOPCs in the Upland OU generally provide good habitat for animals that occur in the Lower Columbia River watershed, i.e., Landfill, which is managed as wildlife habitat (primarily for Canada geese) and the Pistol Range. Applying the generic SLVs for plants and animals at the more highly disturbed Sandblast Area (i.e., less desirable areas for ecological receptor use) poses more uncertainty in the ERA than applying them at the areas with higher quality, more attractive and diverse habitat.

In the absence of avian toxicity data for dichloroprop and MCPP (herbicides), the SLV for 4,4-DDT (a pesticide) was used as a surrogate. Use of DDT as a surrogate for these herbicides is expected to be very conservative due to the high bioaccumulation potential associated with DDTs, which is the basis of the SLV, compared to that of the two herbicides, which are not expected to bioaccumulate (log K_{ow} < 3.5) and likely overestimated risk.

In the absence of reliable PAH toxicity data for birds, the potential hazards to birds exposed to PAHs are addressed qualitatively in this section. Because PAHs can accumulate in tissues, the potential for PAH exposure by birds (of the Upland or River OUs) is of potential concern. However, the chemical behavior of PAHs may impact the bioavailability of PAHs and overall exposure. In general, both LPAHs and HPAHs are expected to significantly adsorb to soil due to their strong affinity for organically enriched substrates (i.e., organic carbon) and other ligands (e.g., sulfides) (Eisler 1987). In addition, significant bioaccumulation of PAHs by vertebrate species has not been reported in the literature (Hartung 1995) most likely due to the rapid metabolism of PAHs. As noted in the EcoSSL document for PAHs (USEPA 2005-2008), the recommended bioaccumulation factor (BAF) for PAHs is zero for estimating PAH concentrations in mammalian prey tissue because of the rapid metabolism of these compounds after ingestion by birds and mammals. Therefore, ingestion of PAHs in prey items for the birds evaluated in the ERA, especially predatory birds of the Upland OU, is likely to be minimal and the lack of PAH toxicity reference values (TRVs) for birds would not significantly impact the findings of the Level II ERA.

Potential impacts from generic classes of petroleum hydrocarbons (as TPH purgeable and extractable), are difficult to quantify because of uncertainty due to the analytical problems frequently encountered when characterizing the petroleum mixture and because of the change in composition of the petroleum hydrocarbons with exposure to the environment (i.e., weathering). As such, the focus of this ERA was on evaluating the chemical-specific hazards from the most toxic components (i.e., VOC, SVOCs, PAHs) of TPH.

O.3.1.7 Bioaccumulative COIs without Dietary-based SLVs

Table O.3-11 lists the bioaccumulative COIs detected at the Landfill and Sandblast Area AOPCs that had SLVs and were evaluated for ecological risk in this Level II ERA do not have dietary-based SLVs. The lack of dietary-based SLVs for bioaccumulative COIs may result in the underestimation of risk to wildlife from exposure to the following COIs since the non-dietary-based SLVs do not account for bioaccumulation. However, these COIs were retained as CPECs for the Landfill and Sandblast Area AOPCs and warrant further consideration for birds and mammals. As discussed above, ingestion of PAHs in prey items for the birds evaluated in the ERA, especially predatory birds of the Upland OU, is likely to be minimal and the lack of PAH TRVs for birds would not significantly impact the findings of the Level II ERA.

O.3.1.8 Bioavailability, Absorption, and Metabolism of CPECs

The bioavailability and absorption of all of the CPECs was assumed to be 100% in the Level II ERA, while the metabolism of COIs was assumed to be 0%. There were no adjustment factors to account for CPECs binding onto soil/sediment particles, or being present in a form that is not biologically available or active, or for the ability of vertebrates to metabolize certain CPECs (e.g., PAHs). Assumption of 100% bioavailability/absorption of CPECs, as well as the assumption that there is no metabolism of COIs, likely results in the overestimation of risk.

O.3.1.9 Area and Seasonal Use Factors

This Level II ERA conservatively assumed that all of the ecological receptors were present at each AOPC all day and year-round. However, some receptors (e.g., migratory birds and fish or mammals/birds with home ranges larger than the AOPCs) may be only present at each AOPC during a portion of the day and/or year. Accounting for the area use and seasonal migration habits of receptors would influence the degree of risk associated with exposure of this receptor.

O.3.2 River OU

Many of the uncertainties discussed above for the Upland OU also apply to the River OU, such as those that originate from assumptions regarding the selection and use of SLVs, the absence of bird SLVs for PAHs, lack of a quantitative evaluation for petroleum hydrocarbons, bioavailability and metabolism of CPECs, and area use factors.

O.3.2.1 Data Sensitivity Analysis for ERA

To evaluate the quality of the data for specific use in the Level II ERA, the MDLs for the non-detect results from the River OU were compared with the lowest of the ecologically protective screening levels available for each receptor group (Appendix J). As described in Section O.3.1 for the Upland OU, the MDL evaluation was only performed for analytes with a detection frequency of less than 100%.

The following data sets were considered for the data quality evaluation:

- Random Forebay Data: surface water, sediment, clams, crayfish, sculpin, smallmouth bass, and largescale sucker
- Targeted Forebay Data:
    - Eagle Creek: sediment
    - Goose Island: sediment, clam, crayfish, and sculpin

Tables K-14 and K-15 in Appendix K presents the results of this analysis for the pre-removal, Random Forebay Data, Targeted Eagle Creek Data, and Targeted Goose Island Data, respectively.

For the Random Forebay Data, aluminum in surface water, one SVOC in sediment, and several PCB Aroclors and congeners in sediment, clam, sculpin, and smallmouth bass had MDLs greater than the lowest ecological SLVs (Tables K-13 and K-14). For the Goose Island data, two metals, two SVOCs, various pesticides and 7 VOCs had MDLs the PCB Aroclors and 1 PCB congener had MDLs greater than the lowest ecological SLVs (Table B-2c). All MDLs for Random Forebay crayfish and sucker, Eagle Creek sediment, Goose Island clam, crayfish, and sculpin, and pre-removal clam were below the lowest ecological SLVs (Tables K-13 through K-15).

In general, the majority of the MDLs are equal to or lower than the SLVs, but some analytes (PCB-Aroclors and a few individual PCB congeners) exceed their corresponding SLVs for certain media. Exceedance of the lowest ecological SLV does not mean that the MDL exceeds the screening level for all receptors.

It is unlikely that additional analysis will be needed for the analytes and media with elevated MDLs, as shown in the data usability tables presented in Appendix K, for the following reasons:

Sediment

The lowest Aroclor ecological SLV for total PCBs (Aroclor 1254) was applied as a surrogate value to all Aroclors except for Aroclor 1248 (for which a chemical-specific level was available). This approach is conservative given the lower toxicity potential associated with the other Aroclors compared to Aroclor 1254 SLV is designed to be protective of the additive toxicity of all individual Aroclors. Many of the Aroclors have MDL exceedances for sediment sample; however, they are minor exceedances based on the lowest ecological SLV. This data quality issue is further minimized when screening levels for total PCBs are considered. As previously discussed, the PCB congener data collected is expected to provide more representative concentrations in sediments than the Aroclor data.

Of the PCB congener MDLs, only PCB 126 in the Random Forebay and Goose Island sediment had MDLs that exceeded the lowest ecological SLV. For this reason, the potential for risk to ecological receptors may be underestimated for PCB 126 as an individual dioxin-like congener in sediment. PCB 126 was, however, was detected in most tissue samples. Given that the MDLs for all other PCB congeners were less than the lowest ecological SLVs, the exceedance of the MDL for PCB 126 above the lowest ecological SLV is not expected to present a substantive issue for data quality in terms of estimated risk from PCBs as the sum of all 209 congeners.

Tissue

The ecological screening levels for total PCBs were applied as a surrogate value to all Aroclors. All of the Aroclors in the smallmouth bass data and several of the Aroclors in the clam and sculpin data have MDLs that exceed the lowest ecological SLV; however, the exceedances in clam and sculpin are minor. As is the case for sediment, the PCB congener data collected is expected to provide more representative concentrations in sediments than the Aroclor data.

None of the MDLs for PCB congeners were exceeded in the crayfish, clam, or sucker data. Only PCBs 126 and 169 in the Random Forebay smallmouth bass and PCBs 81, 126, 169 in the Random Forebay sculpin data had a few MDLs that exceeded the lowest ecological SLV. Given the following, these exceedances are not expected to present a substantive issue for data quality:

- Smallmouth bass – The lowest ecological SLV is exceeded in only one sample for PCB 126 and only three samples for PCB 169. While PCB 126 was detected in the remaining samples, PCB 169 was never detected, of which, 16 samples had MDLs well below the ecological SLV.
- Sculpin – The lowest ecological SLV is exceeded by only one MDL for PCB 81, one MDL for PCB 126, and three MDLs for PCB 169. While PCB 126 was detected in the remaining samples, PCBs 81 and 169 were not detected in 16 of 17 samples, of which, the majority of MDLs were less than the lowest ecological SLV. The potential for ecological risk from exposure to these two congeners may be underestimated.

In summary, the MDLs are considered acceptable for the majority of the constituents, with some exceptions due to the limits of analytical technology or the use of unrealistically low screening benchmarks. The data for analytes that have actual measurable detections above MDLs at every location are less uncertain than those that were not quantifiable in some samples. For individual chemicals that are consistently non-detect, there is uncertainty that risk for these COIs may be

underestimated. There is relatively less uncertainty for chemicals for which there are some detected results above the MDL.

O.3.2.2 Statistical Background Comparison Screening

As discussed in Section 8.1 of the main text, the goal established in the RI/FS MP (URS 2007a) for statistical power associated with the background comparison was achieved (i.e., to detect "one-standard-deviation-away"). However, for some randomly-collected Forebay tissues, this one-standard-deviation is high due to the high data variability, which could not be controlled because of the inherent heterogeneity of the Upland soils. As discussed in detail for the Upland OU (Section O.3.1.2), this high data variability resulted in MDDs greater than 100% of the reference mean. Since the results of the statistical background comparison indicated that concentrations of lead in crayfish and chromium in smallmouth bass were present below or equal to that of the Reference Area levels, these metals were not carried to the SLV comparison step. However, the high MDDs (greater than 100% of the reference mean) present an uncertainty with this finding.

To address the uncertainty with the results of the statistical background comparison, these metals were subjected to a risk-based screening evaluation. The purpose of this evaluation is to explore whether or not these metals should be included as CPECs, and ultimately advanced to the next level of RA or directly to the FS. A weight-of-evidence approach similar to the one implemented in Section 12 (ERA) was used to evaluate these metals (see Section O.3.1.2 for further detail regarding the general approach).

Lead in Crayfish

The ecological SLVs for tissue protective of upper trophic level fish and shellfish and aquatic-dependent birds and mammals presented in Appendix J were compared to the EPCs calculated for lead in crayfish (Table O.3-12). The MDD generated for lead in crayfish during the statistical background comparison is 108% (Table L-4). Concentrations of lead in Forebay crayfish range from 0.098 mg/kg to 2.66 mg/kg, and in crayfish from the Reference Area they range from 0.056 mg/kg to 1.55 mg/kg (Table L-4).

As shown in Table O.3-12, R_{BACs} (i.e., tissue EPC divided by bioaccumulation SLV) for lead are below one for all receptors. This finding is consistent with the results for all COIs in crayfish tissue evaluated in the Level II Screening presented in Section 12.5.4 of the main report (also see Tables N-51, N-53, and N-58). R_{BACs} for crayfish were the lowest of all the tissue types collected from the Forebay, and the sum R_{BACs} (estimate simultaneous exposure to multiple COIs) were also low. The sum R_{BACs} for crayfish were below one for predatory fish and shellfish that could consume crayfish (Table N-51) and for populations of aquatic-dependent mammals (Table N-58), such that if lead were included as a COI in the sum R_{BACs}, these values would remain low or below one. The sum R_{BACs} for individual aquatic-dependent birds that could consume crayfish is only slightly greater than 1.0 at 1.86 (Table N-53). Given the low sum R_{BACs} for crayfish and low R_{BACs} for lead in crayfish, adverse effects to receptors from the Forebay from exposure to lead in crayfish are not expected to occur.

Based on the low MDD, low R_{BACs} and sum R_{BACs}, and similarity between Forebay and Reference Area tissue concentrations, lead in Forebay crayfish is not recommended for further evaluation.

Chromium in Smallmouth Bass

Ecological SLVs for tissue protective of upper trophic level fish and shellfish and aquatic-dependent birds and mammals are not available for chromium (Table O.3-12). Therefore, R_{BACs} for chromium in smallmouth bass could not be calculated.

The MDD generated for chromium in bass during the statistical background comparison is 201% (Table L-4). Concentrations of chromium in Forebay bass range from 0.19 mg/kg to 0.86 mg/kg, and in bass from the Reference Area they range from 0.04 mg/kg to 7.15 mg/kg (Table L-4). The mean concentration of lead for the Forebay is 0.235 mg/kg, which is lower than yet similar to, the mean for the Reference Area (0.458 mg/kg) (Table O.3-12).

Sediment and other species in the Forebay were also analyzed for chromium: clams and crayfish. Concentrations of chromium in Forebay sediment and clams are less than concentrations from the Reference Area. Although chromium levels in crayfish were demonstrated to be elevated above Reference Area concentrations based on the statistical background comparison, the concentration ranges between the two areas are extremely similar: 0.2 to 1.2 for the Forebay and 0.12 to 1.23 for the Reference Area (Table L-4).

Based on the similarity between Forebay and Reference Area bass tissue concentrations, and all tissue types for that matter, chromium in Forebay bass is not recommended for further evaluation.

O.3.2.3 Selection and Use of SLVs

For the PAHs detected in tissue and sediment that do not have ATLs/CTLs), surrogate SLVs were selected. The ATL and CTL for pyrene were selected for individual HPAHs without SLVs and the ATL and CTL for fluoranthene were selected for individual LPAHs without SLVs. The ATL for pyrene protective of mammals is lower than the ATL for fluoranthene, so selection of pyrene ATL is conservative and does not underestimate risk for mammals. The CTL for pyrene protective of fish is higher than the CTL for fluoranthene. However, HPAHs would not be retained as CPECs for fish even if the CTL for fluoranthene was utilized instead. Therefore, risk to fish from HPAHs is not underestimated. Although fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH ATLs/CTLs.

O.3.2.4 Updates to SLVs for Water

As part of the uncertainty assessment, updates to the agreed upon sources of SLVs were reviewed (Table O.3-13). The only medium for which updates were noted is surface water. DEQ's WQC protective of aquatic organisms (Oregon Administrative Rules, Section 340-041, new Table 20) (DEQ 2011) now appears to be more current than USEPA's NRWQC (2009) and DEQ's previous WQC tables. As shown in Table O.3-13, which only presents COIs that have updated water SLVs, seven of these 22 COIs have more stringent DEQ water SLVs. These updates will be considered upon further evaluation of Upland source control (i.e., groundwater discharging to surface water of the River), which may be included in the Level III baseline for the Upland OU or in a separate document. They will also be considered during future monitoring activities for the River OU if additional surface water data are collected. Furthermore, any

updates to other SLV sources (e.g., soil SLVs) will be considered during the Level III baseline for the Upland OU.

O.3.2.5 Absence of Direct Toxicity Evaluation for Birds and Mammals

Wildlife receptors do not "live in" sediment and are therefore do not spend much time in direct contact with sediments or surface water. Additionally, they are likely protected from direct toxicity exposure by their fur and feathers. In the absence of direct toxicity evaluation for birds and mammals, the direct toxicity evaluation for sediments and surface water using benthic invertebrates and aquatic organisms SLVs indirectly covers this pathway for wildlife. This minimizes the potential for risk to be underestimated from direct toxicity to ecological receptors.

O.4 Summary and Conclusions

The intentional conservatism of the COPC and CPEC selection process, as described in Sections 11 and 12 of the main report, resulted in the retention of COPCs/CPECs for many reasons including exceedances of SLVs in a single medium, multi-media exposure, and lack of SLVs. During this process, the uncertainties inherent in the COPC selection and RA process can result in over- or under-estimates of risk. Among the many sources of uncertainty described in this evaluation, only a few factors contributed to the addition of a small number of additional COPCs/CPECs. These factors included a few metals with high MDDs and some COPCs/CEPCs associated with mass-wasting and erodible soil pathways. The effect of the remaining sources of uncertainty generally tended towards overestimation of risk or, in a few cases, could lead to either overestimation or underestimation of risk.

In general, the data adequacy and quality for the Upland AOPCs is sufficient to provide for a defensible HHRA and ERA. Further evaluation is recommended for the COPCs/CPECs in the potentially erodible/mass wasting areas of the Upland OU due to their high toxicity ratios and potential for future contamination of the River. The attempt to optimize the probability of detecting the maximum concentrations at each AOPC with judgmental sampling and the use of undiluted groundwater results in the likelihood that the EPCs are overestimated.

The majority of SLVs utilized in the RAs are developed to be conservatively protective of human and ecological receptors. Bioaccumulative COIs that lacked dietary based SLVs in the Upland OU were retained as COPCs/CPECs for further evaluation for humans and wildlife. Bioaccumulation of COIs in soil is only a concern for ecological receptors in the Upland OU, and bioaccumulation of COIs in groundwater that could discharge to surface water of the River is a concern for both human and ecological receptors. The assumptions of 100% bioavailability/absorption of all COIs, the assumption of zero metabolism of COIs, and no adjustment for area/seasonal use are all conservative assumptions utilized in this screening assessment.

Selected metal COIs in the Upland OU that were originally eliminated as COPCs/CPECs based on the findings of the statistical background comparison presented in Section 8.0 of the main text were retained for further evaluation after a more rigorous assessment of these metals due to elevated MDDs. However, none of the COIs eliminated based on frequency of detection were found to present a significant uncertainty in the HHRA or ERA.

Considering the number of uncertainties and number of conservative assumptions applied throughout the RA process, the HHRA and ERA adequately assesses risk to human and ecological receptors and indicates the COPCs/CPECs, receptors, and media that warrant further evaluation, remediation, or monitoring.

O.5 References

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Table O.1-1
Comparison of Largescale Sucker and Smallmouth Bass Data
Bradford Island - River Operable Unit
(1 of 2)

			Smallmouth Bass (SB)			Largescale Sucker (LS)		Selected SLV					Lower of Max or 95UCL Exceed SLV?									
													Subsistence		Recreational		Bird ATL		Mammal ATL		Freshwater ATL	
c	Chemical Name	UNITS	Min Detected	Max Detected	95% UCL	Min Detected	Max Detected	Subsistence	Recreational	Birds Individual	Mammals Individual	Freshwater CTL	SB	LS	SB	LS	SB	LS	SB	LS	SB	LS
77	3,3',4,4'-Tetrachlorobiphenyl	pg/g	21.7	8,950	5,640	110	110	76	620	160	5,800	430,000	**Yes**	**Yes**	**Yes**	No	**Yes**	No	No	No	No	No
81	3,4,4',5-Tetrachlorobiphenyl	pg/g	1.21	1,190	691	9.02	9.02	25	210	80	2,000	430,000	**Yes**	No	**Yes**	No	**Yes**	No	No	No	No	No
105	2,3,3',4,4'-Pentachlorobiphenyl	pg/g	717	1,300,000	887,000	4,350	4,350	250	2,100	80,000	20,000	430,000	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	No	**Yes**	No	**Yes**	No
114	2,3,4,4',5-Pentachlorobiphenyl	pg/g	59.4	89,800	65,600	289	289	250	2,100	800,000	20,000	430,000	**Yes**	**Yes**	**Yes**	No	No	No	**Yes**	No	No	No
118	2,3',4,4',5-Pentachlorobiphenyl	pg/g	2,420	3,270,000	2,310,000	10,300	10,300	250	2,100	800,000	20,000	430,000	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	No	**Yes**	No	**Yes**	No
123	2,3',4,4',5'-Pentachlorobiphenyl	pg/g	32.3	55,300	38,700	179	179	250	2,100	800,000	20,000	430,000	**Yes**	No	**Yes**	No	No	No	**Yes**	No	No	No
126	3,3',4,4',5-Pentachlorobiphenyl	pg/g	5.05	3,030	1,920	19.1	19.1	0.076	0.62	80	5.8	430,000	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	No	**Yes**	**Yes**	No	No
156 + 157	2,3,3',4,4',5-Hexachlorobiphenyl + 2,3,3',4,4',5'-Hexachlorobiphenyl	pg/g	541	486,000	375,000	1,770	1,770	250	2,100	80,000	20,000	430,000	**Yes**	**Yes**	**Yes**	No	**Yes**	No	**Yes**	No	No	No
167	2,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	161	140,000	108,000	565	565	250	2,100	800,000	20,000	430,000	**Yes**	**Yes**	**Yes**	No	No	No	**Yes**	No	No	No
169	3,3',4,4',5,5'-Hexachlorobiphenyl	pg/g	ND	ND	N/A	11.1	11.1	0.25	2.1	8,000	20	430,000	ND	**Yes**	ND	**Yes**	ND	No	ND	No	ND	No
189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	pg/g	21.6	10,100	8,140	78.0	78.0	250	2,100	800,000	20,000	430,000	**Yes**	No	**Yes**	No	No	No	No	No	No	No
NA	Total PCBs As Congeners (KM, capped; NDs at MDL)	ug/kg	32.1	26,505	19,314	201	201	0.570	4.70	35	880	0.00043	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	No	**Yes**	**Yes**
NA	PCBs As Avian TEQ (KM, capped; NDs at MDL)	ug/kg	0.00200	1.09	0.692	0.00908	0.00908	NA	NA	0.019	NA	NA	NA	NA	NA	NA	**Yes**	No	NA	NA	NA	NA
NA	PCBs As Fish TEQ (KM, capped; NDs at MDL)	ug/kg	0.0000549	0.0434	0.0293	0.000199	0.000199	NA	NA	NA	NA	0.00640	NA	NA	NA	NA	NA	NA	NA	NA	**Yes**	No
NA	PCBs As Mammalian TEQ (KM, capped; NDs at MDL)	ug/kg	0.000675	0.468	0.307	0.00278	0.00278	0.00000760	0.0000620	NA	0.00058	NA	**Yes**	**Yes**	**Yes**	**Yes**	NA	NA	**Yes**	**Yes**	NA	NA
NA	Aroclor 1016	ug/kg	ND	ND	N/A	ND	ND	0.57	4.7	35	880	430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NA	Aroclor 1221	ug/kg	ND	ND	N/A	ND	ND	0.57	4.7	35	880	430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NA	Aroclor 1232	ug/kg	ND	ND	N/A	ND	ND	0.57	4.7	35	880	430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NA	Aroclor 1242	ug/kg	260	260	N/A	ND	ND	0.57	4.7	35	880	430	**Yes**	ND	**Yes**	ND	**Yes**	ND	No	ND	No	ND
NA	Aroclor 1248	ug/kg	ND	ND	N/A	ND	ND	0.57	4.7	35	880	430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NA	Aroclor 1254	ug/kg	51.0	18,000	4,050	160	160	0.57	4.7	35	880	430	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	No	**Yes**	No
NA	Aroclor 1260	ug/kg	ND	ND	N/A	ND	ND	0.57	4.7	35	880	430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NA	Aroclor 1262	ug/kg	ND	ND	N/A	N/A	N/A	0.57	4.7	35	880	430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NA	Aroclor 1268	ug/kg	ND	ND	N/A	ND	ND	0.57	4.7	35	880	430	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NA	Sum 209	pg/g	32,157	26,504,430	19,316,062	200,913	200,913	570	4,700	35,000	880,000	430,000	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	No	**Yes**	No
NA	Lipids, Total	%	1.40	6.60	N/A	10.4	10.4	N/A	N/A	N/A	N/A	N/A	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Solids, Total	%	24.8	30.5	N/A	32.4	32.4	N/A	N/A	N/A	N/A	N/A	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Acenaphthene	ug/kg	0.160	1.60	1.07	ND	ND	15,000	120,000	NE	190,000	19,000	No	ND	No	ND	No SLV	No SLV	No	ND	No	ND
NA	Anthracene	ug/kg	0.0780	17.0	11.8	4.50	4.50	15,000	120,000	NE	190,000	19,000	No	No	No	No	No SLV	No SLV	No	No	No	No
NA	Benz(a)anthracene	ug/kg	1.00	17.0	3.69	ND	ND	1.57	12.8	NE	9,500,000	1,000	**Yes**	ND	No	ND	No SLV	No SLV	No	ND	No	ND
NA	Benzo(a)pyrene	ug/kg	0.720	7.40	3.25	6.30	6.30	0.157	1.28	NE	9,500,000	1,000	**Yes**	**Yes**	**Yes**	**Yes**	No SLV	No SLV	No	No	No	No
NA	Benzo(b)fluoranthene	ug/kg	0.110	4.40	4.21	ND	ND	1.57	12.8	NE	9,500,000	1,000	**Yes**	ND	No	ND	No SLV	No SLV	No	ND	No	ND
NA	Benzo(g,h,i)perylene	ug/kg	0.420	3.30	1.46	2.00	2.00	15.7	128	NE	9,500,000	1,000	No	No	No	No	No SLV	No SLV	No	No	No	No
NA	Benzo(k)fluoranthene	ug/kg	0.110	7.70	3.29	11.0	11.0	15.7	128	NE	9,500,000	1,000	No	No	No	No	No SLV	No SLV	No	No	No	No
NA	Bis(2-ethylhexyl) Phthalate	ug/kg	89.0	1,600	338	ND	ND	81.9	667	6,260	55,474	1,764	**Yes**	ND	No	ND	No	ND	No	ND	No	ND
NA	Butyl Benzyl Phthalate	ug/kg	33.0	440	239	ND	ND	604	4,912	6,260	55,474	310	No	ND	No	ND	No	ND	No	ND	No	ND
NA	Carbazole	ug/kg	ND	ND	N/A	ND	ND	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Chrysene	ug/kg	0.500	10.0	2.81	ND	ND	157	1,279	NE	9,500,000	1,000	No	ND	No	ND	No SLV	No SLV	No	ND	No	ND
NA	Dibenz(a,h)anthracene	ug/kg	0.410	4.10	1.72	3.70	3.70	0.157	1.28	NE	9,500,000	1,000	**Yes**	**Yes**	**Yes**	**Yes**	No SLV	No SLV	No	No	No	No
NA	Di-n-butyl Phthalate	ug/kg	150	150	N/A	ND	ND	49,157	400,000	626	1,671,533	3,115	No	ND	No	ND	No	ND	No	ND	No	ND
NA	Di-n-octyl Phthalate	ug/kg	ND	ND	N/A	ND	ND	49,157	400,000	626	1,671,533	63,012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NA	Fluoranthene	ug/kg	0.490	6.50	3.03	5.90	5.90	20,000	160,000	NE	190,000	19,000	No	No	No	No	No SLV	No SLV	No	No	No	No
NA	Fluorene	ug/kg	0.300	4.70	2.52	ND	ND	15,000	120,000	NE	190,000	19,000	No	ND	No	ND	No SLV	No SLV	No	ND	No	ND
NA	Indeno(1,2,3-cd)pyrene	ug/kg	0.700	6.10	2.76	6.50	6.50	1.57	12.8	NE	9,500,000	1,000	**Yes**	**Yes**	No	No	No SLV	No SLV	No	No	No	No
NA	p-cresol (4-Methylphenol)	ug/kg	ND	ND	N/A	ND	ND	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Phenanthrene	ug/kg	0.540	5.70	2.88	3.80	3.80	15,000	120,000	NE	190,000	19,000	No	No	No	No	No SLV	No SLV	No	No	No	No
NA	Pyrene	ug/kg	0.110	7.20	2.30	7.40	7.40	15,000	120,000	NE	9,500,000	1,000	No	No	No	No	No SLV	No SLV	No	No	No	No
NA	Aluminum	mg/kg	1.06	15.5	7.11	19.7	19.7	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Antimony	mg/kg	ND	ND	N/A	ND	ND	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Arsenic	mg/kg	0.170	0.700	0.472	0.350	0.350	0.00076	0.0062	13	7.6	6.6	**Yes**	**Yes**	**Yes**	**Yes**	No	No	No	No	No	No
NA	Barium	mg/kg	0.720	2.64	1.73	1.92	1.92	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Beryllium	mg/kg	0.000500	0.000700	0.000545	ND	ND	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Cadmium	mg/kg	0.00400	0.0280	0.0126	0.0420	0.0420	0.49	4	8.4	5.6	0.15	No	No	No	No	No	No	No	No	No	No
NA	Chromium	mg/kg	0.190	0.860	0.302	0.480	0.480	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Cobalt	mg/kg	0.0441	0.0758	0.0579	0.0775	0.0775	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Copper	mg/kg	0.364	1.42	0.764	0.728	0.728	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV

Table O.1-1
Comparison of Largescale Sucker and Smallmouth Bass Data
Bradford Island - River Operable Unit
(2 of 2)

			Smallmouth Bass (SB)			Largescale Sucker (LS)		Selected SLV					Lower of Max or 95UCL Exceed SLV?									
													Subsistence		Recreational		Bird ATL		Mammal ATL		Freshwater ATL	
c	Chemical Name	UNITS	Min Detected	Max Detected	95% UCL	Min Detected	Max Detected	Subsistence	Recreational	Birds Individual	Mammals Individual	Freshwater CTL	SB	LS	SB	LS	SB	LS	SB	LS	SB	LS
NA	Lead	mg/kg	0.00400	0.0360	0.0142	0.0440	0.0440	0.5	0.5	9.3	34	0.12	No	No	No	No	No	No	No	No	No	No
NA	Mercury	mg/kg	0.0710	0.512	0.317	0.139	0.139	0.049	0.4	0.074	0.12	0.088	**Yes**	**Yes**	No	No	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
NA	Nickel	mg/kg	0.213	0.399	0.319	0.343	0.343	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Thallium	mg/kg	0.00790	0.0215	0.0162	0.00560	0.00560	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Vanadium	mg/kg	0.0300	0.130	0.0698	0.170	0.170	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV
NA	Zinc	mg/kg	11.4	18.0	14.9	17.5	17.5	NE	NE	NE	NE	NE	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV	No SLV

= Maximum concentration is higher in Largescale Sucker
= Maximum concentration is higher in Largescale Sucker
max = maximum
min = minimum
mg/kg = milligram per kilogram
N/A = not applicable
ND = not detected
NE = no SLV established
pg/g = picogram per gram
UCL = 95% upper confidence limit
ug/kg = microgram per kilogram

Notes
Smallmouth Bass sample size for forebay = 19 individual fish
Largescale Sucker sample size for forebay = 1 composite of three individual fish

Table O.1-2
Screening Summary for Forebay - Pre-Sediment Removal Data
Bradford Island - River Operable Unit
(1 of 3)

Medium	Analyte Group	Basis	Analyte	Unit	Detection Rate > 5%?[1]	Max Detected Value	Lower of HH & Eco SLV	Maximum Detected Value > SLV?	No. of Detections > SLV	Retain as Preliminary COPC?
Sediment	Metals	D	Aluminum	mg/kg	--	14,000	38,000	No	0	No
Sediment	Metals	D	Antimony	mg/kg	--	0.170	3.00	No	0	No
Sediment	Metals	D	Arsenic	mg/kg	--	5.68	6.00	No	0	No
Sediment	Metals	D	Barium	mg/kg	--	149	315	No	0	No
Sediment	Metals	D	Beryllium	mg/kg	--	0.358	0.847	No	0	No
Sediment	Metals	D	Cadmium	mg/kg	--	0.608	0.674	No	0	No
Sediment	Metals	D	Chromium	mg/kg	--	22.0	37.0	No	0	No
Sediment	Metals	D	Cobalt	mg/kg	--	10.4	15.2	No	0	No
Sediment	Metals	D	Copper	mg/kg	--	38.9	55.6	No	0	No
Sediment	Metals	D	Lead	mg/kg	--	18.4	35.0	No	0	No
Sediment	Metals	D	Mercury	mg/kg	--	0.366	0.214	**Yes**	3	**Yes**
Sediment	Metals	D	Nickel	mg/kg	--	15.9	21.2	No	0	No
Sediment	Metals	D	Thallium	mg/kg	--	0.171	0.354	No	0	No
Sediment	Metals	D	Vanadium	mg/kg	--	58.6	70.6	No	0	No
Sediment	Metals	D	Zinc	mg/kg	--	108	123	No	0	No
Sediment	NWTPH-Dx	D	Diesel Range Organics	mg/kg	--	35.0	NV	***Yes***	--	***Yes***
Sediment	NWTPH-Dx	D	Residual Range Organics	mg/kg	--	120	NV	***Yes***	--	***Yes***
Sediment	PCB Aroclors	D	Aroclor 1254	ug/kg	--	130	0.048	**Yes**	4	**Yes**
Sediment	PCB Aroclors	D	Total PCBs As Aroclors	ug/kg	--	131	0.048	**Yes**	4	**Yes**
Sediment	SVOCs	D	Anthracene	ug/kg	--	4.30	57.0	No	0	No
Sediment	SVOCs	D	Benzo(a)anthracene	ug/kg	--	5.70	32.0	No	0	No
Sediment	SVOCs	D	Benzo(a)pyrene	ug/kg	--	32.0	32.0	No	0	No
Sediment	SVOCs	D	Benzo(b)fluoranthene	ug/kg	--	11.0	27.0	No	0	No
Sediment	SVOCs	D	Benzo(g,h,i)perylene	ug/kg	--	5.40	300	No	0	No
Sediment	SVOCs	D	Benzo(k)fluoranthene	ug/kg	--	3.40	27.0	No	0	No
Sediment	SVOCs	D	Bis(2-ethylhexyl) Phthalate	ug/kg	--	180	750	No	0	No
Sediment	SVOCs	D	Butyl Benzyl Phthalate	ug/kg	--	10.0	110	No	0	No
Sediment	SVOCs	D	Carbazole	ug/kg	--	2.60	140	No	0	No
Sediment	SVOCs	D	Chrysene	ug/kg	--	7.90	57.0	No	0	No
Sediment	SVOCs	D	Dibenz(a,h)anthracene	ug/kg	--	3.10	33.0	No	0	No
Sediment	SVOCs	D	Di-n-butyl Phthalate	ug/kg	--	24.0	110	No	0	No
Sediment	SVOCs	D	Fluoranthene	ug/kg	--	13.0	111	No	0	No
Sediment	SVOCs	D	Indeno(1,2,3-cd)pyrene	ug/kg	--	13.0	17.0	No	0	No
Sediment	SVOCs	D	p-cresol (4-Methylphenol)	ug/kg	--	4,100	48.0	**Yes**	1	**Yes**
Sediment	SVOCs	D	Phenanthrene	ug/kg	--	9.10	42.0	No	0	No
Sediment	SVOCs	D	Pyrene	ug/kg	--	13.0	53.0	No	0	No

Table O.1-2
Screening Summary for Forebay - Pre-Sediment Removal Data
Bradford Island - River Operable Unit
(2 of 3)

Medium	Analyte Group	Basis	Analyte	Unit	Detection Rate > 5%?[1]	Max Detected Value	Lower of HH & Eco SLV	Maximum Detected Value > SLV?	No. of Detections > SLV	Retain as Preliminary COPC?
Sediment	SVOCs	D	Total LPAH	ug/kg	--	13.4	76.0	No	0	No
Sediment	SVOCs	D	Total HPAH	ug/kg	--	98.3	193	No	0	No
Tissue - Clam	Metals	W	Aluminum	mg/kg	--	196	NV	***Yes***	--	***Yes***
Tissue - Clam	Metals	W	Arsenic	mg/kg	--	3.13	6.6	No	0	No
Tissue - Clam	Metals	W	Barium	mg/kg	--	2.68	NV	***Yes***	--	***Yes***
Tissue - Clam	Metals	W	Beryllium	mg/kg	--	0.00565	NV	***Yes***	--	***Yes***
Tissue - Clam	Metals	W	Cadmium	mg/kg	--	0.454	0.15	**Yes**	4	**Yes**
Tissue - Clam	Metals	W	Chromium	mg/kg	--	1.20	NV	***Yes***	--	***Yes***
Tissue - Clam	Metals	W	Cobalt	mg/kg	--	0.172	NV	***Yes***	--	***Yes***
Tissue - Clam	Metals	W	Copper	mg/kg	--	13.5	NV	***Yes***	--	***Yes***
Tissue - Clam	Metals	W	Lead	mg/kg	--	0.184	0.12	**Yes**	2	**Yes**
Tissue - Clam	Metals	W	Mercury	mg/kg	--	0.0132	0.074	No	0	No
Tissue - Clam	Metals	W	Nickel	mg/kg	--	0.394	NV	***Yes***	--	***Yes***
Tissue - Clam	Metals	W	Thallium	mg/kg	--	0.0193	NV	***Yes***	--	***Yes***
Tissue - Clam	Metals	W	Vanadium	mg/kg	--	0.540	NV	***Yes***	--	***Yes***
Tissue - Clam	Metals	W	Zinc	mg/kg	--	28.2	NV	***Yes***	--	***Yes***
Tissue - Clam	PCB Aroclors	W	Aroclor 1254	ug/kg	--	355	35	**Yes**	4	**Yes**
Tissue - Clam	PCB Aroclors	W	Total PCBs As Aroclors	ug/kg	--	355	35	**Yes**	4	**Yes**
Tissue - Clam	SVOCs	W	Acenaphthene	ug/kg	--	0.250	19,000	No	0	No
Tissue - Clam	SVOCs	W	Anthracene	ug/kg	--	1.10	19,000	No	0	No
Tissue - Clam	SVOCs	W	Benzo(a)anthracene	ug/kg	--	1.02	1,000	No	0	No
Tissue - Clam	SVOCs	W	Chrysene	ug/kg	--	2.55	1,000	No	0	No
Tissue - Clam	SVOCs	W	Di-n-butyl Phthalate	ug/kg	--	71.0	626	No	0	No
Tissue - Clam	SVOCs	W	Fluoranthene	ug/kg	--	12.5	19,000	No	0	No
Tissue - Clam	SVOCs	W	Fluorene	ug/kg	--	1.30	19,000	No	0	No
Tissue - Clam	SVOCs	W	Phenanthrene	ug/kg	--	7.00	19,000	No	0	No
Tissue - Clam	SVOCs	W	Pyrene	ug/kg	--	2.80	1,000	No	0	No
Tissue - Clam	SVOCs	W	Total LPAH	ug/kg	--	9.64	NV	***Yes***	--	***Yes***
Tissue - Clam	SVOCs	W	Total HPAH	ug/kg	--	19.1	NV	***Yes***	--	***Yes***

Notes
(1) Only evaluated for analytes with a sample size of 20 or more.
All concentrations are totals.

'--' = Not evaluated
% = percent

Table O.1-2
Screening Summary for Forebay - Pre-Sediment Removal Data
Bradford Island - River Operable Unit
(3 of 3)

Medium	Analyte Group	Basis	Analyte	Unit	Detection Rate > 5%?[1]	Max Detected Value	Lower of HH & Eco SLV	Maximum Detected Value > SLV?	No. of Detections > SLV	Retain as Preliminary COPC?

D = Dry weight
ft = feet
Max = maximum
mg/kg = milligrams per kilogram
Min = minimum
No. = number
NWTPH-Dx = northwest total petroleum hydrocarbon-diesel-extended
NWTPH-Gx =northwest total petroleum hydrocarbon-gasoline-extended
PCB = polychlorinated biphenyl
SLV = screening level value
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
W = Wet Weight

Table O.2-1
Human Health Risk-Based Screening for Metals with High MDDs - Bradford Island - Upland Operable Units
(1 of 1)

Area of Potential Concern	Chemicals of Interest	note	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Site-Specific Reference UPL	Selected Screening Level Values (SLV) in mg/kg (Table J-4a)			Site concentration (C)/SLV (2)					Should COI be considered further as a COPC?	Basis
						Outdoor Worker (0-3 ft)	Construction Worker (0-10 ft)	Excavation Worker (0-10 ft)	$\frac{C_{soil}}{SLV_{soil}}$	$\frac{C_{gw}}{SLV_{gw}}$ (Potable Water User or Direct Contact Tables M-5, M-4, M-18, M-17, M-32, M-31)	$\frac{C_{gw}}{SLV_{gw}}$ (Bioaccumulation Tables M-7, M-19, M-33)	Multimedia (direct contact) $sum(C/SLV_{soil}+C/SLV_{gw})$	Multimedia (bioaccumulation) $sum(C/SLV_{soil}+C/SLV_{gw})$		
Landfill	Chromium	c	0-3 ft	594	28.1	190 (3)	NA	NA	3.13	0.000145	-	3.13	3.13	Yes	C/SLV > 1 (Outdoor Worker)
Landfill	Copper	n	0-3 ft	191	56.7	41,000	NA	NA	0.00466	0.0303	0.0349	0.0349	0.0396	No	C/SLV <1
Landfill	Nickel	c	0-3 ft	472	26.5	20,000	NA	NA	0.0236	0.160	0.192	0.184	0.215	No	C/SLV <1
Landfill	Arsenic	c	0-10 ft	8.11	5.40	NA	13	370	0.624	0.00179	578	0.626	NE	No	C/SLV <1
Landfill	Chromium	c	0-10 ft	656	28.1	NA	920 (3)	26,000 (3)	0.713	-	-	0.713	0.713	No	C/SLV <1
Landfill	Copper	n	0-10 ft	152	56.7	NA	12,000	41,000	0.0127	0.00000908	0.0349	0.0127	0.0476	No	C/SLV <1
Sandblast Area	Copper	n	0-3 ft	91.8	56.7	41,000	NA	NA	0.00224	-	-	0.00224	0.00224	No	C/SLV <1
Sandblast Area	Mercury	n	0-3 ft	0.0976	0.0660	310	NA	NA	0.000315	-	-	0.000315	0.000315	No	C/SLV <1
Sandblast Area	Copper	n	0-10 ft	70.3	56.7	NA	12,000	41,000	0.00586	-	-	0.00586	0.00586	No	C/SLV <1
Sandblast Area	Mercury	n	0-10 ft	0.0988	0.0660	NA	93	2,600	0.00106	-	-	0.00106	0.00106	No	C/SLV <1
Four Combined AOPCs	Copper	n	0-3 ft	93.6	56.7	41,000	NA	NA	0.00228	0.0292	0.0337	0.0315	0.0360	No	C/SLV <1
Four Combined AOPCs	Copper	n	0-10 ft	91.5	56.7	NA	12,000	41,000	0.00763	0.00000876	0.0337	0.00763	0.0413	No	C/SLV <1

= Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
MDD = minimum detectable differences
mg/kg = milligram per kilogram
NA = not applicable
NE = Multi-media was not evaluated since the chemical is already identified as a COPC
UCL = upper confidence limit on the mean
UPL = upper prediction limit

Notes
Outdoor Worker hierarchical SLV selection for soil: 1. Minimum of DEQ Soil RBCs (Ingest Occupational and Volatilize Outdoor Occupational), 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4
Construction Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Construction,. 2. USEPA Soil Industrial RSL, and 3. Surrogate used as noted in Appendix J-4
Excavation Worker hierarchical SLV selection for soil: 1. DEQ Soil RBCs (Direct Contact Excavation), 2. USEPA Soil Industrial RSL, 3. Outdoor Worker SLV, and 4. Surrogate used as noted in Appendix J-4

Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 20
United States Environmental Protection Agency 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. Ma

Footnotes
(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples)
(2) The minimum of the soil SLVs was selected
(3) Due to the lack of speciation data, the chromium in soil were compared to the more conservative hexavalent chromium SLVs

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
COPC selection process for human health follows the following criteria
[C/SLV] > 1.0 for an individual chemical in a given mediun
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given mediu
[Sum C/SLV] >1.0 for a single chemical in multiple medi
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a)

Table O.2-2
Evaluation of COIs Detected in ≤ 5% of Samples at the Landfill AOPC
Bradford Island - Upland Operable Unit
(1 of 1)

Medium	Analyte Group	Total / Dissolved	Analyte	Depth Category (Soil)	Unit	No. of Samples	Detection Rate	Min Detected Value	Max Detected Value	COI Detected in Both Soil and GW?	Outdoor Worker SLV (Table J-4a)	Construction Worker SLV (Table J-4a)	Excavation Worker SLV (Table J-4a)	Potable Water User SLV (Table J-4b)	Bioaccumulation SLV (Table J-4c)	Detected Greater than SLV(s)?	COI Identified as Bioacc-umulative? (LogKow > 3.5)	SLV(s) Accounts for Bioaccumulation?	Potential COPC?
Soil	Pesticides	Total	4,4'-DDE	0-3 ft	ug/kg	23	4%	17.0	17.0	**Yes, <5% both media**	7,700	-	-	-	-	No	-	--	No
Soil	Pesticides	Total	BHC (alpha)	0-3 ft	ug/kg	23	4%	2.02	2.02	No	340	-	-	-	-	No	-	--	No
Soil	Pesticides	Total	BHC (beta)	0-3 ft	ug/kg	23	4%	2.60	2.60	No	960	-	-	-	-	No	-	--	No
Soil	Pesticides	Total	Chlordane (alpha)	0-3 ft	ug/kg	20	5%	4.00	4.00	No	7,200	-	-	-	-	No	-	--	No
Soil	Pesticides	Total	Dieldrin	0-3 ft	ug/kg	23	4%	2.10	2.10	**Yes, <5% both media**	130	-	-	-	-	No	-	--	No
Soil	Pesticides	Total	Endosulfan II	0-3 ft	ug/kg	23	4%	8.84	8.84	No	4,600,000	-	-	-	-	No	-	--	No
Soil	Pesticides	Total	Endosulfan Sulfate	0-3 ft	ug/kg	23	4%	5.97	5.97	No	4,600,000	-	-	-	-	No	-	--	No
Soil	Pesticides	Total	Heptachlor Epoxide	0-3 ft	ug/kg	23	4%	14.4	14.4	No	240	-	-	-	-	No	-	--	No
Soil	SVOCs	Total	Benzyl Alcohol	0-3 ft	ug/kg	29	3%	14.0	14.0	No	62,000,000	-	-	-	-	No	-	--	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-3 ft	ug/kg	29	3%	64.0	64.0	**Yes, <5% both media**	3,100,000	-	-	-	-	No	-	--	No
Soil	VOCs	Total	Ethylbenzene	0-3 ft	ug/kg	20	5%	2,700	2,700	**Yes, <5% both media**	140,000	-	-	-	-	No	-	--	No
Soil	VOCs	Total	m,p-Xylenes	0-3 ft	ug/kg	20	5%	9,800	9,800	No	2,700,000	-	-	-	-	No	-	--	No
Soil	Pesticides	Total	4,4'-DDE	0-10 ft	ug/kg	30	3%	17.0	17.0	**Yes, <5% both media**	-	58,000	1,600,000	-	-	No	-	--	No
Soil	Pesticides	Total	BHC (alpha)	0-10 ft	ug/kg	30	3%	2.02	2.02	No	-	2,600	74,000	-	-	No	-	--	No
Soil	Pesticides	Total	BHC (beta)	0-10 ft	ug/kg	30	3%	2.60	2.60	No	-	960	960	-	-	No	-	--	No
Soil	Pesticides	Total	Chlordane (alpha)	0-10 ft	ug/kg	20	5%	4.00	4.00	No	-	55,000	1,500,000	-	-	No	-	--	No
Soil	Pesticides	Total	Dieldrin	0-10 ft	ug/kg	30	3%	2.10	2.10	**Yes, <5% both media**	-	1,000	29,000	-	-	No	-	--	No
Soil	Pesticides	Total	Endosulfan II	0-10 ft	ug/kg	30	3%	8.84	8.84	No	-	1,400,000	40,000,000	-	-	No	-	--	No
Soil	Pesticides	Total	Endosulfan Sulfate	0-10 ft	ug/kg	30	3%	5.97	5.97	No	-	1,400,000	40,000,000	-	-	No	-	--	No
Soil	Pesticides	Total	Heptachlor Epoxide	0-10 ft	ug/kg	30	3%	14.4	14.4	No	-	1,800	51,000	-	-	No	-	--	No
Soil	PCB Aroclors	Total	Aroclor 1248	0-10 ft	ug/kg	43	5%	61.5	968	No	-	740	740	-	-	Yes	-	--	Yes
Soil	SVOCs	Total	Benzyl Alcohol	0-10 ft	ug/kg	36	3%	14.0	14.0	No	-	62,000,000	62,000,000	-	-	No	-	--	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-10 ft	ug/kg	36	3%	64.0	64.0	**Yes, <5% both media**	-	3,100,000	3,100,000	-	-	No	-	--	No
Soil	VOCs	Total	4-Isopropyltoluene	0-10 ft	ug/kg	27	4%	0.457	0.457	No	-	24,000,000	24,000,000	-	-	No	-	--	No
Soil	VOCs	Total	Dichlorodifluoromethane	0-10 ft	ug/kg	27	4%	0.221	0.221	No	-	780,000	780,000	-	-	No	-	--	No
Soil	VOCs	Total	Dichloromethane (Methylene Chlo	0-10 ft	ug/kg	27	4%	12.0	12.0	No	-	2,700,000	75,000,000	-	-	No	-	--	No
Soil	VOCs	Total	Trichlorofluoromethane	0-10 ft	ug/kg	27	4%	0.325	0.325	No	-	63,000,000	3,400,000	-	-	No	-	--	No
Groundwater	Herbicides	Total	Dichloroprop	N/A	ug/L	21	5%	1.10	1.10	**Yes, <5% gw only**	-	-	-	290	-	No	No	No	No
Groundwater	Pesticides	Total	4,4'-DDE	N/A	ug/L	22	5%	0.00246	0.00246	**Yes, <5% both media**	-	-	-	0.17	0.00022	Yes	Yes	Yes	Yes
Groundwater	Pesticides	Total	Total DDTs	N/A	ug/L	22	5%	0.00246	0.00246	**Yes, <5% gw only**	-	-	-	0.17	0.00022	Yes	Yes	Yes	Yes
Groundwater	Pesticides	Total	Dieldrin	N/A	ug/L	22	5%	0.000982	0.000982	**Yes, <5% both media**	-	-	-	0.0035	0.000052	Yes	Yes	Yes	Yes
Groundwater	SVOCs	Total	Phenol	N/A	ug/L	54	2%	0.382	0.382	No	-	-	-	11,000	10,000	No	No	Yes	No
Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	54	4%	0.0258	0.0601	No	-	-	-	0.42	63	No	No	Yes	No
Groundwater	SVOCs	Total	2-Methylphenol	N/A	ug/L	23	4%	76.0	76.0	No	-	-	-	1,800	10,000	No	No	Yes	No
Groundwater	SVOCs	Total	Anthracene	N/A	ug/L	23	4%	0.0589	0.0589	**Yes, <5% gw only**	-	-	-	11,000	8,300	No	Yes	Yes	No
Groundwater	SVOCs	Total	Benzoic Acid	N/A	ug/L	23	4%	11.0	11.0	**Yes, <5% gw only**	-	-	-	150,000	-	No	No	No	No
Groundwater	SVOCs	Total	Dimethyl Phthalate	N/A	ug/L	23	4%	0.235	0.235	No	-	-	-	29000	270,000	No	No	Yes	No
Groundwater	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	ug/L	23	4%	29.0	29.0	**Yes, <5% both media**	-	-	-	180	-	No	No	No	No
Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	ug/L	22	5%	3.04	3.04	No	-	-	-	2,000	-	No	No	No	No
Groundwater	VOCs	Total	Carbon Disulfide	N/A	ug/L	22	5%	3.95	3.95	No	-	-	-	1,000	-	No	No	No	No
Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	ug/L	22	5%	1.40	1.40	No	-	-	-	0.19	0.23	Yes	No	Yes	Yes
Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	ug/L	22	5%	0.791	0.791	No	-	-	-	360	-	No	No	No	No
Groundwater	VOCs	Total	Ethylbenzene	N/A	ug/L	22	5%	1.00	1.00	**Yes, <5% both media** (1)	-	-	-	1.4	530	No	No	Yes	No

= Retained as a COPC
- = Not applicable/evaluated
BHC = hexachlorocyclohexane
ft = feet
Max = maximum
Min = minimum
No. = number
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
VOC = volatile organic carbon
Yes-Bio = Identified as potential COPC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV

Footnote
(1) Ethylbenzene was detected at a frequency greater than 5% in soils from 0 to 10 feet bgs, but less than 5% in soils from 0 to 3 feet bgs and groundwater.

Table O.2-3
Evaluation of COIs Detected in ≤ 5% of Samples at the Sandblast AOPC
Bradford Island - Upland Operable Unit
(1 of 2)

Medium	Analyte Group	Total / Dissolved	Analyte	Depth Category (Soil)	Unit	No. of Samples	Detection Rate	Min Detected Value	Max Detected Value	COI Detected in Both Soil and GW?	Outdoor Worker SLV (Table J-4a)	Construction Worker SLV (Table J-4a)	Excavation Worker SLV (Table J-4a)	Potable Water User SLV (Table J-4b)	Bioaccumulation SLV (Table J-4c)	Detected Greater than SLV(s)?	COI Identified as Bioacc-umulative? (LogKow > 3.5)	SLV(s) Accounts for Bioaccumulation ?	Potential COPC?
Soil	Butyltins	Total	Tetrabutyltin	0-3 ft	ug/kg	44	2%	3.99	3.99	No	180,000	-	-	-	-	No	--	--	No
Soil	Pesticides	Total	Aldrin	0-3 ft	ug/kg	37	3%	4.40	4.40	No	130	-	-	-	-	No	--	--	No
Soil	Pesticides	Total	BHC (beta)	0-3 ft	ug/kg	37	3%	0.952	0.952	No	960	-	-	-	-	No	--	--	No
Soil	Pesticides	Total	Heptachlor Epoxide	0-3 ft	ug/kg	37	3%	0.634	0.634	No	240	-	-	-	-	No	--	--	No
Soil	SVOCs	Total	Benzyl Alcohol	0-3 ft	ug/kg	39	3%	7.81	7.81	**Yes, <5% soil only** (1)	62,000,000	-	-	-	-	No	--	--	No
Soil	SVOCs	Total	Diethyl Phthalate	0-3 ft	ug/kg	39	3%	8.80	8.80	No	490,000,000	-	-	-	-	No	--	--	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-3 ft	ug/kg	39	3%	27.0	27.0	No	440,000	-	-	-	-	No	--	--	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-3 ft	ug/kg	39	3%	2.46	2.46	No	3,100,000	-	-	-	-	No	--	--	No
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-3 ft	ug/kg	0.490	0.580	0.490	0.580	**Yes, <5% soil only**	38,000,000	-	-	-	-	No	--	--	No
Soil	VOCs	Total	1,1-Dichloroethane	0-3 ft	ug/kg	0.290	0.290	0.290	0.290	**Yes, <5% soil only**	240,000	-	-	-	-	No	--	--	No
Soil	VOCs	Total	1,4-Dichlorobenzene	0-3 ft	ug/kg	0.140	0.160	0.140	0.160	No	36,000	-	-	-	-	No	--	--	No
Soil	VOCs	Total	Chloromethane	0-3 ft	ug/kg	0.230	0.250	0.230	0.250	No	25,000,000	-	-	-	-	No	--	--	No
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-3 ft	ug/kg	12.0	120	12	120	**Yes, <5% soil only**	10,000,000	-	-	-	-	No	--	--	No
Soil	VOCs	Total	Isopropylbenzene	0-3 ft	ug/kg	47.3	47.3	47.3	47.3	No	53,000,000	-	-	-	-	No	--	--	No
Soil	VOCs	Total	n-Butylbenzene	0-3 ft	ug/kg	0.0920	0.0920	0.0920	0.0920	No	36,000 (2)	-	-	-	-	No	--	--	No
Soil	VOCs	Total	sec-Butylbenzene	0-3 ft	ug/kg	0.435	90.2	0.435	90.2	No	36,000 (2)	-	-	-	-	No	--	--	No
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-3 ft	ug/kg	2.28	2.28	2.28	2.28	**Yes, <5% soil only**	9,200,000	-	-	-	-	No	--	--	No
Soil	Butyltins	Total	Tetrabutyltin	0-10 ft	ug/kg	44	2%	3.99	3.99	No	-	180,000	180,000	-	-	No	--	--	No
Soil	Pesticides	Total	Aldrin	0-10 ft	ug/kg	37	3%	4.40	4.40	No	-	980	27,000	-	-	No	--	--	No
Soil	Pesticides	Total	BHC (beta)	0-10 ft	ug/kg	37	3%	0.952	0.952	No	-	96,000	960	-	-	No	--	--	No
Soil	Pesticides	Total	Heptachlor Epoxide	0-10 ft	ug/kg	37	3%	0.634	0.634	No	-	1,800	51,000	-	-	No	--	--	No
Soil	SVOCs	Total	Benzyl Alcohol	0-10 ft	ug/kg	42	2%	7.81	7.81	**Yes, <5% soil only** (1)	-	62,000,000	62,000,000	-	-	No	--	--	No
Soil	SVOCs	Total	Diethyl Phthalate	0-10 ft	ug/kg	42	2%	8.80	8.80	No	-	490,000,000	490,000,000	-	-	No	--	--	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-10 ft	ug/kg	42	2%	27.0	27.0	No	-	350,000	95,000,000	-	-	No	--	--	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-10 ft	ug/kg	42	2%	2.46	2.46	No	-	3,100,000	3,100,000	-	-	No	--	--	No
Soil	SVOCs	Total	Pentachlorophenol	0-10 ft	ug/kg	42	5%	11.0	32.0	No	-	100,000	2,900,000	-	-	No	--	--	No
Soil	VOCs	Total	1,1-Dichloroethane	0-10 ft	ug/kg	49	2%	0.290	0.290	**Yes, <5% soil only**	-	2,900,000	81,000,000	-	-	No	--	--	No
Soil	VOCs	Total	1,4-Dichlorobenzene	0-10 ft	ug/kg	49	4%	0.140	0.160	No	-	1,200,000	34,000,000	-	-	No	--	--	No
Soil	VOCs	Total	Chloromethane	0-10 ft	ug/kg	49	4%	0.230	0.250	No	-	25,000,000	500,000	-	-	No	--	--	No
Soil	VOCs	Total	Isopropylbenzene	0-10 ft	ug/kg	49	2%	47.3	47.3	No	-	24,000,000	11,000,000	-	-	No	--	--	No
Soil	VOCs	Total	n-Butylbenzene	0-10 ft	ug/kg	49	2%	0.092	0.092	No	-	1,200,000 (2)	34,000,000 (2)	-	-	No	--	--	No
Soil	VOCs	Total	sec-Butylbenzene	0-10 ft	ug/kg	49	4%	0.435	90.2	No	-	1,200,000 (2)	34,000,000 (2)	-	-	No	--	--	No
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-10 ft	ug/kg	49	2%	2.28	2.28	**Yes, <5% soil only**	-	4,500,000	690,000	-	-	No	--	--	No
Groundwater	SVOCs	Total	Benzo(b)fluoranthene	N/A	ug/L	20	5%	0.0180	0.0180	**Yes, <5% gw only**	-	-	-	0.029	0.0038	Yes	Yes	Yes	Yes
Groundwater	SVOCs	Total	Phenanthrene	N/A	ug/L	20	5%	0.0840	0.0840	**Yes, <5% gw only**	-	-	-	11,000	8,300	No	Yes	Yes	No
Groundwater	VOCs	Total	Chloroform	N/A	ug/L	20	5%	0.180	0.180	**Yes, <5% gw only**	-	-	-	0.19	5.7	No	No	Yes	No

= Retained as a COPC
- = Not applicable/evaluated
BHC = hexachlorocyclohexane
ft = feet
Max = maximum
Min = minimum
No. = number
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
VOC = volatile organic carbon

Table O.2-3
Evaluation of COIs Detected in ≤ 5% of Samples at the Sandblast AOPC
Bradford Island - Upland Operable Unit
(2 of 2)

Yes-Bio = Identified as potential COPC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV

Footnotes
(1) Benzyl Alcohol was only anlayzed for in direct push groundwater.
(2) 1,4- Dichlorobenzene was used as a surrogate because there was no chemical specific SLV.

Table O.2-4
Identification of COPCs in Mass Wasting Soil at Landfill AOPC
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4e)	Site concentration(C) / SLV $\frac{C_{soil}}{SLV_{sed}}$	Retain as a COPC, Y/N?	Rationale (1)
INORGANICS (mg/kg)							
Arsenic	c	100%	4.95	5.86 (2)	0.845	N	carc C/SLV <1
Cadmium	c	100%	1.04	0.674 (2)	1.54	Y	carc C/SLV >1
Lead	n	100%	324	14.5 (2)	22.3	Y	C/SLV >1
Manganese	n	100%	447	-	-	Y	No SLV
Mercury	n	100%	0.214	0.214 (2)	1.00	N	C/SLV <1
Selenium	n	20%	0.490	2 (3)	0.245	N	C/SLV <1
Thallium	n	10%	0.378	0.354 (2)	1.07	Y	C/SLV >1
Zinc	n	100%	184	106 (2)	1.74	Y	C/SLV >1
PESTICIDES (ug/kg)							
4,4'-DDT	c	70%	18.0	0.04	450	Y	carc C/SLV >1
Total DDTs	c	70%	19.2	0.04	479	Y	carc C/SLV >1
Dieldrin	c	10%	2.10	0.001	2,100	Y	carc C/SLV >1
PCBs (ug/kg)							
Aroclor 1254	c	70%	28.0	0.048	583	Y	carc C/SLV >1
Aroclor 1260	c	90%	55.4	0.048	1,154	Y	carc C/SLV >1
Total PCBs (Aroclors)	c	90%	88.2	0.048	1,838	Y	carc C/SLV >1
SVOCs (ug/kg)							
Bis(2-ethylhexyl) Phthalate	c	90%	229	-	-	Y	No SLV
Carbazole	c	80%	81.5	-	-	Y	No SLV
Dibenzofuran	n	20%	32.9	-	-	Y	No SLV
Di-n-butyl Phthalate	n	40%	563	-	-	Y	No SLV
PAHs (ug/kg)							
2-Methylnaphthalene	n	10%	11.0	62,000 (4)	0.000177	N	C/SLV <1
Acenaphthene	n	79%	592	62,000	0.00955	N	C/SLV <1
Acenaphthylene	n	29%	18.5	62,000	0.000298	N	C/SLV <1
Anthracene	n	93%	722	62,000	0.0116	N	C/SLV <1
Benzo(a)anthracene	c	93%	3,790	47,000	0.0806	N	carc C/SLV <1
Benzo(a)pyrene	c	93%	4,890	47,000	0.104	N	carc C/SLV <1
Benzo(b)fluoranthene	c	93%	5,800	47,000	0.123	N	carc C/SLV <1
Benzo(g,h,i)perylene	c	93%	2,400	47,000	0.0511	N	carc C/SLV <1
Benzo(k)fluoranthene	c	93%	2,070	47,000	0.0440	N	carc C/SLV <1
Chrysene	c	93%	4,530	47,000	0.0964	N	carc C/SLV <1
Dibenz(a,h)anthracene	c	93%	725	47,000	0.0154	N	carc C/SLV <1

Table O.2-4
Identification of COPCs in Mass Wasting Soil at Landfill AOPC
Bradford Island -Upland Operable Unit
(2 of 2)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4e)	Site concentration(C) / SLV $\frac{C_{soil}}{SLV_{sed}}$	Retain as a COPC, Y/N?	Rationale (1)
Fluoranthene	n	93%	8,520	62,000	0.137	N	C/SLV <1
Fluorene	n	71%	273	62,000	0.00440	N	C/SLV <1
Indeno(1,2,3-cd)pyrene	c	93%	3,230	47,000	0.0687	N	carc C/SLV <1
Phenanthrene	n	93%	2,820	62,000	0.0455	N	C/SLV <1
Pyrene	n	93%	7,050	47,000	0.150	N	C/SLV <1

= Retained as a COPC
- = no data
AOPC = area of potential concern
COIs = chemicals of interest
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
HH = human health
mg/kg = milligrams per kilogram
n = non-carcinogen
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
SLV = screening level value
SVOCs = semivolatile organic chemicals
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
UPL = 95% Upper Prediction Limit

Notes
Only detected chemicals with a detection frequency greater than 5%, inorganics greater than reference, and are considered bioaccumulative (Appendix J-7) are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
The Landfill AOPC potentially erodible soil subset is comprised of the following samples: BIL01USE through BIL09USE, BIL13SSI, and L-01 through L-04.
Hierarchy was developed to determine Screening Levels Values for erodible soil against Sediment SLVs; 1. Minimum DEQ HH Bioaccumulative SLVs and 2. Surrogates used as noted in Appendix J-4e.
Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.

Footnotes
(1) COIs were retained as COPCs if they met detection frequency (>5%), exceeded Reference UPL, exceeded HH SLV, and identified as bioaccumulative. See Section O.2.1.
(2) Reference Sediment 95% Upper Prediction Limit (UPL) was used as the Selected HH SLV; see Appendix I-20a, Sediment.
(3) In the absence of a Reference Sediment 95% UPL for the HH SLV, the freshwater inorganic background suggested by DEQ was used (DEQ 2007)
(4) Fluoranthene was used as a surrogate because there was no chemical specific SLV and fluoranthene had the lowest SLV of the low Molecular Weight PAHs.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated seperately.
Sum carcinogenic C/SLV = summation of C/SLV of all carcinogens. Total aroclors, rather than individual aroclors, was used in the summation.
Ratios for SLVs based on Reference Upper Prediction Limits (UPLs) are not included in sum totals.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if inorganic site concentration exceeds reference and under the following condition:
[C/SLV] > 1.0 for an individual chemical in a given medium

Table O.2-5
Identification of COPCs in Erodible Soil (0-1 ft bgs) at Sandblast Area AOPC
Bradford Island -Upland Operable Unit
(1 of 3)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4e)	Site concentration(C) / SLV $\frac{C_{soil}}{SLV_{sed}}$	Retain as a COPC, Y/N?	Rationale (1)
INORGANICS (mg/kg)							
Cadmium	c	100%	1.06	0.674 (2)	1.57	Y	carc C/SLV >1
Lead - sieved <250um	n	100%	90.8	14.5 (2)	6.26	Y	C/SLV >1
Lead - sieved <2mm	n	100%	52.7	14.5 (2)	3.63	Y	C/SLV >1
Lead - unsieved	n	100%	319	14.5 (2)	22.0	Y	C/SLV >1
Manganese	n	100%	479	-	-	Y	No SLV
Selenium	n	100%	0.650	2 (3)	0.325	N	C/SLV <1
Zinc	n	100%	203	106 (2)	1.92	Y	C/SLV >1
BUTYLTINS (ug/L)							
Tributyltin	n	100%	12.8	10	1.28	Y	C/SLV >1
PESTICIDES (ug/kg)							
4,4'-DDE	c	100%	0.440	0.04	11.0	Y	carc C/SLV >1
4,4'-DDT	c	100%	10.0	0.04	250	Y	carc C/SLV >1
Total DDTs	c	100%	10.4	0.04	260	Y	carc C/SLV >1
BHC (delta)	n	50%	0.0780	2.3	0.0339	N	C/SLV <1
Endosulfan II	n	50%	0.240	0.001	240	Y	C/SLV >1
Endosulfan Sulfate	n	50%	0.770	0.001	770	Y	C/SLV >1
Heptachlor	c	100%	0.380	0.001	380	Y	carc C/SLV >1
PCBs (ug/kg)							
Aroclor 1260	c	100%	67.0	0.048	1,396	Y	carc C/SLV >1
Total PCBs (Aroclors)	c	100%	69.1	0.048	1,440	Y	carc C/SLV >1
VOCs (ug/kg)							
1,2,4-Trimethylbenzene	n	75%	0.243	-	-	Y	No SLV
4-Isopropyltoluene	n	38%	1.46	-	-	Y	No SLV
SVOCs (ug/kg)							
Bis(2-ethylhexyl) Phthalate	c	100%	260,000	-	-	Y	No SLV
Carbazole	c	100%	91.0	-	-	Y	No SLV
PAHs (ug/kg)							
Acenaphthene	n	100%	68.0	62,000	0.00110	N	C/SLV <1
Anthracene	n	100%	150	62,000	0.00242	N	C/SLV <1
Benzo(a)anthracene	c	100%	1,200	47,000	0.0255	N	carc C/SLV <1
Benzo(a)pyrene	c	100%	1000	47,000	0.0213	N	carc C/SLV <1
Benzo(b)fluoranthene	c	100%	1,600	47,000	0.0340	N	carc C/SLV <1
Benzo(g,h,i)perylene	c	100%	590	47,000	0.0126	N	carc C/SLV <1

Table O.2-5
Identification of COPCs in Erodible Soil (0-1 ft bgs) at Sandblast Area AOPC
Bradford Island -Upland Operable Unit
(2 of 3)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4e)	Site concentration(C) / SLV $\frac{C_{soil}}{SLV_{sed}}$	Retain as a COPC, Y/N?	Rationale (1)
Benzo(k)fluoranthene	c	100%	570	47,000	0.0121	N	carc C/SLV <1
Chrysene	c	100%	1,500	47,000	0.0319	N	carc C/SLV <1
Dibenz(a,h)anthracene	c	100%	220	47,000	0.00468	N	carc C/SLV <1
Fluoranthene	n	100%	2,100	62,000	0.0339	N	C/SLV <1
Indeno(1,2,3-cd)pyrene	c	100%	690	47,000	0.0147	N	carc C/SLV <1
Phenanthrene	n	100%	940	62,000	0.0152	N	C/SLV <1
Pyrene	n	100%	1,900	47,000	0.0404	N	C/SLV <1
TPH (mg/kg)							
Diesel Range Organics	n	100%	69.0	-	-	N	Evaluated as PAHs
Gasoline Range Organics	n	50%	2.56	-	-	N	Evaluated as VOCs
Residual Range Organics	n	100%	1000	-	-	N	Evaluated as PAHs

= Retained as a COPC
- = no data
AOPC = area of potential concern
COIs = chemicals of interest
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
HH = human health
mg/kg = milligrams per kilogram
n = non-carcinogen
PAHs = polyaromatic hydrocarbons
PCBs = polychlorinated biphenyls
SLV = screening level value
SVOCs = semivolatile organic chemicals
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
UPL = 95% Upper Prediction Limit
VOCs = volatile organic chemicals

Notes
Only detected chemicals with a detection frequency greater than 5%, inorganics greater than reference, and are considered bioaccumulative (Appendix J-7) are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
The Sandblast Area AOPC potentially erodible soil subset is comprised of the following samples: SB-EUA, SB-EUB, SB-EUA-02, SB-EUA-04, SB-EUA-06, SB-EUA-08, SB-EUB-02, SB-EUB-03, SB-EUB-12, SB
Hierarchy was developed to determine Screening Levels Values for erodible soil against Sediment SLVs; 1. Minimum DEQ HH Bioaccumulative SLVs and 2. Surrogates used as noted in Appendix J-4e.
Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.

Footnotes
(1) COIs were retained as COPCs if they met detection frequency (>5%), exceeded Reference UPL, exceeded HH SLV, and identified as bioaccumulative. See Section O.2.1.
(2) Reference Sediment 95% Upper Prediction Limit (UPL) was used as the Selected HH SLV; see Appendix I-20a, Sediment.

Table O.2-5
Identification of COPCs in Erodible Soil (0-1 ft bgs) at Sandblast Area AOPC
Bradford Island -Upland Operable Unit
(3 of 3)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4e)	Site concentration(C) / SLV $\frac{C_{soil}}{SLV_{sed}}$	Retain as a COPC, Y/N?	Rationale (1)

(3) In the absence of a Reference Sediment 95% UPL for the HH SLV, the freshwater inorganic background suggested by DEQ was used (DEQ 2007)

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated seperately.
Sum carcinogenic C/SLV = summation of C/SLV of all carcinogens. Total aroclors, rather than individual aroclors, was used in the summation.
Ratios for SLVs based on Reference Upper Prediction Limits (UPLs) are not included in sum totals.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if inorganic site concentration exceeds reference and under the following condition:
[C/SLV] > 1.0 for an individual chemical in a given medium

Table O.2-6
Identification of COPCs in Soil at Bulb Slope AOPC
Bradford Island -Upland Operable Unit
(1 of 2)

Chemicals of Interest	note	Detection Rate	Lower of the Maximum and 95% UCL	Selected HH SLV (Table J-4e)	Site concentration(C) / SLV $\frac{C_{soil}}{SLV_{sed}}$	Retain as a COPC, Y/N?	Rationale (1)
INORGANICS (mg/kg)							
Lead	n	100%	307	14.5 (2)	21.2	Y	C/SLV >1
Mercury	n	100%	0.720	0.214 (2)	3.36	Y	C/SLV >1
PCBs (ug/kg)							
Aroclor 1260	c	67%	108	0.048	2,250	Y	C/SLV >1
Total PCBs (Aroclors)	c	67%	104	0.048	2,163	Y	C/SLV >1
TPH (mg/kg)							
Diesel Range Organics	n	100%	102	-	-	N	Evaluated as PAHs
Residual Range Organics	n	100%	232	-	-	N	Evaluated as VOCs

= Retained as a COPC
- = no data
AOPC = area of potential concern
COIs = chemicals of interest
C = concentration
c = carcinogen
COPC = chemical of potential concern
DEQ = Oregon Department of Environmental Quality
HH = human health
mg/kg = milligrams per kilogram
n = non-carcinogen
PCBs = polychlorinated biphenyls
SLV = screening level value
TPH = total petroleum hydrocarbon
ug/kg = micrograms per kilogram
UCL = 95% upper confidence limit
UPL = 95% Upper Prediction Limit

Notes
Only detected chemicals with a detection frequency greater than 5%, inorganics greater than reference, and are considered bioaccumulative (Appendix J-7) are shown in this table. Essential nutrients (calcium, magnesium, sodium, and potassium) are not included even if detected. Reporting limits for non-detected chemicals are evaluated separately.
The entire Bulb Slope AOPC is potentially
Hierarchy was developed to determine Screening Levels Values for erodible soil against Sediment SLVs; 1. Minimum DEQ HH Bioaccumulative SLVs and 2. Surrogates used as noted in Appendix J
Oregon Department of Environmental Quality (DEQ) 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.

Footnotes
(1) COIs were retained as COPCs if they met detection frequency (>5%), exceeded Reference UPL, exceeded HH SLV, and identified as bioaccumulative. See Section O.2.1.
(2) Reference Sediment 95% Upper Prediction Limit (UPL) was used as the Selected HH SLV; see Appendix I-20a, Sediment.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
Sum non-carcinogenic C/SLV (HI) = summation of C/SLV of all non-carcinogens. Lead not included in summation because evaluated separately.

Table O.2-6
Identification of COPCs in Soil at Bulb Slope AOPC
Bradford Island -Upland Operable Unit
(2 of 2)

Sum carcinogenic C/SLV = summation of C/SLV of all carcinogens. Total aroclors, rather than individual aroclors, was used in the summation.
Ratios for SLVs based on Reference Upper Prediction Limits (UPLs) are not included in sum totals.
COPC selection process for human health follows the following criteria. Chemicals are included as COPCs if inorganic site concentration exceeds reference and under the following condition:
[C/SLV] > 1.0 for an individual chemical in a given medium

Table O.2-7
Human Health Risk-Based Screening for Metals with High MDDs - Bradford Island - River Operable Unit
(1 of 1)

Medium	Chemicals of Interest	note	Lower of Maximum and 95% UCL (1)	Site-Specific Reference UPL	Selected Screening Level Values (SLV) in mg/kg (Table J-4f)		Site concentration (C)/SLV (2)			Should COI be considered further as a COPC?	Rationale
					Subsistence Fisher	Recreational Fisher	$\frac{C_{tissue}}{SLV_{tissue}}$	$\frac{C_{sw}}{SLV_{sw}}$ (Potable Water User Table M-39)	Multimedia (direct contact) $sum(C/SLV_{tissue}+C/SLV_{sw})$		
Crayfish	Lead	n	0.925	1.14	0.5	0.5	1.85	0.0117	1.86	Yes	C/SLV >1
Smallmouth Bass	Chromium	c	0.302	7.15	20 (3)	20 (3)	0.0151	-	0.0151	No	carc C/SLV <1

= Retained as a COPC
- = not evaluated since chemical was not detected in this medium at detection frequency >5%
MDD = minimum detectable differences
mg/kg = milligram per kilogram wet weight
UCL = upper confidence limit on the mean
UPL = upper prediction limit

Notes
Potable Water User hierarchy was developed to determine Screening Levels Values for surface water; 1. Minimum of DEQ Groundwater RBCs (Ingest Residential, Ingest Occupational, Volatilize Outdoor, Vapor Intrusion, Excavation), 2. USEPA tapwater RSLs, 3. DEQ MCLs, 4. Surrogates used as noted in Appendix J-4b.
Subsitence Fisher hierarchy was developed to determine Screening Levels Values for Tissue; 1. Minimum of DEQ HH Bioaccumulative ATLs (human subsistence/tribal) (Appendix J-4f).
Recreational Fisher hierarchy was developed to determine Screening Levels Values for Tissue; 1. Minimum of DEQ HH Bioaccumulative ATLs (human general/recreational) (Appendix J-4f).
Oregon Department of Environmental Quality (DEQ) 2003. Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites. Land Quality Division, Environmental Cleanup and Tanks Program. September. Updated 200
DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. January 31.
DEQ 2010a. Human Health Risk Assessment Guidance. Draft May 12.
DEQ 2010b. Maximum Contaminant Level. Accessed online in January 2010 at: http://www.oregon.gov/DHS/ph/dwp/docs/pwsrules/61-0030.pdf
USEPA 2010. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. May.

Footnotes
(1) The lower of the maximum detected concentration and the calculated 95% UCL (for COIs with at least 8 samples).
(2) The minimum of the SLVs was selected.
(3) SLVs were calculated ATLs using DEQ Methodology (DEQ 2007); see Section 11.3.4.1.1 and Appendix J-2.

COPC Selection
C/SLV = Site concentration divided by risk-based concentration where risk-based concentration equaled human health SLV
COPC selection process for human health follows the following criteria:
[C/SLV] > 1.0 for an individual chemical in a given medium
[Sum non-carcinogenic C/SLV] >1.0 and individual non-carcinogen [C/SLV] >0.1 for multiple chemicals in a given medium
[Sum C/SLV] >1.0 for a single chemical in multiple media
For carcinogens only, eliminated as COPC if individual [C/SLV] < 1.0 (DEQ, 2010a).

Table O.3-1
Ecological Risk-Based Screening for Metals with High MDDs
Bradford Island - Upland Operable Unit
(1 of 1)

Area of Potential Concern	Chemicals of Interest	Depth Category (Soil)	Soil EPCs (Cij) (mg/kg)		Site-Specific Reference UPL	Level II Screening Level Values for Soils (2,3,4,5,6) (mg/kg)				Toxicity Ratios (Tij) (7)				Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	Should COI be considered further as a CPEC? (7)	Basis
			Max Detected Conc in Soil	Lower of Maximum and 95% UCL (1)		Plants	Soil Invertebrates	Birds	Mammals	Plants	Soil Invertebrates	Birds	Mammals				
Landfill	Arsenic	0-1 ft	30.1	11.1	5.40	18	60	43	46	**1.7**	0.50	0.26	0.24	Yes	Yes	**Yes**	plants
Landfill	Chromium	0-1 ft	801	242	28.1	28.1	28.1	28.1	34	**29**	**29**	**8.6**	**7.1**	Yes	Yes	**Yes**	all
Landfill	Copper	0-1 ft	494	170	56.7	70	80	56.7	56.7	**7.1**	**6.2**	**3.0**	3.0	Yes	Yes	**Yes**	plants, inverts, birds
Landfill	Nickel	0-1 ft	570	175	26.5	38	280	210	130	**15**	**2.0**	0.83	1.35	Yes	Yes	**Yes**	plants and inverts
Landfill	Chromium	0-3 ft	1,950	594	28.1	28.1	28.1	28.1	34	**69**	**69**	**21**	**17**	Yes	Yes	**Yes**	all
Landfill	Copper	0-3 ft	494	191	56.7	70	80	56.7	56.7	**7.1**	**6.2**	**3.4**	3.4	Yes	Yes	**Yes**	plants, inverts, birds
Landfill	Nickel	0-3 ft	1,610	472	26.5	38	280	210	130	**42**	**5.8**	**2.2**	3.6	Yes	Yes	**Yes**	plants, inverts, birds
Sandblast Area	Copper	0-1 ft	319	103	56.7	70	80	56.7	56.7	**4.6**	**4.0**	**1.8**	1.8	Yes	Yes	**Yes**	plants, inverts, birds
Sandblast Area	Mercury	0-1 ft	0.723	0.113	0.0660	0.3	0.1	0.066	0.146	**2.4**	**7.2**	**1.7**	0.8	Yes	Yes	**Yes**	plants, inverts, birds
Sandblast Area	Copper	0-3 ft	319	91.8	56.7	70	80	56.7	56.7	**4.6**	**4.0**	**1.6**	1.6	Yes	Yes	**Yes**	plants, inverts, birds
Sandblast Area	Mercury	0-3 ft	0.723	0.0976	0.0660	0.3	0.1	0.066	0.146	**2.4**	**7.2**	**1.5**	0.67	Yes	Yes	**Yes**	plants, inverts, birds
All Four AOPCs Combined	Copper	0-1 ft	494	95.0	56.7	NE	NE	56.7	56.7	NE	NE	**1.7**	1.7	Yes	Yes	**Yes**	birds
All Four AOPCs Combined	Copper	0-3 ft	494	93.6	56.7	NE	NE	56.7	56.7	NE	NE	**1.7**	1.7	Yes	Yes	**Yes**	birds

AOPC = area of potential concern
CPEC = chemical of potential ecological concern
COI = chemical of interest
Eco-SSL = ecological soil screening level
EPC = exposure point concentration
ft = feet
MDD = minimum detectable difference
mg/kg = milligrams per kilogram
NE = Not evaluated (only wide-ranging receptors are evaluated for all four AOPCs combined)
SLV = screening level value
T&E = threatened and endangered
UCL = upper confidence limit on the mean
UPL = upper prediction limit
- - = not applicable

(1) The lower of the maximum detected concentration and the calculated 95% UCL.

Hierarchy of SLV Selection (see Appendix J-5a)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.

(2) United States Environmental Protection Agency (USEPA), 2005 -2007. Ecological Soil Screening Levels. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response. OSWER Directive 9285.7-72. Last Update July 2007.

(3) Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001

(4) Efroymson RA, GW Suter II, BE Sample, DS Jones. 1997. Preliminary Remediation Goals for Ecological Endpoints. August. ORNL. ES/ER/TM-162/R2.

(5) USEPA. 1999. Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer review Draft. EPA530-D-99-001A. August.

(6) RA Efroymson. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process, Nov 1997 Revision. ORNL ES/ER/TM-126/R2.

Bioaccumulative COIs in a Given Media
Any individual COI in any given media with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Maximum concentration for plants and invertebrates; Lower of 95% UCL and maximum concentration for wildlife species (birds and mammals).
(7) Receptor designator (Q) as defined in DEQ guidance (1998):
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species
For this project, Q = 1 for terrestrial plants, soil invertebrates, and birds; Q = 5 for mammals. Although no T&E plant or soil invertebrates species are potentially present, Q = 1 applied for these receptor groups at request of DEQ due to basis of SLVs (Eco-SSLs).

Table O.3-2
Evaluation of COIs Detected in ≤ 5% of Samples at the Landfill AOPC
Bradford Island - Upland Operable Unit
(1 of 1)

Medium	Analyte Group	Total / Dissolved	Analyte	Depth Category (Soil)	Unit	No. of Samples	Detection Rate	Min Detected Value	Max Detected Value	COI Detected in Both Soil and GW?	Plant SLV	Soil Invertebrate SLV	Avian SLV	Mammal SLV	Aquatic SLV	Detected Greater than SLV(s)?	COI Identified as Bioacc-umulative? (LogKow > 3.5)	SLV(s) Accounts for Bioaccumulation?	Potential CPEC?
Soil	Pesticides	Total	4,4'-DDE	0-1 ft	ug/kg	21	5%	17.0	17.0	**Yes, <5% both media**	NV	NV	93	21	--	No	Yes	Yes	No
Soil	Pesticides	Total	BHC (beta)	0-1 ft	ug/kg	21	5%	2.60	2.60	No	NV	NV	8,000	1,000,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	Chlordane (alpha)	0-1 ft	ug/kg	20	5%	4.00	4.00	No	NV	NV	9,000	250,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	Dieldrin	0-1 ft	ug/kg	21	5%	2.10	2.10	**Yes, <5% both media**	NV	NV	22	4.9	--	No	Yes	Yes	No
Soil	Pesticides	Total	Endosulfan II	0-1 ft	ug/kg	21	5%	8.84	8.84	No	NV	NV	42,000	20,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	Endosulfan Sulfate	0-1 ft	ug/kg	21	5%	5.97	5.97	No	NV	NV	42,000	20,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	Heptachlor	0-1 ft	ug/kg	21	5%	2.83	2.83	No	1,000	NV	NV	15,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	Heptachlor Epoxide	0-1 ft	ug/kg	21	5%	14.4	14.4	No	1,000	NV	NV	15,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	4,4'-DDE	0-3 ft	ug/kg	23	4%	17.0	17.0	**Yes, <5% both media**	NV	NV	93	21	--	No	Yes	Yes	No
Soil	Pesticides	Total	BHC (alpha)	0-3 ft	ug/kg	23	4%	2.02	2.02	No	NV	NV	8,000	1,000,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	BHC (beta)	0-3 ft	ug/kg	23	4%	2.60	2.60	No	NV	NV	8,000	1,000,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	Chlordane (alpha)	0-3 ft	ug/kg	20	5%	4.00	4.00	No	NV	NV	9,000	250,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	Dieldrin	0-3 ft	ug/kg	23	4%	2.10	2.10	**Yes, <5% both media**	NV	NV	22	4.9	--	No	Yes	Yes	No
Soil	Pesticides	Total	Endosulfan II	0-3 ft	ug/kg	23	4%	8.84	8.84	No	NV	NV	42,000	20,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	Endosulfan Sulfate	0-3 ft	ug/kg	23	4%	5.97	5.97	No	NV	NV	42,000	20,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	Heptachlor Epoxide	0-3 ft	ug/kg	23	4%	14.4	14.4	No	1,000	NV	NV	15,000	--	No	Yes	No	**Yes-Bio**
Soil	SVOCs	Total	Benzyl Alcohol	0-1 ft	ug/kg	27	4%	14.0	14.0	No	NV	2,260	--	--	--	No	No	--	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	ug/kg	27	4%	64.0	64.0	**Yes, <5% both media**	50,000	NV	--	--	--	No	No	--	No
Soil	SVOCs	Total	Benzyl Alcohol	0-3 ft	ug/kg	29	3%	14.0	14.0	No	NV	2,260	--	--	--	No	No	--	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-3 ft	ug/kg	29	3%	64.0	64.0	**Yes, <5% both media**	50,000	NV	--	--	--	No	No	--	No
Soil	VOCs	Total	Ethylbenzene	0-3 ft	ug/kg	20	5%	2,700	2,700	**Yes, <5% both media**	NV	2,260	--	--	--	Yes	No	--	**Yes**
Soil	VOCs	Total	m,p-Xylenes	0-3 ft	ug/kg	20	5%	9,800	9,800	No	NV	NV	--	--	--	--	No	--	Yes - No SLV
Groundwater	Herbicides	Total	Dichloroprop	N/A	ug/L	21	5%	1.10	1.10	**Yes, <5% gw only**	--	--	--	--	4.00	No	No	--	No
Groundwater	Pesticides	Total	4,4'-DDE	N/A	ug/L	22	5%	0.00246	0.00246	**Yes, <5% both media**	--	--	20	6,000	0.001	Yes	Yes	Yes	**Yes**
Groundwater	Pesticides	Total	Total DDTs	N/A	ug/L	22	5%	0.00246	0.00246	**Yes, <5% gw only**	--	--	20	6,000	0.001	Yes	Yes	Yes	**Yes**
Groundwater	Pesticides	Total	Dieldrin	N/A	ug/L	22	5%	0.000982	0.000982	**Yes, <5% both media**	--	--	600	150	0.056	No	Yes	No	**Yes-Bio**
Groundwater	SVOCs	Total	Phenol	N/A	ug/L	54	2%	0.382	0.382	No	--	--	--	--	110	No	No	--	No
Groundwater	SVOCs	Total	1,4-Dichlorobenzene	N/A	ug/L	54	4%	0.0258	0.0601	No	--	--	--	--	15	No	No	--	No
Groundwater	SVOCs	Total	2-Methylphenol	N/A	ug/L	23	4%	76.0	76.0	No	--	--	--	--	13	Yes	No	--	**Yes**
Groundwater	SVOCs	Total	Anthracene	N/A	ug/L	23	4%	0.0589	0.0589	**Yes, <5% gw only**	--	--	--	--	13	No	Yes	No	**Yes-Bio**
Groundwater	SVOCs	Total	Benzoic Acid	N/A	ug/L	23	4%	11.0	11.0	**Yes, <5% gw only**	--	--	--	--	42	No	No	--	No
Groundwater	SVOCs	Total	Dimethyl Phthalate	N/A	ug/L	23	4%	0.235	0.235	No	--	--	--	--	3	No	No	--	No
Groundwater	SVOCs	Total	p-cresol (4-Methylphenol)	N/A	ug/L	23	4%	29.0	29.0	**Yes, <5% both media**	--	--	--	--	13	Yes	No	--	**Yes**
Groundwater	VOCs	Total	4-Methyl-2-pentanone (MIBK)	N/A	ug/L	22	5%	3.04	3.04	No	--	--	--	--	170	No	No	--	No
Groundwater	VOCs	Total	Carbon Disulfide	N/A	ug/L	22	5%	3.95	3.95	No	--	--	--	--	0.92	Yes	No	--	**Yes**
Groundwater	VOCs	Total	Carbon Tetrachloride	N/A	ug/L	22	5%	1.40	1.40	No	--	--	--	--	74	No	No	--	No
Groundwater	VOCs	Total	cis-1,2-Dichloroethene	N/A	ug/L	22	5%	0.791	0.791	No	--	--	--	--	590	No	No	--	No
Groundwater	VOCs	Total	Ethylbenzene	N/A	ug/L	22	5%	1.00	1.00	**Yes, <5% both media** [a]	--	--	--	--	7.3	No	No	--	No

-- = Not applicable/evaluated
BHC = hexachlorocyclohexane
ft = feet
Max = maximum
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
Min = minimum
No. = number
NV = No value
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
VOC = volatile organic carbon
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
[a] Ethylbenzene was detected at a frequency greater than 5% in soils from 0 to 1 foot bgs, but less than 5% in soils from 0 to 3 feet bgs and groundwater.

Table O.3-3
Evaluation of COIs Detected in ≤ 5% of Samples at the Sandblast AOPC
Bradford Island - Upland Operable Unit
(1 of 1)

Medium	Analyte Group	Total / Dissolved	Analyte	Depth Category (Soil)	Unit	No. of Samples	Detection Rate	Min Detected Value	Max Detected Value	COI Detected in Both Soil and GW?	Plant SLV	Soil Invertebrate SLV	Avian SLV	Mammal SLV	Aquatic SLV	Detected Greater than SLV(s)?	COI Identified as Bioacc-umulative? (LogKow > 3.5)	SLV(s) Accounts for Bioaccumulation?	Potential CPEC?
Soil	Butyltins	Total	Tetrabutyltin	0-1 ft	ug/kg	34	3%	3.99	3.99	No	NV	NV	28,000	1,300,000	--	No	Yes	No	**Yes-Bio**
Soil	Butyltins	Total	Tetrabutyltin	0-3 ft	ug/kg	44	2%	3.99	3.99	No	NV	NV	28,000	1,300,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	Aldrin	0-1 ft	ug/kg	31	3%	4.40	4.40	No	NV	NV	22	4.9	--	No	Yes	Yes	No
Soil	Pesticides	Total	BHC (beta)	0-1 ft	ug/kg	31	3%	0.952	0.952	No	NV	NV	8,000	1,000,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	Aldrin	0-3 ft	ug/kg	37	3%	4.40	4.40	No	NV	NV	22	4.9	--	No	Yes	Yes	No
Soil	Pesticides	Total	BHC (beta)	0-3 ft	ug/kg	37	3%	0.952	0.952	No	NV	NV	8,000	1,000,000	--	No	Yes	No	**Yes-Bio**
Soil	Pesticides	Total	Heptachlor Epoxide	0-3 ft	ug/kg	37	3%	0.634	0.634	No	1,000	NV	NV	15,000	--	No	Yes	No	**Yes-Bio**
Soil	SVOCs	Total	Benzyl Alcohol	0-1 ft	ug/kg	31	3%	7.81	7.81	No	NV	2,260	--	--	--	No	No	--	No
Soil	SVOCs	Total	Diethyl Phthalate	0-1 ft	ug/kg	31	3%	8.80	8.80	No	100,000	NV	--	--	--	No	No	--	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-1 ft	ug/kg	31	3%	27.0	27.0	No	NV	20,000	--	--	--	No	No	--	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-1 ft	ug/kg	31	3%	2.46	2.46	No	50,000	NV	--	--	--	No	No	--	No
Soil	SVOCs	Total	Benzyl Alcohol	0-3 ft	ug/kg	39	3%	7.81	7.81	No	NV	2,260	--	--	--	No	No	--	No
Soil	SVOCs	Total	Diethyl Phthalate	0-3 ft	ug/kg	39	3%	8.80	8.80	No	100,000	NV	--	--	--	No	No	--	No
Soil	SVOCs	Total	N-Nitrosodiphenylamine	0-3 ft	ug/kg	39	3%	27.0	27.0	No	NV	20,000	--	--	--	No	No	--	No
Soil	SVOCs	Total	p-cresol (4-Methylphenol)	0-3 ft	ug/kg	39	3%	2.46	2.46	No	50,000	NV	--	--	--	No	No	--	No
Soil	VOCs	Total	1,1-Dichloroethane	0-1 ft	ug/kg	37	3%	0.290	0.290	**Yes, <5% soil only**	NV	NV	--	--	--	--	No	--	Yes - No SLV
Soil	VOCs	Total	1,4-Dichlorobenzene	0-1 ft	ug/kg	37	3%	0.160	0.160	No	NV	20,000	--	--	--	No	No	--	No
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-1 ft	ug/kg	37	3%	12.0	12.0	**Yes, <5% soil only**	NV	NV	--	--	--	--	No	--	Yes - No SLV
Soil	VOCs	Total	n-Butylbenzene	0-1 ft	ug/kg	37	3%	0.0920	0.0920	No	NV	2,260	--	--	--	No	Yes	No Bird/Mammal SLV	**Yes-Bio**
Soil	VOCs	Total	n-Propylbenzene	0-1 ft	ug/kg	37	3%	0.150	0.150	No	NV	2,260	--	--	--	No	Yes	No Bird/Mammal SLV	**Yes-Bio**
Soil	VOCs	Total	1,1,1-Trichloroethane (TCA)	0-3 ft	ug/kg	46	4%	0.490	0.580	**Yes, <5% soil only** [a]	NV	NV	--	--	--	--	No	--	Yes - No SLV
Soil	VOCs	Total	1,1-Dichloroethane	0-3 ft	ug/kg	46	2%	0.290	0.290	**Yes, <5% soil only**	NV	NV	--	--	--	--	No	--	Yes - No SLV
Soil	VOCs	Total	1,4-Dichlorobenzene	0-3 ft	ug/kg	46	4%	0.140	0.160	No	NV	20,000	--	--	--	No	No	--	No
Soil	VOCs	Total	Chloromethane	0-3 ft	ug/kg	46	4%	0.230	0.250	No	NV	NV	--	--	--	--	No	--	Yes - No SLV
Soil	VOCs	Total	cis-1,2-Dichloroethene	0-3 ft	ug/kg	46	4%	12.0	120	**Yes, <5% soil only**	NV	NV	--	--	--	--	No	--	Yes - No SLV
Soil	VOCs	Total	Isopropylbenzene	0-3 ft	ug/kg	46	2%	47.3	47.3	No	NV	2,260	--	--	--	No	Yes	No Bird/Mammal SLV	**Yes-Bio**
Soil	VOCs	Total	n-Butylbenzene	0-3 ft	ug/kg	46	2%	0.0920	0.0920	No	NV	2,260	--	--	--	No	Yes	No Bird/Mammal SLV	**Yes-Bio**
Soil	VOCs	Total	sec-Butylbenzene	0-3 ft	ug/kg	46	4%	0.435	90.2	No	NV	2,260	--	--	--	No	Yes	No Bird/Mammal SLV	**Yes-Bio**
Soil	VOCs	Total	trans-1,2-Dichloroethene	0-3 ft	ug/kg	46	2%	2.28	2.28	**Yes, <5% soil only** [b]	NV	NV	--	--	--	--	No	--	Yes - No SLV
Groundwater	SVOCs	Total	Benzo(b)fluoranthene	N/A	ug/L	20	5%	0.0180	0.0180	**Yes, <5% gw only**	--	--	--	--	0.6774	No	Yes	No	**Yes-Bio**
Groundwater	SVOCs	Total	Phenanthrene	N/A	ug/L	20	5%	0.0840	0.0840	**Yes, <5% gw only**	--	--	--	--	6.30	No	Yes	No	**Yes-Bio**
Groundwater	VOCs	Total	Chloroform	N/A	ug/L	20	5%	0.180	0.180	**Yes, <5% gw only**	--	--	--	--	1,240	No	No	--	No

-- = Not applicable/evaluated
BHC = hexachlorocyclohexane
ft = feet
Max = maximum
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
Min = minimum
No. = number
NV = No value
SVOC = semi-volatile organic carbon
ug/kg = micrograms per kilogram
ug/L = micrograms per liter
VOC = volatile organic carbon
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV

[a] 1,1,1-Trichloroethane (TCA) was detected at a frequency greater than 5% in soils from 0 to 1 foot bgs and groundwater, but less than 5% in soils from 0 to 3 feet bgs.

[b] trans-1,2-Dichloroethene was detected at a frequency greater than 5% in groundwater, but less than 5% in soils from 0 to 3 feet bgs (not detected at all in soils from 0 to 1 foot bgs).

Table O.3-4
Identification of CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Benthic Invertebrates
Bradford Island - Upland Operable Unit
(1 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II Sediment SLVs for Benthics Exposed to Erodible Soil (1)	Toxicity Ratio for Benthics (Tij)	Chemical is a Concern for Benthic Community? (Tij>1)	COI is Identified as a CPEC? (2) (Q = 1)
INORGANICS (mg/kg)							
Landfill	Arsenic	0-1 ft	6.20	6.0	1.03	Yes	**Yes**
Landfill	Cadmium	0-1 ft	1.70	0.674	2.52	Yes	**Yes**
Landfill	Chromium	0-1 ft	801	37.0	21.6	Yes	**Yes**
Landfill	Cobalt	0-1 ft	22.7	15.2	1.49	Yes	**Yes**
Landfill	Copper	0-1 ft	60.5	55.6	1.09	Yes	**Yes**
Landfill	Lead	0-1 ft	680	35.0	19.4	Yes	**Yes**
Landfill	Manganese	0-1 ft	614	1,100	0.558	No	No
Landfill	Mercury	0-1 ft	0.320	0.214	1.50	Yes	**Yes**
Landfill	Nickel	0-1 ft	570	21.2	26.9	Yes	**Yes**
Landfill	Selenium	0-1 ft	0.848	NA	- -	- -	Yes - No SLV
Landfill	Silver	0-1 ft	0.500	4.50	0.111	No	No
Landfill	Thallium	0-1 ft	0.378	0.354	1.07	Yes	**Yes**
Landfill	Zinc	0-1 ft	221	123	1.80	Yes	**Yes**
Sandblast Area	Cadmium	0-1 ft	1.06	0.674	1.57	Yes	**Yes**
Sandblast Area	Chromium	0-1 ft	162	37	4.38	Yes	**Yes**
Sandblast Area	Copper	0-1 ft	71.6	55.6	1.29	Yes	**Yes**
Sandblast Area	Lead	0-1 ft	319	35	9.11	Yes	**Yes**
Sandblast Area	Manganese	0-1 ft	479	1,100	0.435	No	No
Sandblast Area	Nickel	0-1 ft	74.9	21.2	3.53	Yes	**Yes**
Sandblast Area	Selenium	0-1 ft	0.650	0.500	1.30	Yes	**Yes**
Sandblast Area	Silver	0-1 ft	0.175	4.50	0.0389	No	No
Sandblast Area	Zinc	0-1 ft	203	123	1.65	Yes	**Yes**
Bulb Slope	Lead	0-1 ft	597	35	17.1	Yes	**Yes**
Bulb Slope	Mercury	0-1 ft	1.54	0.214	7.20	Yes	**Yes**
BUTYLTINS (ug/kg)							
Sandblast Area	Dibutyltin	0-1 ft	9.10	NA	- -	- -	Yes - No SLV
Sandblast Area	Monobutyltin	0-1 ft	8.25	NA	- -	- -	Yes - No SLV
Sandblast Area	Tributyltin	0-1 ft	12.8	NA	- -	- -	Yes - No SLV
PESTICIDES (ug/kg)							
Landfill	4,4'-DDT	0-1 ft	28.0	4.00	7.00	Yes	**Yes**
Landfill	Total DDTs	0-1 ft	29.9	7.00	4.27	Yes	**Yes**
Landfill	Dieldrin	0-1 ft	2.10	3.00	0.700	No	No
Sandblast Area	4,4'-DDE	0-1 ft	0.440	4.00	0.110	No	No
Sandblast Area	4,4'-DDT	0-1 ft	10.0	4.00	2.50	Yes	**Yes**
Sandblast Area	Total DDTs	0-1 ft	10.4	7.00	1.49	Yes	**Yes**
Sandblast Area	BHC (delta)	0-1 ft	0.0780	0.900	0.0867	No	No

Table O.3-4
Identification of CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Benthic Invertebrates
Bradford Island - Upland Operable Unit
(2 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II Sediment SLVs for Benthics Exposed to Erodible Soil (1)	Toxicity Ratio for Benthics (Tij)	Chemical is a Concern for Benthic Community? (Tij>1)	COI is Identified as a CPEC? (2) (Q = 1)
Sandblast Area	Endosulfan II	0-1 ft	0.240	NA	- -	- -	Yes - No SLV
Sandblast Area	Endosulfan Sulfate	0-1 ft	0.770	NA	- -	- -	Yes - No SLV
Sandblast Area	Heptachlor	0-1 ft	0.380	10	0.0380	No	No
PCBs (ug/kg)							
Landfill	Aroclor 1254	0-1 ft	49.0	7.00	7.00	Yes	**Yes**
Landfill	Aroclor 1260	0-1 ft	92.0	7.00	13.1	Yes	**Yes**
Landfill	Total PCBs (Aroclors)	0-1 ft	127	34.0	3.74	Yes	**Yes**
Sandblast Area	Aroclor 1260	0-1 ft	67.0	7.00	9.57	Yes	**Yes**
Sandblast Area	Total PCBs (Aroclors)	0-1 ft	69.1	34.0	2.03	Yes	**Yes**
Bulb Slope	Aroclor 1260	0-1 ft	251	7.00	35.9	Yes	**Yes**
Bulb Slope	Total PCBs (Aroclors)	0-1 ft	251	34.0	7.38	Yes	**Yes**
VOCs (ug/kg)							
Landfill	Dichloromethane (Methylene Chloride)	0-1 ft	1,000	NA	- -	- -	Yes - No SLV
Landfill	Tetrachloroethene (PCE)	0-1 ft	9.70	NA	- -	- -	Yes - No SLV
Landfill	Toluene	0-1 ft	1.46	NA	- -	- -	Yes - No SLV
Sandblast Area	1,2,4-Trimethylbenzene	0-1 ft	0.280	NA	- -	- -	Yes - No SLV
Sandblast Area	2-Butanone (MEK)	0-1 ft	50.0	NA	- -	- -	Yes - No SLV
Sandblast Area	2-Hexanone	0-1 ft	8.80	NA	- -	- -	Yes - No SLV
Sandblast Area	4-Isopropyltoluene	0-1 ft	2.50	NA	- -	- -	Yes - No SLV
Sandblast Area	4-Methyl-2-pentanone (MIBK)	0-1 ft	1.20	NA	- -	- -	Yes - No SLV
Sandblast Area	Acetone	0-1 ft	540	NA	- -	- -	Yes - No SLV
Sandblast Area	Benzene	0-1 ft	1.00	NA	- -	- -	Yes - No SLV
Sandblast Area	Bromomethane	0-1 ft	5.00	NA	- -	- -	Yes - No SLV
Sandblast Area	Carbon Disulfide	0-1 ft	1.00	NA	- -	- -	Yes - No SLV
Sandblast Area	Chloroform	0-1 ft	19.0	NA	- -	- -	Yes - No SLV
Sandblast Area	Chloromethane	0-1 ft	0.250	NA	- -	- -	Yes - No SLV
Sandblast Area	cis-1,2-Dichloroethene	0-1 ft	12.0	NA	- -	- -	Yes - No SLV
Sandblast Area	Dichlorodifluoromethane	0-1 ft	94.0	NA	- -	- -	Yes - No SLV
Sandblast Area	Dichloromethane (Methylene Chloride)	0-1 ft	460	NA	- -	- -	Yes - No SLV
Sandblast Area	Ethylbenzene	0-1 ft	0.200	NA	- -	- -	Yes - No SLV
Sandblast Area	m,p-Xylenes	0-1 ft	0.360	NA	- -	- -	Yes - No SLV
Sandblast Area	Naphthalene	0-1 ft	0.540	176	0.00307	No	No
Sandblast Area	Toluene	0-1 ft	1.30	NA	- -	- -	Yes - No SLV
SVOCs (ug/kg)							
Landfill	Benzoic Acid	0-1 ft	300	NA	- -	- -	Yes - No SLV
Landfill	Benzyl Alcohol	0-1 ft	14.0	NA	- -	- -	Yes - No SLV
Landfill	Bis(2-ethylhexyl) Phthalate	0-1 ft	420	750	0.560	No	No

Table O.3-4
Identification of CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Benthic Invertebrates
Bradford Island - Upland Operable Unit
(3 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II Sediment SLVs for Benthics Exposed to Erodible Soil (1)	Toxicity Ratio for Benthics (Tij)	Chemical is a Concern for Benthic Community? (Tij>1)	COI is Identified as a CPEC? (2) (Q = 1)
Landfill	Carbazole	0-1 ft	210	140	1.50	Yes	**Yes**
Landfill	Dibenzofuran	0-1 ft	36.0	5,100	0.00706	No	No
Landfill	Di-n-butyl Phthalate	0-1 ft	1,800	110	16.4	Yes	**Yes**
Sandblast Area	Bis(2-ethylhexyl) Phthalate	0-1 ft	260,000	750	347	Yes	**Yes**
Sandblast Area	Carbazole	0-1 ft	91.0	140	0.650	No	No
PAHs (ug/kg)							
Landfill	2-Methylnaphthalene	0-1 ft	11.0	NA	- -	- -	Yes - No SLV
Landfill	Acenaphthene	0-1 ft	1160	290	4.00	Yes	**Yes**
Landfill	Acenaphthylene	0-1 ft	19.0	160	0.119	No	No
Landfill	Anthracene	0-1 ft	1070	57	18.8	Yes	**Yes**
Landfill	Fluorene	0-1 ft	510	77	6.62	Yes	**Yes**
Landfill	Naphthalene	0-1 ft	79.0	176	0.449	No	No
Landfill	Phenanthrene	0-1 ft	4,200	42	100	Yes	**Yes**
Landfill	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	7,043	76	92.7	Yes	**Yes**
Landfill	Benzo(a)anthracene	0-1 ft	4,500	32	141	Yes	**Yes**
Landfill	Benzo(a)pyrene	0-1 ft	6,200	32	194	Yes	**Yes**
Landfill	Benzo(b)fluoranthene	0-1 ft	8,200	27	304	Yes	**Yes**
Landfill	Benzo(g,h,i)perylene	0-1 ft	3,300	300	11.0	Yes	**Yes**
Landfill	Benzo(k)fluoranthene	0-1 ft	2,500	27	92.6	Yes	**Yes**
Landfill	Chrysene	0-1 ft	5,900	57	104	Yes	**Yes**
Landfill	Dibenz(a,h)anthracene	0-1 ft	1,000	33	30.3	Yes	**Yes**
Landfill	Fluoranthene	0-1 ft	14,000	111	126	Yes	**Yes**
Landfill	Indeno(1,2,3-cd)pyrene	0-1 ft	4,600	17	271	Yes	**Yes**
Landfill	Pyrene	0-1 ft	9,100	53	172	Yes	**Yes**
Landfill	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	55,030	193	285	Yes	**Yes**
Sandblast Area	Acenaphthene	0-1 ft	68.0	290	0.234	No	No
Sandblast Area	Anthracene	0-1 ft	150	57	2.63	Yes	**Yes**
Sandblast Area	Phenanthrene	0-1 ft	940	42	22.4	Yes	**Yes**
Sandblast Area	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	1,356	76	17.8	Yes	**Yes**
Sandblast Area	Benzo(a)anthracene	0-1 ft	1,200	32	37.5	Yes	**Yes**
Sandblast Area	Benzo(a)pyrene	0-1 ft	1,000	32	31.3	Yes	**Yes**
Sandblast Area	Benzo(b)fluoranthene	0-1 ft	1,600	27	59.3	Yes	**Yes**
Sandblast Area	Benzo(g,h,i)perylene	0-1 ft	590	300	1.97	Yes	**Yes**
Sandblast Area	Benzo(k)fluoranthene	0-1 ft	570	27	21.1	Yes	**Yes**
Sandblast Area	Chrysene	0-1 ft	1,500	57	26.3	Yes	**Yes**
Sandblast Area	Dibenz(a,h)anthracene	0-1 ft	220	33	6.67	Yes	**Yes**
Sandblast Area	Fluoranthene	0-1 ft	2,100	111	18.9	Yes	**Yes**
Sandblast Area	Indeno(1,2,3-cd)pyrene	0-1 ft	690	17	40.6	Yes	**Yes**

Table O.3-4
Identification of CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Benthic Invertebrates
Bradford Island - Upland Operable Unit
(4 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II Sediment SLVs for Benthics Exposed to Erodible Soil (1)	Toxicity Ratio for Benthics (Tij)	Chemical is a Concern for Benthic Community? (Tij>1)	COI is Identified as a CPEC? (2) (Q = 1)
Sandblast Area	Pyrene	0-1 ft	1,900	53	35.8	Yes	**Yes**
Sandblast Area	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	11,370	193	58.9	Yes	**Yes**
TPH (mg/kg)							
Sandblast Area	Diesel Range Organics	0-1 ft	69.0	NA	- -	- -	Yes - No SLV
Sandblast Area	Gasoline Range Organics	0-1 ft	3.20	NA	- -	- -	Yes - No SLV
Sandblast Area	Residual Range Organics	0-1 ft	1,000	NA	- -	- -	Yes - No SLV
Bulb Slope	Diesel Range Organics	0-1 ft	170	NA	- -	- -	Yes - No SLV
Bulb Slope	Residual Range Organics	0-1 ft	410	NA	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

The Landfill AOPC potentially erodible soil subset is comprised of the following samples: BIL01USE through BIL09USE, BIL13SSI, and L-01 through L-04.

The Sandblast Area AOPC potentially erodible soil subset is comprised of the following samples: SB-EUA, SB-EUB, SB-EUA-02, SB-EUA-04, SB-EUA-06, SB-EUA-08, SB-EUB-02, SB-EUB-03, SB-EUB-12, SB-EUB-15, and SB-04.

The entire Bulb Slope AOPC is potentially erodible.
(1) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the DEQ Level II SLV (see Appendix J-5c):

Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

Individual COIs in a Given Medium
(2) Any individual COI in any given medium with Tij > Q, where Tij = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.
Tij = Risk ratios for contaminant *i* in medium *j*
Q = Receptor designator
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table O.3-5
Identification of CPECs in Mass Wasting and Erodible Soil at Upland OU - Multiple COIs for Benthic Invertebrates
Bradford Island - Upland Operable Unit
(1 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II Sediment SLVs for Benthics Exposed to Erodible Soil (1)	Toxicity Ratio for Benthics (Tij)	(Tij/Tj) (2)	Chemical is a Concern for Benthic Community? (Tij/Tj >= [1/Nij] x Q when Q = 1)	COI is Identified as a CPEC? (2) (Q = 1)
INORGANICS (mg/kg)								
Landfill	Arsenic	0-1 ft	6.20	6.0	1.03	0.000609	No	No
Landfill	Cadmium	0-1 ft	1.70	0.674	2.52	0.00149	No	No
Landfill	Chromium	0-1 ft	801	37.0	21.6	0.0128	No	No
Landfill	Cobalt	0-1 ft	22.7	15.2	1.49	0.000880	No	No
Landfill	Copper	0-1 ft	60.5	55.6	1.09	0.000641	No	No
Landfill	Lead	0-1 ft	680	35.0	19.4	0.0115	No	No
Landfill	Manganese	0-1 ft	614	1,100	0.558	0.000329	No	No
Landfill	Mercury	0-1 ft	0.320	0.214	1.50	0.000881	No	No
Landfill	Nickel	0-1 ft	570	21.2	26.9	0.0158	No	No
Landfill	Selenium	0-1 ft	0.848	NA	- -	- -	- -	Yes - No SLV
Landfill	Silver	0-1 ft	0.500	4.50	0.111	0.0000655	No	No
Landfill	Thallium	0-1 ft	0.378	0.354	1.07	0.000629	No	No
Landfill	Zinc	0-1 ft	221	123	1.80	0.00106	No	No
Sandblast Area	Cadmium	0-1 ft	1.06	0.674	1.57	0.00230	No	No
Sandblast Area	Chromium	0-1 ft	162	37	4.38	0.00639	No	No
Sandblast Area	Copper	0-1 ft	71.6	55.6	1.29	0.00188	No	No
Sandblast Area	Lead	0-1 ft	319	35	9.11	0.0133	No	No
Sandblast Area	Manganese	0-1 ft	479	1,100	0.435	0.000636	No	No
Sandblast Area	Nickel	0-1 ft	74.9	21.2	3.53	0.00516	No	No
Sandblast Area	Selenium	0-1 ft	0.650	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Silver	0-1 ft	0.175	4.50	0.0389	0.0000568	No	No
Sandblast Area	Zinc	0-1 ft	203	123	1.65	0.00241	No	No
Bulb Slope	Lead	0-1 ft	597	35	17.1	0.284	No	No
Bulb Slope	Mercury	0-1 ft	1.54	0.214	7.20	0.120	No	No
BUTYLTINS (ug/kg)								
Sandblast Area	Dibutyltin	0-1 ft	9.10	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Monobutyltin	0-1 ft	8.25	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Tributyltin	0-1 ft	12.8	NA	- -	- -	- -	Yes - No SLV
PESTICIDES (ug/kg)								
Landfill	4,4'-DDT	0-1 ft	28.0	4.00	7.00	0.00413	No	No
Landfill	Total DDTs	0-1 ft	29.9	7.00	4.27	0.00252	No	No
Landfill	Dieldrin	0-1 ft	2.10	3.00	0.700	0.000413	No	No
Sandblast Area	4,4'-DDE	0-1 ft	0.440	4.00	0.110	0.000161	No	No
Sandblast Area	4,4'-DDT	0-1 ft	10.0	4.00	2.50	0.00365	No	No
Sandblast Area	Total DDTs	0-1 ft	10.4	7.00	1.49	0.00217	No	No

Table O.3-5
Identification of CPECs in Mass Wasting and Erodible Soil at Upland OU - Multiple COIs for Benthic Invertebrates
Bradford Island - Upland Operable Unit
(2 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II Sediment SLVs for Benthics Exposed to Erodible Soil (1)	Toxicity Ratio for Benthics (Tij)	(Tij/Tj) (2)	Chemical is a Concern for Benthic Community? (Tij/Tj >= [1/Nij] x Q when Q = 1)	COI is Identified as a CPEC? (2) (Q = 1)
Sandblast Area	BHC (delta)	0-1 ft	0.0780	0.900	0.0867	0.000126	No	No
Sandblast Area	Endosulfan II	0-1 ft	0.240	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Endosulfan Sulfate	0-1 ft	0.770	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Heptachlor	0-1 ft	0.380	10	0.0380	0.0000555	No	No
PCBs (ug/kg)								
Landfill	Aroclor 1254	0-1 ft	49.0	7.00	7.00	0.00413	No	No
Landfill	Aroclor 1260	0-1 ft	92.0	7.00	13.1	0.00775	No	No
Sandblast Area	Aroclor 1260	0-1 ft	67.0	7.00	9.57	0.0140	No	No
Bulb Slope	Aroclor 1260	0-1 ft	251	7.00	35.9	0.597	Yes	**Yes**
VOCs (ug/kg)								
Landfill	Dichloromethane (Methylene Chloride)	0-1 ft	1,000	NA	- -	- -	- -	Yes - No SLV
Landfill	Tetrachloroethene (PCE)	0-1 ft	9.70	NA	- -	- -	- -	Yes - No SLV
Landfill	Toluene	0-1 ft	1.46	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	1,2,4-Trimethylbenzene	0-1 ft	0.280	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	2-Butanone (MEK)	0-1 ft	50.0	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	2-Hexanone	0-1 ft	8.80	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	4-Isopropyltoluene	0-1 ft	2.50	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	4-Methyl-2-pentanone (MIBK)	0-1 ft	1.20	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Acetone	0-1 ft	540	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Benzene	0-1 ft	1.00	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Bromomethane	0-1 ft	5.00	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Carbon Disulfide	0-1 ft	1.00	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Chloroform	0-1 ft	19.0	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Chloromethane	0-1 ft	0.250	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	cis-1,2-Dichloroethene	0-1 ft	12.0	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Dichlorodifluoromethane	0-1 ft	94.0	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Dichloromethane (Methylene Chloride)	0-1 ft	460	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Ethylbenzene	0-1 ft	0.200	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	m,p-Xylenes	0-1 ft	0.360	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Naphthalene	0-1 ft	0.540	176	0.00307	0.00000448	No	No
Sandblast Area	Toluene	0-1 ft	1.30	NA	- -	- -	- -	Yes - No SLV
SVOCs (ug/kg)								
Landfill	Benzoic Acid	0-1 ft	300	NA	- -	- -	- -	Yes - No SLV
Landfill	Benzyl Alcohol	0-1 ft	14.0	NA	- -	- -	- -	Yes - No SLV
Landfill	Bis(2-ethylhexyl) Phthalate	0-1 ft	420	750	0.560	0.000330	No	No
Landfill	Carbazole	0-1 ft	210	140	1.50	0.000884	No	No

Table O.3-5
Identification of CPECs in Mass Wasting and Erodible Soil at Upland OU - Multiple COIs for Benthic Invertebrates
Bradford Island - Upland Operable Unit
(3 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II Sediment SLVs for Benthics Exposed to Erodible Soil (1)	Toxicity Ratio for Benthics (Tij)	(Tij/Tj) (2)	Chemical is a Concern for Benthic Community? (Tij/Tj >= [1/Nij] x Q when Q = 1)	COI is Identified as a CPEC? (2) (Q = 1)
Landfill	Dibenzofuran	0-1 ft	36.0	5,100	0.00706	0.00000416	No	No
Landfill	Di-n-butyl Phthalate	0-1 ft	1,800	110	16.4	0.00965	No	No
Sandblast Area	Bis(2-ethylhexyl) Phthalate	0-1 ft	260,000	750	347	0.506	Yes	**Yes**
Sandblast Area	Carbazole	0-1 ft	91.0	140	0.650	0.000949	No	No
PAHs (ug/kg)								
Landfill	2-Methylnaphthalene	0-1 ft	11.0	NA	- -	- -	- -	Yes - No SLV
Landfill	Acenaphthene	0-1 ft	1160	290	4.00	0.00236	No	No
Landfill	Acenaphthylene	0-1 ft	19.0	160	0.119	0.0000700	No	No
Landfill	Anthracene	0-1 ft	1070	57	18.8	0.0111	No	No
Landfill	Fluorene	0-1 ft	510	77	6.62	0.00390	No	No
Landfill	Naphthalene	0-1 ft	79.0	176	0.449	0.000265	No	No
Landfill	Phenanthrene	0-1 ft	4,200	42	100	0.0589	Yes	**Yes**
Landfill	Benzo(a)anthracene	0-1 ft	4,500	32	141	0.0829	Yes	**Yes**
Landfill	Benzo(a)pyrene	0-1 ft	6,200	32	194	0.114	Yes	**Yes**
Landfill	Benzo(b)fluoranthene	0-1 ft	8,200	27	304	0.179	Yes	**Yes**
Landfill	Benzo(g,h,i)perylene	0-1 ft	3,300	300	11.0	0.00648	No	No
Landfill	Benzo(k)fluoranthene	0-1 ft	2,500	27	92.6	0.0546	Yes	**Yes**
Landfill	Chrysene	0-1 ft	5,900	57	104	0.0610	Yes	**Yes**
Landfill	Dibenz(a,h)anthracene	0-1 ft	1,000	33	30.3	0.0179	No	No
Landfill	Fluoranthene	0-1 ft	14,000	111	126	0.0743	Yes	**Yes**
Landfill	Indeno(1,2,3-cd)pyrene	0-1 ft	4,600	17	271	0.159	Yes	**Yes**
Landfill	Pyrene	0-1 ft	9,100	53	172	0.101	Yes	**Yes**
Sandblast Area	Acenaphthene	0-1 ft	68.0	290	0.234	0.000342	No	No
Sandblast Area	Anthracene	0-1 ft	150	57	2.63	0.00384	No	No
Sandblast Area	Phenanthrene	0-1 ft	940	42	22.4	0.0327	No	No
Sandblast Area	Benzo(a)anthracene	0-1 ft	1,200	32	37.5	0.0547	Yes	**Yes**
Sandblast Area	Benzo(a)pyrene	0-1 ft	1,000	32	31.3	0.0456	Yes	**Yes**
Sandblast Area	Benzo(b)fluoranthene	0-1 ft	1,600	27	59.3	0.0865	Yes	**Yes**
Sandblast Area	Benzo(g,h,i)perylene	0-1 ft	590	300	1.97	0.00287	No	No
Sandblast Area	Benzo(k)fluoranthene	0-1 ft	570	27	21.1	0.0308	No	No
Sandblast Area	Chrysene	0-1 ft	1,500	57	26.3	0.0384	Yes	**Yes**
Sandblast Area	Dibenz(a,h)anthracene	0-1 ft	220	33	6.67	0.00973	No	No
Sandblast Area	Fluoranthene	0-1 ft	2,100	111	18.9	0.0276	No	No
Sandblast Area	Indeno(1,2,3-cd)pyrene	0-1 ft	690	17	40.6	0.0592	Yes	**Yes**
Sandblast Area	Pyrene	0-1 ft	1,900	53	35.8	0.0523	Yes	**Yes**
TPH (mg/kg)								

Table O.3-5
Identification of CPECs in Mass Wasting and Erodible Soil at Upland OU - Multiple COIs for Benthic Invertebrates
Bradford Island - Upland Operable Unit
(4 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Max Detected Conc in Soil	Level II Sediment SLVs for Benthics Exposed to Erodible Soil (1)	Toxicity Ratio for Benthics (Tij)	(Tij/Tj) (2)	Chemical is a Concern for Benthic Community? (Tij/Tj >= [1/Nij] x Q when Q = 1)	COI is Identified as a CPEC? (2) (Q = 1)
Sandblast Area	Diesel Range Organics	0-1 ft	69.0	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Gasoline Range Organics	0-1 ft	3.20	NA	- -	- -	- -	Yes - No SLV
Sandblast Area	Residual Range Organics	0-1 ft	1,000	NA	- -	- -	- -	Yes - No SLV
Bulb Slope	Diesel Range Organics	0-1 ft	170	NA	- -	- -	- -	Yes - No SLV
Bulb Slope	Residual Range Organics	0-1 ft	410	NA	- -	- -	- -	Yes - No SLV

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
NA = not available
SLV = screening level value
T&E = threatened and endangered
- - = not applicable

The Landfill AOPC potentially erodible soil subset is comprised of the following samples: BIL01USE through BIL09USE, BIL13SSI, and L-01 through L-04.

The Sandblast Area AOPC potentially erodible soil subset is comprised of the following samples: SB-EUA, SB-EUB, SB-EUA-02, SB-EUA-04, SB-EUA-06, SB-EUA-08, SB-EUB-02, SB-EUB-03, SB-EUB-12, SB-EUB-15, and SB-04.
The entire Bulb Slope AOPC is potentially erodible.

(1) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the DEQ Level II SLV (see Appendix J-5c):

Oregon Department of Environmental Quality (DEQ), 1998. Guidance for Ecological Risk Assessment: Levels I, II, III, IV. Waste Management and Cleanup Division. Final. April. Updated December 2001.

Multiple COIs Simultaneously within a Given Medium
(2) COIs with Tij/Tj values >= 1/Nij*Q must be retained as a CPEC, provided Tj>Q.
Where: Tij = toxicity ratio for contaminant *i* in medium *j* = chemical specific
Q = Receptor designator
Landfill AOPC Mass Wasting Soil Subset
Nij = total number of *i* contaminants in medium *j* = 36
Tj (LF) = sum of toxicity ratios for all contaminants in medium *j* = 1697
Sandblast AOPC Erodible Soil Subset
Nij = total number of *i* contaminants in medium *j* = 29
Tj (SB) = sum of toxicity ratios for all contaminants in medium *j* = 686
Bulb Slope Mass Wasting Soil Subset
Nij = total number of *i* contaminants in medium *j* = 3
Tj (BS) = sum of toxicity ratios for all contaminants in medium *j* = 60.1

Tj is the sum of the individual toxicity ratio (Tij) for individual metals, pesticides (except Total DDTs was used instead of the individual DDT isomers), individual PCBs as Aroclors, VOCs, SVOCs, and individual PAHs.
Assumptions: Cij = Maximum detected concentration for immobile species (plants and invertebrates).
Q = 1 for terrestrial T&E species and all aquatic species
Q = 5 for all common terrestrial species

Table O.3-6
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Fish Shellfish
Bradford Island - Upland Operable Unit
(1 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Freshwater Fish Exposed to Erodible Soil (2)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)								
Landfill	Arsenic	0-1 ft	4.95	5.86	0.845	Yes	Yes	**Yes**
Landfill	Cadmium	0-1 ft	1.04	0.674	1.54	Yes	Yes	**Yes**
Landfill	Lead	0-1 ft	324	14.5	22.3	Yes	Yes	**Yes**
Landfill	Manganese	0-1 ft	447	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Mercury	0-1 ft	0.214	0.214	1.00	Yes	Yes	**Yes**
Landfill	Selenium	0-1 ft	0.490	2.00	0.245	No	- -	**Yes**
Landfill	Thallium	0-1 ft	0.378	0.354	1.07	Yes	No	**Yes**
Landfill	Zinc	0-1 ft	184	106	1.74	Yes	No	**Yes**
Sandblast Area	Cadmium	0-1 ft	1.06	0.674	1.57	Yes	Yes	**Yes**
Sandblast Area	Lead	0-1 ft	319	14.5	22.0	Yes	Yes	**Yes**
Sandblast Area	Manganese	0-1 ft	479	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Selenium	0-1 ft	0.650	2.00	0.325	NA	- -	**Yes**
Sandblast Area	Zinc	0-1 ft	203	106	1.92	Yes	No	**Yes**
Bulb Slope	Lead	0-1 ft	307	14.5	21.2	Yes	Yes	**Yes**
Bulb Slope	Mercury	0-1 ft	0.720	0.214	3.36	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)								
Sandblast Area	Tributyltin	0-1 ft	12.8	2.3	5.57	Yes	Yes	**Yes**
PESTICIDES (ug/kg)								
Landfill	4,4'-DDT	0-1 ft	18.0	0.390	46.2	Yes	Yes	**Yes**
Landfill	Total DDTs	0-1 ft	19.2	0.390	49.1	Yes	Yes	**Yes**
Landfill	Dieldrin	0-1 ft	2.10	2.20	0.955	Yes	Yes	**Yes**
Sandblast Area	4,4'-DDE	0-1 ft	0.440	0.390	1.13	Yes	Yes	**Yes**
Sandblast Area	4,4'-DDT	0-1 ft	10.0	0.390	25.6	Yes	Yes	**Yes**
Sandblast Area	Total DDTs	0-1 ft	10.4	0.390	26.7	Yes	Yes	**Yes**
Sandblast Area	BHC (delta)	0-1 ft	0.0780	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Endosulfan II	0-1 ft	0.240	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Endosulfan Sulfate	0-1 ft	0.770	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Heptachlor	0-1 ft	0.380	NA	- -	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)								
Landfill	Aroclor 1254	0-1 ft	28.0	22.0	1.27	Yes	Yes	**Yes**
Landfill	Aroclor 1260	0-1 ft	55.4	22.0	2.52	Yes	Yes	**Yes**
Landfill	Total PCBs (Aroclors)	0-1 ft	88.2	22.0	4.01	Yes	Yes	**Yes**
Sandblast Area	Aroclor 1260	0-1 ft	67.0	22.0	3.05	Yes	Yes	**Yes**
Sandblast Area	Total PCBs (Aroclors)	0-1 ft	69.1	22.0	3.14	Yes	Yes	**Yes**
Bulb Slope	Aroclor 1260	0-1 ft	106	22.0	4.82	Yes	Yes	**Yes**

Table O.3-6
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Fish Shellfish
Bradford Island - Upland Operable Unit
(2 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Freshwater Fish Exposed to Erodible Soil (2)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
Bulb Slope	Total PCBs (Aroclors)	0-1 ft	104	22.0	4.72	Yes	Yes	**Yes**
VOCs (ug/kg)								
Sandblast Area	1,2,4-Trimethylbenzene	0-1 ft	0.243	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	4-Isopropyltoluene	0-1 ft	1.46	NA	- -	Yes	No SLV	**Yes-Bio**
SVOCs (ug/kg)								
Landfill	Bis(2-ethylhexyl) Phthalate	0-1 ft	229	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Carbazole	0-1 ft	81.5	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Dibenzofuran	0-1 ft	32.9	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Di-n-butyl Phthalate	0-1 ft	563	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Bis(2-ethylhexyl) Phthalate	0-1 ft	260,000	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Carbazole	0-1 ft	91.0	NA	- -	Yes	No SLV	**Yes-Bio**
PAHs (ug/kg)								
Landfill	2-Methylnaphthalene[4]	0-1 ft	11.0	37,000	0.000297	Yes	Yes	No
Landfill	Acenaphthene[4]	0-1 ft	592	37,000	0.0160	Yes	Yes	No
Landfill	Acenaphthylene[4]	0-1 ft	18.5	37,000	0.000500	Yes	Yes	No
Landfill	Anthracene[4]	0-1 ft	722	37,000	0.0195	Yes	Yes	No
Landfill	Fluorene[4]	0-1 ft	273	37,000	0.00738	Yes	Yes	No
Landfill	Naphthalene[4]	0-1 ft	30.6	37,000	0.000827	No	--	No
Landfill	Phenanthrene[4]	0-1 ft	2,820	37,000	0.0762	Yes	Yes	No
Landfill	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	4,431	NA	- -	Yes	No SLV	No
Landfill	Benzo(a)anthracene[5]	0-1 ft	3,790	1,900	1.99	Yes	Yes	**Yes**
Landfill	Benzo(a)pyrene[5]	0-1 ft	4,890	1,900	2.57	Yes	Yes	**Yes**
Landfill	Benzo(b)fluoranthene[5]	0-1 ft	5,800	1,900	3.05	Yes	Yes	**Yes**
Landfill	Benzo(g,h,i)perylene[5]	0-1 ft	2,400	1,900	1.26	Yes	Yes	**Yes**
Landfill	Benzo(k)fluoranthene[5]	0-1 ft	2,070	1,900	1.09	Yes	Yes	**Yes**
Landfill	Chrysene[5]	0-1 ft	4,530	1,900	2.38	Yes	Yes	**Yes**
Landfill	Dibenz(a,h)anthracene[5]	0-1 ft	725	1,900	0.382	Yes	Yes	**Yes**
Landfill	Fluoranthene	0-1 ft	8,520	37,000	0.230	Yes	Yes	**Yes**
Landfill	Indeno(1,2,3-cd)pyrene[5]	0-1 ft	3,230	1,900	1.70	Yes	Yes	**Yes**
Landfill	Pyrene	0-1 ft	7,050	1,900	3.71	Yes	Yes	**Yes**
Landfill	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	42,516	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Acenaphthene[4]	0-1 ft	68.0	37,000	0.00184	Yes	Yes	No
Sandblast Area	Anthracene[4]	0-1 ft	150	37,000	0.00405	Yes	Yes	No

Table O.3-6
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Fish Shellfish
Bradford Island - Upland Operable Unit
(3 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Freshwater Fish Exposed to Erodible Soil (2)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
Sandblast Area	Phenanthrene[4]	0-1 ft	940	37,000	0.0254	Yes	Yes	No
Sandblast Area	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	1,356	NA	- -	Yes	No SLV	No
Sandblast Area	Benzo(a)anthracene[5]	0-1 ft	1,200	1,900	0.632	Yes	Yes	**Yes**
Sandblast Area	Benzo(a)pyrene[5]	0-1 ft	1,000	1,900	0.526	Yes	Yes	**Yes**
Sandblast Area	Benzo(b)fluoranthene[5]	0-1 ft	1,600	1,900	0.842	Yes	Yes	**Yes**
Sandblast Area	Benzo(g,h,i)perylene[5]	0-1 ft	590	1,900	0.311	Yes	Yes	**Yes**
Sandblast Area	Benzo(k)fluoranthene[5]	0-1 ft	570	1,900	0.300	Yes	Yes	**Yes**
Sandblast Area	Chrysene[5]	0-1 ft	1,500	1,900	0.789	Yes	Yes	**Yes**
Sandblast Area	Dibenz(a,h)anthracene[5]	0-1 ft	220	1,900	0.116	Yes	Yes	**Yes**
Sandblast Area	Fluoranthene	0-1 ft	2,100	37,000	0.0568	Yes	Yes	No
Sandblast Area	Indeno(1,2,3-cd)pyrene[5]	0-1 ft	690	1,900	0.363	Yes	Yes	**Yes**
Sandblast Area	Pyrene	0-1 ft	1,900	1,900	1.00	Yes	Yes	**Yes**
Sandblast Area	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	11,370	NA	- -	Yes	No SLV	**Yes-Bio**
TPH (mg/kg)								
Sandblast Area	Diesel Range Organics	0-1 ft	69.0	NA	- -	NA	- -	Yes - No SLV
Sandblast Area	Gasoline Range Organics	0-1 ft	2.56	NA	- -	NA	- -	Yes - No SLV
Sandblast Area	Residual Range Organics	0-1 ft	1,000	NA	- -	NA	- -	Yes - No SLV
Bulb Slope	Diesel Range Organics	0-1 ft	102	NA	- -	NA	- -	Yes - No SLV
Bulb Slope	Residual Range Organics	0-1 ft	232	NA	- -	NA	- -	Yes - No SLV
					Landfill Sum R_{Bac}[6] =	101		
					Sandblast Area Sum R_{Bac}[6] =	66.2		
					Bulb Slope Sum R_{Bac}[6] =	29.3		

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

Table O.3-6
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Fish Shellfish
Bradford Island - Upland Operable Unit
(4 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Freshwater Fish Exposed to Erodible Soil (2)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)

The Landfill AOPC potentially erodible soil subset is comprised of the following samples: BIL01USE through BIL09USE, BIL13SSI, and L-01 through L-04.

Table O.3-6
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Fish Shellfish
Bradford Island - Upland Operable Unit
(5 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Freshwater Fish Exposed to Erodible Soil (2)	Toxicity Ratio for Fish & Shellfish (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)

The Sandblast Area AOPC potentially erodible soil subset is comprised of the following samples: SB-EUA, SB-EUB, SB-EUA-02, SB-EUA-04, SB-EUA-06, SB-EUA-08, SB-EUB-02, SB-EUB-03, SB-EUB-12, SB-EUB-15, and SB-04.
The entire Bulb Slope AOPC is potentially erodible.
(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.
(2) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative freshwater fish SLVs from (see Appendix J-5d):
In the absence of a site-specific reference UPL for selenium, the freshwater inorganic background concentration suggested by DEQ was used (DEQ 2007).
Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. April 3.

Bioaccumulative COIs in a Given Medium
(3) Any individual COI in any given medium with RBac > 0.1 and Sum RBac > 1, where RBac = Cij/SLVij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .
R_{Bac} = bioaccumulation index for an individual COI
Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The SLV for Fluoranthene was used as a surrogate for the individual LPAHs without SLVs. Fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH; however, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH SLVs.
(5) The SLV for pyrene was used as a surrogate for the individual HPAHs without SLVs.
(6) The Sum R_{Bac} is the sum of the R_{Bac} for Total PCBs as Aroclors and the individual metals, butyltins, PAHs, and pesticides (except Total DDTs was used instead of the individual DDT isomers).

Table O.3-7
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Birds (Individual)
Bradford Island - Upland Operable Unit
(1 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Individual Birds Exposed to Erodible Soil (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)								
Landfill	Arsenic	0-1 ft	4.95	5.86	0.845	Yes	Yes	**Yes**
Landfill	Cadmium	0-1 ft	1.04	0.674	1.54	Yes	Yes	**Yes**
Landfill	Lead	0-1 ft	324	14.5	22.3	Yes	Yes	**Yes**
Landfill	Manganese	0-1 ft	447	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Mercury	0-1 ft	0.214	0.214	1.00	Yes	Yes	**Yes**
Landfill	Selenium	0-1 ft	0.490	2.00	0.245	NA	- -	**Yes**
Landfill	Thallium	0-1 ft	0.378	0.354	1.07	Yes	No	**Yes**
Landfill	Zinc	0-1 ft	184	106	1.74	Yes	No	**Yes**
Sandblast Area	Cadmium	0-1 ft	1.06	0.674	1.57	Yes	Yes	**Yes**
Sandblast Area	Lead	0-1 ft	319	14.5	22.0	Yes	Yes	**Yes**
Sandblast Area	Manganese	0-1 ft	479	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Selenium	0-1 ft	0.650	2.00	0.325	NA	- -	**Yes**
Sandblast Area	Zinc	0-1 ft	203	106	1.92	Yes	No	**Yes**
Bulb Slope	Lead	0-1 ft	307	14.5	21.2	Yes	Yes	**Yes**
Bulb Slope	Mercury	0-1 ft	0.720	0.214	3.36	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)								
Sandblast Area	Tributyltin	0-1 ft	12.8	1,600	0.00800	Yes	Yes	No
PESTICIDES (ug/kg)								
Landfill	4,4'-DDT	0-1 ft	18.0	0.095	189	Yes	Yes	**Yes**
Landfill	Total DDTs	0-1 ft	19.2	0.095	202	Yes	Yes	**Yes**
Landfill	Dieldrin	0-1 ft	2.10	0.370	5.68	Yes	Yes	**Yes**
Sandblast Area	4,4'-DDE	0-1 ft	0.440	0.095	4.63	Yes	Yes	**Yes**
Sandblast Area	4,4'-DDT	0-1 ft	10.0	0.095	105	Yes	Yes	**Yes**
Sandblast Area	Total DDTs	0-1 ft	10.4	0.095	109	Yes	Yes	**Yes**
Sandblast Area	BHC (delta)	0-1 ft	0.0780	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Endosulfan II	0-1 ft	0.240	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Endosulfan Sulfate	0-1 ft	0.770	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Heptachlor	0-1 ft	0.380	NA	- -	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)								
Landfill	Aroclor 1254	0-1 ft	28.0	1.80	15.6	Yes	Yes	**Yes**
Landfill	Aroclor 1260	0-1 ft	55.4	1.80	30.8	Yes	Yes	**Yes**
Landfill	Total PCBs (Aroclors)	0-1 ft	88.2	1.80	49.0	Yes	Yes	**Yes**
Sandblast Area	Aroclor 1260	0-1 ft	67.0	1.80	37.2	Yes	Yes	**Yes**
Sandblast Area	Total PCBs (Aroclors)	0-1 ft	69.1	1.80	38.4	Yes	Yes	**Yes**
Bulb Slope	Aroclor 1260	0-1 ft	106	1.80	58.9	Yes	Yes	**Yes**

Table O.3-7
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Birds (Individual)
Bradford Island - Upland Operable Unit
(2 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Individual Birds Exposed to Erodible Soil (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
Bulb Slope	Total PCBs (Aroclors)	0-1 ft	104	1.80	57.7	Yes	Yes	**Yes**
VOCs (ug/kg)								
Sandblast Area	1,2,4-Trimethylbenzene	0-1 ft	0.243	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	4-Isopropyltoluene	0-1 ft	1.46	NA	- -	Yes	No SLV	**Yes-Bio**
SVOCs (ug/kg)								
Landfill	Bis(2-ethylhexyl) Phthalate	0-1 ft	229	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Carbazole	0-1 ft	81.5	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Dibenzofuran	0-1 ft	32.9	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Di-n-butyl Phthalate	0-1 ft	563	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Bis(2-ethylhexyl) Phthalate	0-1 ft	260,000	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Carbazole	0-1 ft	91.0	NA	- -	Yes	No SLV	**Yes-Bio**
PAHs (ug/kg)								
Landfill	2-Methylnaphthalene	0-1 ft	11.0	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Acenaphthene	0-1 ft	592	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Acenaphthylene	0-1 ft	18.5	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Anthracene	0-1 ft	722	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Fluorene	0-1 ft	273	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Naphthalene	0-1 ft	30.6	NA	- -	No	--	Yes - No SLV
Landfill	Phenanthrene	0-1 ft	2,820	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	4,431	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Benzo(a)anthracene	0-1 ft	3,790	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Benzo(a)pyrene	0-1 ft	4,890	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Benzo(b)fluoranthene	0-1 ft	5,800	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Benzo(g,h,i)perylene	0-1 ft	2,400	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Benzo(k)fluoranthene	0-1 ft	2,070	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Chrysene	0-1 ft	4,530	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Dibenz(a,h)anthracene	0-1 ft	725	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Fluoranthene	0-1 ft	8,520	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Indeno(1,2,3-cd)pyrene	0-1 ft	3,230	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Pyrene	0-1 ft	7,050	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	42,516	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Acenaphthene	0-1 ft	68.0	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Anthracene	0-1 ft	150	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Phenanthrene	0-1 ft	940	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	1,356	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Benzo(a)anthracene	0-1 ft	1,200	NA	- -	Yes	No SLV	**Yes-Bio**

Table O.3-7
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Birds (Individual)
Bradford Island - Upland Operable Unit
(3 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Individual Birds Exposed to Erodible Soil (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
Sandblast Area	Benzo(a)pyrene	0-1 ft	1,000	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Benzo(b)fluoranthene	0-1 ft	1,600	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Benzo(g,h,i)perylene	0-1 ft	590	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Benzo(k)fluoranthene	0-1 ft	570	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Chrysene	0-1 ft	1,500	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Dibenz(a,h)anthracene	0-1 ft	220	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Fluoranthene	0-1 ft	2,100	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Indeno(1,2,3-cd)pyrene	0-1 ft	690	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Pyrene	0-1 ft	1,900	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	11,370	NA	- -	Yes	No SLV	**Yes-Bio**
TPH (mg/kg)								
Sandblast Area	Diesel Range Organics	0-1 ft	69.0	NA	- -	NA	- -	Yes - No SLV
Sandblast Area	Gasoline Range Organics	0-1 ft	2.56	NA	- -	NA	- -	Yes - No SLV
Sandblast Area	Residual Range Organics	0-1 ft	1,000	NA	- -	NA	- -	Yes - No SLV
Bulb Slope	Diesel Range Organics	0-1 ft	102	NA	- -	NA	- -	Yes - No SLV
Bulb Slope	Residual Range Organics	0-1 ft	232	NA	- -	NA	- -	Yes - No SLV
					Landfill Sum R_{Bac}^4 =	285		
					Sandblast Area Sum R_{Bac}^4 =	174		
					Bulb Slope Sum R_{Bac}^4 =	82.2		

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

The Landfill AOPC potentially erodible soil subset is comprised of the following samples: BIL01USE through BIL09USE, BIL13SSI, and L-01 through L-04.

The Sandblast Area AOPC potentially erodible soil subset is comprised of the following samples: SB-EUA, SB-EUB, SB-EUA-02, SB-EUA-04, SB-EUA-06, SB-EUA-08, SB-EUB-02, SB-EUB-03, SB-EUB-12, SB-EUB-15, and SB-04.
The entire Bulb Slope AOPC is potentially erodible.
(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.

Table O.3-7
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Birds (Individual)
Bradford Island - Upland Operable Unit
(4 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Individual Birds Exposed to Erodible Soil (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)

(2) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative bird (individual) SLVs from (see Appendix J-5c):

In the absence of a site-specific reference UPL for selenium, the freshwater inorganic background concentration suggested by DEQ was used (DEQ 2007).

Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. April 3.

Bioaccumulative COIs in a Given Medium

(3) Any individual COI in any given medium with RBac > 0.1 and Sum RBac > 1, where RBac = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The Sum R_{Bac} is the sum of the R_{Bac} for Total PCBs as Aroclors and the individual metals, butyltins, and pesticides (except Total DDTs was used instead of the individual DDT isomers).

Table O.3-8
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Birds (Population)
Bradford Island - Upland Operable Unit
(1 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Bird Populations Exposed to Erodible Soil (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)								
Landfill	Arsenic	0-1 ft	4.95	5.86	0.845	Yes	Yes	**Yes**
Landfill	Cadmium	0-1 ft	1.04	0.674	1.54	Yes	Yes	**Yes**
Landfill	Lead	0-1 ft	324	14.5	22.3	Yes	Yes	**Yes**
Landfill	Manganese	0-1 ft	447	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Mercury	0-1 ft	0.214	0.214	1.00	Yes	Yes	**Yes**
Landfill	Selenium	0-1 ft	0.490	2.00	0.245	NA	- -	**Yes**
Landfill	Thallium	0-1 ft	0.378	0.354	1.07	Yes	No	**Yes**
Landfill	Zinc	0-1 ft	184	106	1.74	Yes	No	**Yes**
Sandblast Area	Cadmium	0-1 ft	1.06	0.674	1.57	Yes	Yes	**Yes**
Sandblast Area	Lead	0-1 ft	319	14.5	22.0	Yes	Yes	**Yes**
Sandblast Area	Manganese	0-1 ft	479	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Selenium	0-1 ft	0.650	2.00	0.325	NA	- -	**Yes**
Sandblast Area	Zinc	0-1 ft	203	106	1.92	Yes	No	**Yes**
Bulb Slope	Lead	0-1 ft	307	14.5	21.2	Yes	Yes	**Yes**
Bulb Slope	Mercury	0-1 ft	0.720	0.214	3.36	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)								
Sandblast Area	Tributyltin	0-1 ft	12.8	4,100	0.00312	Yes	Yes	No
PESTICIDES (ug/kg)								
Landfill	4,4'-DDT	0-1 ft	18.0	0.340	52.9	Yes	Yes	**Yes**
Landfill	Total DDTs	0-1 ft	19.2	0.340	56.3	Yes	Yes	**Yes**
Landfill	Dieldrin	0-1 ft	2.10	0.370	5.68	Yes	Yes	**Yes**
Sandblast Area	4,4'-DDE	0-1 ft	0.440	0.340	1.29	Yes	Yes	**Yes**
Sandblast Area	4,4'-DDT	0-1 ft	10.0	0.340	29.4	Yes	Yes	**Yes**
Sandblast Area	Total DDTs	0-1 ft	10.4	0.340	30.6	Yes	Yes	**Yes**
Sandblast Area	BHC (delta)	0-1 ft	0.0780	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Endosulfan II	0-1 ft	0.240	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Endosulfan Sulfate	0-1 ft	0.770	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Heptachlor	0-1 ft	0.380	NA	- -	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)								
Landfill	Aroclor 1254	0-1 ft	28.0	91.0	0.308	Yes	Yes	**Yes**
Landfill	Aroclor 1260	0-1 ft	55.4	91.0	0.609	Yes	Yes	**Yes**
Landfill	Total PCBs (Aroclors)	0-1 ft	88.2	91.0	0.970	Yes	Yes	**Yes**
Sandblast Area	Aroclor 1260	0-1 ft	67.0	91.0	0.736	Yes	Yes	**Yes**
Sandblast Area	Total PCBs (Aroclors)	0-1 ft	69.1	91.0	0.759	Yes	Yes	**Yes**
Bulb Slope	Aroclor 1260	0-1 ft	106	91.0	1.16	Yes	Yes	**Yes**

Table O.3-8
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Birds (Population)
Bradford Island - Upland Operable Unit
(2 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Bird Populations Exposed to Erodible Soil (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
Bulb Slope	Total PCBs (Aroclors)	0-1 ft	104	91.0	1.14	Yes	Yes	**Yes**
VOCs (ug/kg)								
Sandblast Area	1,2,4-Trimethylbenzene	0-1 ft	0.243	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	4-Isopropyltoluene	0-1 ft	1.46	NA	- -	Yes	No SLV	**Yes-Bio**
SVOCs (ug/kg)								
Landfill	Bis(2-ethylhexyl) Phthalate	0-1 ft	229	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Carbazole	0-1 ft	81.5	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Dibenzofuran	0-1 ft	32.9	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Di-n-butyl Phthalate	0-1 ft	563	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Bis(2-ethylhexyl) Phthalate	0-1 ft	260,000	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Carbazole	0-1 ft	91.0	NA	- -	Yes	No SLV	**Yes-Bio**
PAHs (ug/kg)								
Landfill	2-Methylnaphthalene	0-1 ft	11.0	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Acenaphthene	0-1 ft	592	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Acenaphthylene	0-1 ft	18.5	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Anthracene	0-1 ft	722	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Fluorene	0-1 ft	273	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Naphthalene	0-1 ft	30.6	NA	- -	No	--	Yes - No SLV
Landfill	Phenanthrene	0-1 ft	2,820	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	4,431	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Benzo(a)anthracene	0-1 ft	3,790	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Benzo(a)pyrene	0-1 ft	4,890	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Benzo(b)fluoranthene	0-1 ft	5,800	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Benzo(g,h,i)perylene	0-1 ft	2,400	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Benzo(k)fluoranthene	0-1 ft	2,070	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Chrysene	0-1 ft	4,530	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Dibenz(a,h)anthracene	0-1 ft	725	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Fluoranthene	0-1 ft	8,520	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Indeno(1,2,3-cd)pyrene	0-1 ft	3,230	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Pyrene	0-1 ft	7,050	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	42,516	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Acenaphthene	0-1 ft	68.0	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Anthracene	0-1 ft	150	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Phenanthrene	0-1 ft	940	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	1,356	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Benzo(a)anthracene	0-1 ft	1,200	NA	- -	Yes	No SLV	**Yes-Bio**

Table O.3-8
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Birds (Population)
Bradford Island - Upland Operable Unit
(3 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Bird Populations Exposed to Erodible Soil (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
Sandblast Area	Benzo(a)pyrene	0-1 ft	1,000	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Benzo(b)fluoranthene	0-1 ft	1,600	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Benzo(g,h,i)perylene	0-1 ft	590	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Benzo(k)fluoranthene	0-1 ft	570	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Chrysene	0-1 ft	1,500	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Dibenz(a,h)anthracene	0-1 ft	220	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Fluoranthene	0-1 ft	2,100	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Indeno(1,2,3-cd)pyrene	0-1 ft	690	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Pyrene	0-1 ft	1,900	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	11,370	NA	- -	Yes	No SLV	**Yes-Bio**
TPH (mg/kg)								
Sandblast Area	Diesel Range Organics	0-1 ft	69.0	NA	- -	NA	- -	Yes - No SLV
Sandblast Area	Gasoline Range Organics	0-1 ft	2.56	NA	- -	NA	- -	Yes - No SLV
Sandblast Area	Residual Range Organics	0-1 ft	1,000	NA	- -	NA	- -	Yes - No SLV
Bulb Slope	Diesel Range Organics	0-1 ft	102	NA	- -	NA	- -	Yes - No SLV
Bulb Slope	Residual Range Organics	0-1 ft	232	NA	- -	NA	- -	Yes - No SLV
					Landfill Sum R_{Bac}^4 =	91.7		
					Sandblast Area Sum R_{Bac}^4 =	57.2		
					Bulb Slope Sum R_{Bac}^4 =	25.7		

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

The Landfill AOPC potentially erodible soil subset is comprised of the following samples: BIL01USE through BIL09USE, BIL13SSI, and L-01 through L-04.

The Sandblast Area AOPC potentially erodible soil subset is comprised of the following samples: SB-EUA, SB-EUB, SB-EUA-02, SB-EUA-04, SB-EUA-06, SB-EUA-08, SB-EUB-02, SB-EUB-03, SB-EUB-12, SB-EUB-15, and SB-04.
The entire Bulb Slope AOPC is potentially erodible.
(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.

Table O.3-8
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Birds (Population)
Bradford Island - Upland Operable Unit
(4 of 4)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Bird Populations Exposed to Erodible Soil (2)	Toxicity Ratio for Birds (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)

(2) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative bird (population) SLVs from (see Appendix J-5c):

In the absence of a site-specific reference UPL for selenium, the freshwater inorganic background concentration suggested by DEQ was used (DEQ 2007).

Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. April 3.

Bioaccumulative COIs in a Given Medium

(3) Any individual COI in any given medium with RBac > 0.1 and Sum RBac > 1, where RBac = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The Sum R_{Bac} is the sum of the R_{Bac} for Total PCBs as Aroclors and the individual metals, butyltins, and pesticides (except Total DDTs was used instead of the individual DDT isomers).

Table O.3-9
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Mammals (Individual)
Bradford Island - Upland Operable Unit
(1 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Individual Mammals Exposed to Erodible Soil (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)								
Landfill	Arsenic	0-1 ft	4.95	5.86	0.845	Yes	Yes	**Yes**
Landfill	Cadmium	0-1 ft	1.04	0.674	1.54	Yes	Yes	**Yes**
Landfill	Lead	0-1 ft	324	14.5	22.3	Yes	Yes	**Yes**
Landfill	Manganese	0-1 ft	447	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Mercury	0-1 ft	0.214	0.214	1.00	Yes	Yes	**Yes**
Landfill	Selenium	0-1 ft	0.490	2.00	0.245	NA	- -	**Yes**
Landfill	Thallium	0-1 ft	0.378	0.354	1.07	Yes	No	**Yes**
Landfill	Zinc	0-1 ft	184	106	1.74	Yes	No	**Yes**
Sandblast Area	Cadmium	0-1 ft	1.06	0.674	1.57	Yes	Yes	**Yes**
Sandblast Area	Lead	0-1 ft	319	14.5	22.0	Yes	Yes	**Yes**
Sandblast Area	Manganese	0-1 ft	479	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Selenium	0-1 ft	0.650	2.00	0.325	NA	- -	**Yes**
Sandblast Area	Zinc	0-1 ft	203	106	1.92	Yes	No	**Yes**
Bulb Slope	Lead	0-1 ft	307	14.5	21.2	Yes	Yes	**Yes**
Bulb Slope	Mercury	0-1 ft	0.720	0.214	3.36	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)								
Sandblast Area	Tributyltin	0-1 ft	12.8	730	0.0175	Yes	Yes	No
PESTICIDES (ug/kg)								
Landfill	4,4'-DDT	0-1 ft	18.0	4.90	3.67	Yes	Yes	**Yes**
Landfill	Total DDTs	0-1 ft	19.2	4.90	3.91	Yes	Yes	**Yes**
Landfill	Dieldrin	0-1 ft	2.10	1.20	1.75	Yes	Yes	**Yes**
Sandblast Area	4,4'-DDE	0-1 ft	0.440	4.90	0.0898	Yes	Yes	No
Sandblast Area	4,4'-DDT	0-1 ft	10.0	4.90	2.04	Yes	Yes	**Yes**
Sandblast Area	Total DDTs	0-1 ft	10.4	4.90	2.12	Yes	Yes	**Yes**
Sandblast Area	BHC (delta)	0-1 ft	0.0780	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Endosulfan II	0-1 ft	0.240	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Endosulfan Sulfate	0-1 ft	0.770	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Heptachlor	0-1 ft	0.380	NA	- -	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)								
Landfill	Aroclor 1254	0-1 ft	28.0	44.0	0.636	Yes	Yes	**Yes**
Landfill	Aroclor 1260	0-1 ft	55.4	44.0	1.26	Yes	Yes	**Yes**
Landfill	Total PCBs (Aroclors)	0-1 ft	88.2	44.0	2.01	Yes	Yes	**Yes**
Sandblast Area	Aroclor 1260	0-1 ft	67.0	44.0	1.52	Yes	Yes	**Yes**
Sandblast Area	Total PCBs (Aroclors)	0-1 ft	69.1	44.0	1.57	Yes	Yes	**Yes**
Bulb Slope	Aroclor 1260	0-1 ft	106	44.0	2.41	Yes	Yes	**Yes**

Table O.3-9
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Mammals (Individual)
Bradford Island - Upland Operable Unit
(2 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Individual Mammals Exposed to Erodible Soil (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
Bulb Slope	Total PCBs (Aroclors)	0-1 ft	104	44.0	2.36	Yes	Yes	**Yes**
VOCs (ug/kg)								
Sandblast Area	1,2,4-Trimethylbenzene	0-1 ft	0.243	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	4-Isopropyltoluene	0-1 ft	1.46	NA	- -	Yes	No SLV	**Yes-Bio**
SVOCs (ug/kg)								
Landfill	Bis(2-ethylhexyl) Phthalate	0-1 ft	229	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Carbazole	0-1 ft	81.5	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Dibenzofuran	0-1 ft	32.9	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Di-n-butyl Phthalate	0-1 ft	563	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Bis(2-ethylhexyl) Phthalate	0-1 ft	260,000	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Carbazole	0-1 ft	91.0	NA	- -	Yes	No SLV	**Yes-Bio**
PAHs (ug/kg)								
Landfill	2-Methylnaphthalene[4]	0-1 ft	11.0	360,000	0.0000306	Yes	Yes	No
Landfill	Acenaphthene[4]	0-1 ft	592	360,000	0.00164	Yes	Yes	No
Landfill	Acenaphthylene[4]	0-1 ft	18.5	360,000	0.0000514	Yes	Yes	No
Landfill	Anthracene[4]	0-1 ft	722	360,000	0.00201	Yes	Yes	No
Landfill	Fluorene[4]	0-1 ft	273	360,000	0.000758	Yes	Yes	No
Landfill	Naphthalene[4]	0-1 ft	30.6	360,000	0.0000850	No	--	No
Landfill	Phenanthrene[4]	0-1 ft	2,820	360,000	0.00783	Yes	Yes	No
Landfill	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	4,431	NA	- -	Yes	No SLV	No
Landfill	Benzo(a)anthracene[5]	0-1 ft	3,790	18,000,000	0.000211	Yes	Yes	No
Landfill	Benzo(a)pyrene[5]	0-1 ft	4,890	18,000,000	0.000272	Yes	Yes	No
Landfill	Benzo(b)fluoranthene[5]	0-1 ft	5,800	18,000,000	0.000322	Yes	Yes	No
Landfill	Benzo(g,h,i)perylene[5]	0-1 ft	2,400	18,000,000	0.000133	Yes	Yes	No
Landfill	Benzo(k)fluoranthene[5]	0-1 ft	2,070	18,000,000	0.000115	Yes	Yes	No
Landfill	Chrysene[5]	0-1 ft	4,530	18,000,000	0.000252	Yes	Yes	No
Landfill	Dibenz(a,h)anthracene[5]	0-1 ft	725	18,000,000	0.0000403	Yes	Yes	No
Landfill	Fluoranthene	0-1 ft	8,520	360,000	0.0237	Yes	Yes	No
Landfill	Indeno(1,2,3-cd)pyrene[5]	0-1 ft	3,230	18,000,000	0.000179	Yes	Yes	No
Landfill	Pyrene	0-1 ft	7,050	18,000,000	0.000392	Yes	Yes	No
Landfill	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	42,516	NA	- -	Yes	No SLV	No
Sandblast Area	Acenaphthene[4]	0-1 ft	68.0	360,000	0.000189	Yes	Yes	No
Sandblast Area	Anthracene[4]	0-1 ft	150	360,000	0.000417	Yes	Yes	No

Table O.3-9
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Mammals (Individual)
Bradford Island - Upland Operable Unit
(3 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Individual Mammals Exposed to Erodible Soil (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
Sandblast Area	Phenanthrene[4]	0-1 ft	940	360,000	0.00261	Yes	Yes	No
Sandblast Area	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	1,356	NA	- -	Yes	No SLV	No
Sandblast Area	Benzo(a)anthracene[5]	0-1 ft	1,200	18,000,000	0.0000667	Yes	Yes	No
Sandblast Area	Benzo(a)pyrene[5]	0-1 ft	1,000	18,000,000	0.0000556	Yes	Yes	No
Sandblast Area	Benzo(b)fluoranthene[5]	0-1 ft	1,600	18,000,000	0.0000889	Yes	Yes	No
Sandblast Area	Benzo(g,h,i)perylene[5]	0-1 ft	590	18,000,000	0.0000328	Yes	Yes	No
Sandblast Area	Benzo(k)fluoranthene[5]	0-1 ft	570	18,000,000	0.0000317	Yes	Yes	No
Sandblast Area	Chrysene[5]	0-1 ft	1,500	18,000,000	0.0000833	Yes	Yes	No
Sandblast Area	Dibenz(a,h)anthracene[5]	0-1 ft	220	18,000,000	0.0000122	Yes	Yes	No
Sandblast Area	Fluoranthene	0-1 ft	2,100	360,000	0.00583	Yes	Yes	No
Sandblast Area	Indeno(1,2,3-cd)pyrene[5]	0-1 ft	690	18,000,000	0.0000383	Yes	Yes	No
Sandblast Area	Pyrene	0-1 ft	1,900	18,000,000	0.000106	Yes	Yes	No
Sandblast Area	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	11,370	NA	- -	Yes	No SLV	No
TPH (mg/kg)								
Sandblast Area	Diesel Range Organics	0-1 ft	69.0	NA	- -	NA	- -	Yes - No SLV
Sandblast Area	Gasoline Range Organics	0-1 ft	2.56	NA	- -	NA	- -	Yes - No SLV
Sandblast Area	Residual Range Organics	0-1 ft	1,000	NA	- -	NA	- -	Yes - No SLV
Bulb Slope	Diesel Range Organics	0-1 ft	102	NA	- -	NA	- -	Yes - No SLV
Bulb Slope	Residual Range Organics	0-1 ft	232	NA	- -	NA	- -	Yes - No SLV
					Landfill Sum R_{Bac}[6] =	36.5		
					Sandblast Area Sum R_{Bac}[6] =	29.5		
					Bulb Slope Sum R_{Bac}[6] =	26.9		

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

Table O.3-9
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Mammals (Individual)
Bradford Island - Upland Operable Unit
(4 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Individual Mammals Exposed to Erodible Soil (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)

The Landfill AOPC potentially erodible soil subset is comprised of the following samples: BIL01USE through BIL09USE, BIL13SSI, and L-01 through L-04.

Table O.3-9
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Individual COIs for Mammals (Individual)
Bradford Island - Upland Operable Unit
(5 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Individual Mammals Exposed to Erodible Soil (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)

The Sandblast Area AOPC potentially erodible soil subset is comprised of the following samples: SB-EUA, SB-EUB, SB-EUA-02, SB-EUA-04, SB-EUA-06, SB-EUA-08, SB-EUB-02, SB-EUB-03, SB-EUB-12, SB-EUB-15, and SB-04. The entire Bulb Slope AOPC is potentially erodible.

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.

(2) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative mammalian (individual) SLVs from (see Appendix J-5c):

In the absence of a site-specific reference UPL for selenium, the freshwater inorganic background concentration suggested by DEQ was used (DEQ 2007).

Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. April 3.

Bioaccumulative COIs in a Given Medium

(3) Any individual COI in any given medium with RBac > 0.1 and Sum RBac > 1, where RBac = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j*.

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The SLV for Fluoranthene was used as a surrogate for the individual LPAHs without SLVs. Fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH; however, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH SLVs.

(5) The SLV for pyrene was used as a surrogate for the individual HPAHs without SLVs.

(6) The Sum R_{Bac} is the sum of the R_{Bac} for Total PCBs as Aroclors and the individual metals, butyltins, and pesticides (except Total DDTs was used instead of the individual DDT isomers).

Table O.3-10
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Mammals (Population)
Bradford Island - Upland Operable Unit
(1 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Mammal Populations Exposed to Erodible Soil (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
INORGANICS (mg/kg)								
Landfill	Arsenic	0-1 ft	4.95	5.86	0.845	Yes	Yes	**Yes**
Landfill	Cadmium	0-1 ft	1.04	0.674	1.54	Yes	Yes	**Yes**
Landfill	Lead	0-1 ft	324	14.5	22.3	Yes	Yes	**Yes**
Landfill	Manganese	0-1 ft	447	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Mercury	0-1 ft	0.214	0.214	1.00	Yes	Yes	**Yes**
Landfill	Selenium	0-1 ft	0.490	2.00	0.245	NA	- -	**Yes**
Landfill	Thallium	0-1 ft	0.378	0.354	1.07	Yes	No	**Yes**
Landfill	Zinc	0-1 ft	184	106	1.74	Yes	No	**Yes**
Sandblast Area	Cadmium	0-1 ft	1.06	0.674	1.57	Yes	Yes	**Yes**
Sandblast Area	Lead	0-1 ft	319	14.5	22.0	Yes	Yes	**Yes**
Sandblast Area	Manganese	0-1 ft	479	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Selenium	0-1 ft	0.650	2.00	0.325	NA	- -	**Yes**
Sandblast Area	Zinc	0-1 ft	203	106	1.92	Yes	No	**Yes**
Bulb Slope	Lead	0-1 ft	307	14.5	21.2	Yes	Yes	**Yes**
Bulb Slope	Mercury	0-1 ft	0.720	0.214	3.36	Yes	Yes	**Yes**
BUTYLTINS (ug/kg)								
Sandblast Area	Tributyltin	0-1 ft	12.8	1,100	0.0116	Yes	Yes	No
PESTICIDES (ug/kg)								
Landfill	4,4'-DDT	0-1 ft	18.0	24.0	0.750	Yes	Yes	**Yes**
Landfill	Total DDTs	0-1 ft	19.2	24.0	0.798	Yes	Yes	**Yes**
Landfill	Dieldrin	0-1 ft	2.10	6.10	0.344	Yes	Yes	**Yes**
Sandblast Area	4,4'-DDE	0-1 ft	0.440	24.0	0.0183	Yes	Yes	No
Sandblast Area	4,4'-DDT	0-1 ft	10.0	24.0	0.417	Yes	Yes	**Yes**
Sandblast Area	Total DDTs	0-1 ft	10.4	24.0	0.433	Yes	Yes	**Yes**
Sandblast Area	BHC (delta)	0-1 ft	0.0780	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Endosulfan II	0-1 ft	0.240	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Endosulfan Sulfate	0-1 ft	0.770	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Heptachlor	0-1 ft	0.380	NA	- -	Yes	No SLV	**Yes-Bio**
PCBs (ug/kg)								
Landfill	Aroclor 1254	0-1 ft	28.0	84.0	0.333	Yes	Yes	**Yes**
Landfill	Aroclor 1260	0-1 ft	55.4	84.0	0.660	Yes	Yes	**Yes**
Landfill	Total PCBs (Aroclors)	0-1 ft	88.2	84.0	1.05	Yes	Yes	**Yes**
Sandblast Area	Aroclor 1260	0-1 ft	67.0	84.0	0.798	Yes	Yes	**Yes**
Sandblast Area	Total PCBs (Aroclors)	0-1 ft	69.1	84.0	0.823	Yes	Yes	**Yes**
Bulb Slope	Aroclor 1260	0-1 ft	106	84.0	1.26	Yes	Yes	**Yes**

Table O.3-10
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Mammals (Population)
Bradford Island - Upland Operable Unit
(2 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Mammal Populations Exposed to Erodible Soil (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
Bulb Slope	Total PCBs (Aroclors)	0-1 ft	104	84.0	1.24	Yes	Yes	**Yes**
VOCs (ug/kg)								
Sandblast Area	1,2,4-Trimethylbenzene	0-1 ft	0.243	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	4-Isopropyltoluene	0-1 ft	1.46	NA	- -	Yes	No SLV	**Yes-Bio**
SVOCs (ug/kg)								
Landfill	Bis(2-ethylhexyl) Phthalate	0-1 ft	229	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Carbazole	0-1 ft	81.5	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Dibenzofuran	0-1 ft	32.9	NA	- -	Yes	No SLV	**Yes-Bio**
Landfill	Di-n-butyl Phthalate	0-1 ft	563	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Bis(2-ethylhexyl) Phthalate	0-1 ft	260,000	NA	- -	Yes	No SLV	**Yes-Bio**
Sandblast Area	Carbazole	0-1 ft	91.0	NA	- -	Yes	No SLV	**Yes-Bio**
PAHs (ug/kg)								
Landfill	2-Methylnaphthalene[4]	0-1 ft	11.0	1,800,000	0.00000611	Yes	Yes	No
Landfill	Acenaphthene[4]	0-1 ft	592	1,800,000	0.000329	Yes	Yes	No
Landfill	Acenaphthylene[4]	0-1 ft	18.5	1,800,000	0.0000103	Yes	Yes	No
Landfill	Anthracene[4]	0-1 ft	722	1,800,000	0.000401	Yes	Yes	No
Landfill	Fluorene[4]	0-1 ft	273	1,800,000	0.000152	Yes	Yes	No
Landfill	Naphthalene[4]	0-1 ft	30.6	1,800,000	0.0000170	No	--	No
Landfill	Phenanthrene[4]	0-1 ft	2,820	1,800,000	0.00157	Yes	Yes	No
Landfill	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	4,431	NA	- -	Yes	No SLV	No
Landfill	Benzo(a)anthracene[5]	0-1 ft	3,790	90,000,000	0.0000421	Yes	Yes	No
Landfill	Benzo(a)pyrene[5]	0-1 ft	4,890	90,000,000	0.0000543	Yes	Yes	No
Landfill	Benzo(b)fluoranthene[5]	0-1 ft	5,800	90,000,000	0.0000644	Yes	Yes	No
Landfill	Benzo(g,h,i)perylene[5]	0-1 ft	2,400	90,000,000	0.0000267	Yes	Yes	No
Landfill	Benzo(k)fluoranthene[5]	0-1 ft	2,070	90,000,000	0.0000230	Yes	Yes	No
Landfill	Chrysene[5]	0-1 ft	4,530	90,000,000	0.0000503	Yes	Yes	No
Landfill	Dibenz(a,h)anthracene[5]	0-1 ft	725	90,000,000	0.00000806	Yes	Yes	No
Landfill	Fluoranthene	0-1 ft	8,520	1,800,000	0.00473	Yes	Yes	No
Landfill	Indeno(1,2,3-cd)pyrene[5]	0-1 ft	3,230	90,000,000	0.0000359	Yes	Yes	No
Landfill	Pyrene	0-1 ft	7,050	90,000,000	0.0000783	Yes	Yes	No
Landfill	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	42,516	NA	- -	Yes	No SLV	No
Sandblast Area	Acenaphthene[4]	0-1 ft	68.0	1,800,000	0.0000378	Yes	Yes	No
Sandblast Area	Anthracene[4]	0-1 ft	150	1,800,000	0.0000833	Yes	Yes	No

Table O.3-10
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Mammals (Population)
Bradford Island - Upland Operable Unit
(3 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Mammal Populations Exposed to Erodible Soil (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)
Sandblast Area	Phenanthrene[4]	0-1 ft	940	1,800,000	0.000522	Yes	Yes	No
Sandblast Area	Total LPAHs (KM, capped; NDs at MDL)	0-1 ft	1,356	NA	- -	Yes	No SLV	No
Sandblast Area	Benzo(a)anthracene[5]	0-1 ft	1,200	90,000,000	0.0000133	Yes	Yes	No
Sandblast Area	Benzo(a)pyrene[5]	0-1 ft	1,000	90,000,000	0.0000111	Yes	Yes	No
Sandblast Area	Benzo(b)fluoranthene[5]	0-1 ft	1,600	90,000,000	0.0000178	Yes	Yes	No
Sandblast Area	Benzo(g,h,i)perylene[5]	0-1 ft	590	90,000,000	0.00000656	Yes	Yes	No
Sandblast Area	Benzo(k)fluoranthene[5]	0-1 ft	570	90,000,000	0.00000633	Yes	Yes	No
Sandblast Area	Chrysene[5]	0-1 ft	1,500	90,000,000	0.0000167	Yes	Yes	No
Sandblast Area	Dibenz(a,h)anthracene[5]	0-1 ft	220	90,000,000	0.00000244	Yes	Yes	No
Sandblast Area	Fluoranthene	0-1 ft	2,100	1,800,000	0.00117	Yes	Yes	No
Sandblast Area	Indeno(1,2,3-cd)pyrene[5]	0-1 ft	690	90,000,000	0.00000767	Yes	Yes	No
Sandblast Area	Pyrene	0-1 ft	1,900	90,000,000	0.0000211	Yes	Yes	No
Sandblast Area	Total HPAHs (KM, capped; NDs at MDL)	0-1 ft	11,370	NA	- -	Yes	No SLV	No
TPH (mg/kg)								
Sandblast Area	Diesel Range Organics	0-1 ft	69.0	NA	- -	NA	- -	Yes - No SLV
Sandblast Area	Gasoline Range Organics	0-1 ft	2.56	NA	- -	NA	- -	Yes - No SLV
Sandblast Area	Residual Range Organics	0-1 ft	1,000	NA	- -	NA	- -	Yes - No SLV
Bulb Slope	Diesel Range Organics	0-1 ft	102	NA	- -	NA	- -	Yes - No SLV
Bulb Slope	Residual Range Organics	0-1 ft	232	NA	- -	NA	- -	Yes - No SLV
					Landfill Sum R_{Bac}[6] =	31.0		
					Sandblast Area Sum R_{Bac}[6] =	27.1		
					Bulb Slope Sum R_{Bac}[6] =	25.8		

This table only includes COIs detected > 5% and above the reference area (metals only).
CPEC = chemical of potential ecological concern
COI = chemical of interest
HPAH = high molecular weight polycyclic aromatic hydrocarbons
KM, capped = Kaplan–Meier-based with Efron's bias correction, capped
LPAH = low molecular weight polycyclic aromatic hydrocarbons
MDL = method detection limit
NA = not available
ND = non detect
SLV = screening level value
UCL = upper confidence limit on the mean
Yes-Bio = Identified as potential CPEC because COI is bioaccumulative but SLV is does not account for bioaccumulation or there is no SLV
- - = not applicable

Table O.3-10
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Mammals (Population)
Bradford Island - Upland Operable Unit
(4 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Mammal Populations Exposed to Erodible Soil (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)

The Landfill AOPC potentially erodible soil subset is comprised of the following samples: BIL01USE through BIL09USE, BIL13SSI, and L-01 through L-04.

Table O.3-10
Identification of Bioaccumulative CPECs in Mass Wasting and Erodible Soil at Upland OU - Mammals (Population)
Bradford Island - Upland Operable Unit
(5 of 5)

AOPC	Chemicals of Interest	Depth Category (Soil)	Lower of Maximum and 95% UCL (1)	Sediment SLVs for Mammal Populations Exposed to Erodible Soil (2)	Toxicity Ratio for Mammals (R_{Bac})	Is COI Bioaccum-ulative?	SLV Accounts for Bioaccum-ulation?	COI is Identified as a Bioaccumulative CPEC? (3)

The Sandblast Area AOPC potentially erodible soil subset is comprised of the following samples: SB-EUA, SB-EUB, SB-EUA-02, SB-EUA-04, SB-EUA-06, SB-EUA-08, SB-EUB-02, SB-EUB-03, SB-EUB-12, SB-EUB-15, and SB-04. The entire Bulb Slope AOPC is potentially erodible.

(1) The lower of the maximum detected concentration and the calculated 95% UCL for COIs with at least 8 samples was used.

(2) The greater of the site-specific reference 95% UPL concentration (inorganics only) and the bioaccumulative mammalian (population) SLVs from (see Appendix J-5c):

In the absence of a site-specific reference UPL for selenium, the freshwater inorganic background concentration suggested by DEQ was used (DEQ 2007).

Oregon Department of Environmental Quality (DEQ), 2007. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. Land Quality Division. Final. April 3

Bioaccumulative COIs in a Given Medium

(3) Any individual COI in any given medium with RBac > 0.1 and Sum RBac > 1, where RBac = Cij/SLVij, must be identified as a CPEC.

Where: Cij = concentration of contaminant *i* in medium *j*

SLVij = Level II Screening Level Value from DEQ for contaminant *i* in medium *j* .

R_{Bac} = bioaccumulation index for an individual COI

Sum R_{Bac} = Cumulative Bioaccumulation Index for all COIs

(4) The SLV for Fluoranthene was used as a surrogate for the individual LPAHs without SLVs. Fluoranthene is considered an HPAH in the RI, HHRA, and ERA and used to calculate Total HPAH; however, fluoranthene is more accurately a PAH that borders the two with a molecular weight more similar to HPAHs and but a structure more similar to LPAHs. Therefore, use of fluoranthene as a surrogate for LPAHs is appropriate in the absence of any LPAH SLVs.

(5) The SLV for pyrene was used as a surrogate for the individual HPAHs without SLVs.

(6) The Sum R_{Bac} is the sum of the R_{Bac} for Total PCBs as Aroclors and the individual metals, butyltins, and pesticides (except Total DDTs was used instead of the individual DDT isomers).

Table O.3-11
Summary of Upland OU Bioaccumulative COIs that Lacked Dietary-based SLVs
Bradford Island - Upland Operable Unit
(1 of 1)

Butyltins	Pesticides	VOCs	SVOCs
Tributyltin	BHC (delta)	1,2,4-Trimethylbenzene	Bis(2-ethylhexyl) Phthalate
	BHC (gamma)	4-Isopropyltoluene	Butyl Benzyl Phthalate
	Chlordane (alpha)	Isopropylbenzene	Carbazole
	Chlordane (gamma)	n-Propylbenzene	Dibenzofuran
	Chlordane (technical)		Di-n-butyl Phthalate
	Endosulfan I		Di-n-octyl Phthalate
	Endosulfan II		PAHs (Birds Only)
	Endosulfan sulfate		
	Endrin		
	Endrin aldehyde		
	Endrin ketone		
	Heptachlor		
	Methoxychlor		

Table O.3-12
Ecological Risk-Based Screening for Metals with High MDDs
Bradford Island - River Operable Unit
(1 of 1)

Area of Potential Concern	Chemicals of Interest	Medium	Max Detected Conc in Tissue (mg/kg wet)	Tissue EPC - Lower of Maximum and 95% UCL (1) (mg/kg wet)	Site-Specific Reference UPL	DEQ Bioaccumulation CTLs and ATLs (2) (mg/kg wet)			Toxicity Ratios (R_{Bac}) (3)			Is COI Bioaccumulative? (BCF>300 or Log Kow >3.5)	Should COI be considered further as a CPEC? (3)
						Fish	Birds	Mammals	Fish	Birds	Mammals		
Forebay	Lead	Crayfish	2.66	0.925	1.14	1.2	9.3	34	0.8	0.10	0.027	Yes	No
Forebay	Chromium	Smallmouth Bass	0.860	0.302	7.15	not available	not available	not available	--	--	--	No	Yes - No SLV

ATL = acceptable tissue level protective of birds or mammals
CPEC = chemical of potential ecological concern
COI = chemical of interest
CTL = critical tissue level protective of fish
DEQ = Oregon Department of Environmental Quality
EPC = exposure point concentration
MDD = minimum detectable difference
mg/kg wet = milligrams per kilogram wet weight
T&E = threatened and endangered
UCL = upper confidence limit on the mean
UPL = upper prediction limit

(1) The lower of the maximum detected concentration and the calculated 95% UCL.

Hierarchy of SLV Selection (see Appendix J-5d)
For metals only, the higher of the Reference Area 95% UPL and the hierarchical SLV was selected.
(2) DEQ 2007. Guidance for Evaluation of Bioaccumulative Chemicals of Concern in Sediment. Final. April 3. For birds and mammals, ATLs protective of individuals are shown.

Bioaccumulative COIs in a Given Media
(3) Any individual COI in any given medium with $R_{Bac} > 1$, where R_{Bac} = Cij/ATLij or CTLij, must be identified as a CPEC.
Where: Cij = concentration of contaminant *i* in medium *j*
SLVij = DEQ Bioaccumulation CTL or ATL
R_{Bac} = bioaccumulation index for an individual COI

Table O.3-13 - COIs with Recently Updated SLVs that have Decreased
Bradford Island, Upland and River Operable Units
(1 of 1)

Chemical of Interest [a]	Current Ecological Water SLV from Table J-5b (ug/L)		DEQ Freshwater Table 20 WQC [f] (ug/L)	Is DEQ's Updated WQC < Current SLV?
DDT isomers	0.001	b	0.001	No
BHC (gamma) Lindane	0.08	c	0.08	No
Chlordanes	0.0043	e	0.0043	No
Cyanide (Hydrogen Cyanide)	5.2	b	5.2	No
Chromium	74 (49)	d	210	No
Dieldrin	0.056	b	0.0019	**Yes**
Endosulfans	0.056	b	0.056	No
Endrin	0.036	b	0.0023	**Yes**
Heptachlor	0.0038	b	0.0038	No
Methoxychlor	0.03	c	0.03	No
Pentachlorophenol	15	b	13	**Yes**
Toxaphene	0.002	b	0.0002	**Yes**
Chloride	230,000	c	230,000	No
Cadmium	0.25 (0.17)	d	1.1	No
Copper	9 (5.8)	d	12	No
Iron	1,000	c	1,000	No
Lead	2.5 (1.44)	d	3.2	No
Mercury	0.77	b	0.012	**Yes**
Nickel	52 (34)	d	160	**Yes**
Selenium	5	b	35	No
Silver	0.12	e	0.12	No
Zinc	120 (77)	d	110	**Yes**

DEQ = Oregon Department of Environmental Quality
NRWQC = National Recommended Water Quality Criteria
SLV = Screening Level Value
ug/L = microgram per liter
USEPA = US Environmental Protection Agency
WQC = Water Quality Criteria

[a] Only COIs that were actually detected in groundwater or seeps from the Upland OU or surface water from the River OU are included in this table.
[b] USEPA 2009. National Recommended Water Quality Criteria. Office of Water and Office of Science and Technology.
[c] Oregon Department of Environmental Quality (ODEQ). Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, Table 33A).
[d] NRWQC (USEPA, 2009) shown and value in parenthesis is the criterion adjusted for hardness. As per EPA guidance, certain NRWQC were adjusted for hardness based on a site-specific hardness value of 60 mg/L.
[e] DEQ 1998. Updated 2001. Guidance for Ecological risk Assessment: Levels I,II,III,IV. Waste Management and Cleanup Division.
[f] DEQ. Aquatic Life Water Quality Criteria for freshwater organisms (Oregon Administrative rules, section 340-041, new Table 20).

APPENDIX P

RESPONSES TO DEQ COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION REPORT

Comment Number	Comments by Jennifer Peterson, Paul Seidel and Bob Schwarz, DEQ Cleanup Program April 22, 2011	US Army Corps of Engineers Response/Action Taken
General Comments		
1.	**Slope stability near the landfill.** As DEQ has mentioned previously, we are concerned about the findings in a May 2001 draft document by URS entitled, Draft *Geotechnical Design report, North Slope Regrade and Stabilization, Bradford Island Landfill.* Of particular interest are the following: - **Page 1-1, paragraph 1:** URS states that the purpose of the report is "to evaluate the stability of the slope north of the landfill and prepare a geotechnical design for regrading and stabilizing the slope." [This statement indicates that at the time, the need to regrade this slope was considered a foregone conclusion.] - **Page 4-2:** Table 1 on this page shows that even if the slope were reduced to 2:1 (horizontal to vertical), the factor of safety would be only 1.4, less than the recommended 1.5. This analysis did not consider seismic effects. Both Table 1 and Table 3 (which considers seismic effects) suggest that the slope should be reduced to 2.5:1. [As noted on in section 5.2.1.3 of the draft RI report, slopes on this part of the island are greater than 1:1.] The draft RI report discusses this issue in sections 5.2.1.3, 9.1.1 and 13.1. The draft RI report states qualitatively that "mass wasting" is possible but that the risk is low. This issue is also discussed in the following two URS documents: - January 19, 2007 draft memorandum: *Upland Source Evaluation – Bradford Island Landfill, Bulb Slope and Site 7,* - August 9, 2007, memorandum: *Upland Source Evaluation - Bradford Island Landfill.* Again, the discussions in these documents are qualitative. We are concerned that the project record includes a 2001 report containing a quantitative geotechnical analysis indicating that the slope is unstable and discussing measures to be taken to make it stable. And then the issue appears to be dropped. If the 2001 study is incorrect, a quantitative rebuttal needs to be (cont'd)	Comment noted. The May 2001 Draft *Geotechnical Design report, North Slope Regrade and Stabilization, Bradford Island Landfill* was not completed as a Final Report in 2001. The Portland District instead decided to investigate the potential for contamination to reside in the Landfill area where the geotechnical work was conducted. Based on the findings of the Draft Final *Upland and River Operable Units Remedial Investigation Report, Bradford Island Cascade Locks, Oregon,* "The majority of the ground surface at the Landfill AOPC is relatively flat, well vegetated, and shows minimal evidence of surface runoff, soil erosion, or sediment deposition, indicating that the ground surface is stable and there is minimal potential for off-site migration of contaminated soil or buried debris. The north and east sides of the Landfill AOPC include steep slopes leading down to the Columbia River. Although the potential for mass wasting appears low, soil on these slopes has the potential to migrate to the Columbia River via mass wasting." The recommendation for the Landfill AOPC presented in Section 13.7 of the draft final Remedial Investigation report (RI) was: "Based on the screening level risk assessments at the Landfill AOPC, implementation of one of two options is recommended: 1. Perform a feasibility study (FS) to identify targeted soil removal or other remedial actions which will decrease residual concentrations to acceptable risk levels or 2. Perform a site-specific BHHRA and a Level III BERA to determine if risks to human and ecological receptors are unacceptable. " For the Upland AOPCs the Portland District is planning to perform option 2 above and perform a site-specific BHHRA and a Level III BERA to determine if risks to human and ecological receptors are unacceptable. Further evaluation of the mass wasting and erosion pathways from Upland soils to the River will be performed in the BHHRA and Level III BERA because chemicals of potential concern (COPCs) were identified for these exposure pathways in the screening-level human and ecological risk assessments that were presented in (cont'd)

1. (cont'd)	(cont'd) presented showing why it is incorrect. The draft RI suggests that, if a massive slope failure were to occur and a large portion of the landfill were to end up in the Columbia River, contaminant levels in the waste are not high enough to cause significant environmental harm. We believe that contaminant concentrations are beside the point. If there is reason to think a significant portion of a landfill could end up in the river, measures must be taken to prevent the slope failure from happening.	(cont'd) Appendix O of the RI. Based on the future findings of the BHHRA and Level III BERA, the Portland District plans to revisit the North slope regrade and stabilization issue as part of the Upland FS for the Bradford Island Landfill.
2.	**Use and interpretation of qualified data.** DEQ continues to disagree with the interpretation of EMPC qualifiers. It is our understanding that the following reasoning was followed: If all laboratory QA criteria were met indicating the presence of an analyte, but the ion-abundance ratio was greater than method-defined ion ratios, the analyte was qualified as an EMPC, and then subsequently identified as a non-detection. DEQ's opinion is that the EMPC value can be corrected to account for the elevated ion abundance ratio. Depending on the amount of the deviation, the concentration may be valid and should be used in further calculations. Certainly, analytical results with ion abundance ratios less than 25 percent should be used as a full detected value. By evaluating the actual deviation of the ion ratio and the corrected EMPC value, results can be validated and used on a case by case basis. In many cases, the use of the EMPC as non-detected concentration significantly and inappropriately elevates the detection limits of the analytical results. In the future, all congener data should be provided to the DEQ laboratory for independent validation, and the instrument estimated detection limit (EDL) and analyte-specific reporting limit (MRL) should be provided. Validation of analytical data should be conducted by an independent third party. Moreover, additional cleanup procedures should be considered that have the potential to reduce the occurrence of EMPCs. Information presented in Appendix H suggests that the impact of this decision on calculation of total PCBs appears to be limited. However, the decision to treat EMPCs as non-detects adds ambiguity to the interpretation of Forebay-to-Reference Area hypothesis tests, exposure point concentration (EPC) calculations in the risk assessment and, toxicity equivalent (TEQ) estimates. Further, it may complicate an assessment (cont'd)	Comment noted. The treatment of the EMPC qualified data in the RI is consistent with the agreed upon approach, as outlined in the RI/FS MP, 22 April 2010 Memorandum (see pages 16-18), and 30 September 2010 Memorandum.

2. (cont'd)	(cont'd) of congener profiles, should this be needed in the future. Therefore, we believe decision rules for treatment of method reporting limits and estimated detection limits should be agreed on in advance of future monitoring. In addition to EMPC qualifiers, only the RDL, defined here as the "reported detection limit," was reported for high resolution data. Please confirm that the RDL is equivalent to the estimated detection limit (EDL). It appears that method reporting limit (MRL) was not reported for the high resolution data set. The MRL and EDL data provide the information necessary to "J"-flag data. Since this is not reported, it is unclear how "J" flags were assigned in the dataset. In summary, the database should be updated consistent with the above comments on treatment of EMPC qualifiers and inclusion of the MRL. **Follow-up DEQ Response:** Concerning the February 10, 2010 and the September 30, 2010 memos, the September 30 memo addressed the approach to calculation of total PCB and PAHs. DEQ agrees with the approach outlined in that memo to calculate totals, which was used in the RI report. The February 10 memo discusses the point of disagreement, which is with respect to interpretation of EMPC qualifiers as non-detections. DEQ appreciates the detailed discussion and presentation on this issue provided in the February 10 memo as well as the fact that there is limited guidance on how to handle EMPC qualified results. DEQ believes that peaks that would otherwise be qualified as EMPC may be resolvable from instrument noise and used on a case by case basis. As discussed during a meeting on June 15, 2011, DEQ prepared a proposal for management of PCB congener data to be used in future monitoring. This proposal was intended as basis for discussion between USACE and DEQ analytical laboratory staff, regarding analysis and management of future PCB congener data for the project. The proposal was transmitted in a memo from Jennifer Peterson, Paul Seidel and Bob Schwarz, to Mark Dasso and Mike Gross on July 12, 2011.	Comment accepted. DEQ's proposed approach for treatment of EMPC data will be adopted for all future monitoring activities in the River, while the approach currently used will be maintained to finalize the RI/RAs.
3.	**Forebay sediment risk assessment.** The 19 randomly collected sediment samples are intended to characterize the forebay as a single unit. However, relatively few of these samples happened to be in the vicinity of the source (cont'd)	Comment noted. The Portland District is planning to conduct future sampling in the 2007 sediment removal areas as part of the River OU FS. As stated, the additional investigation work will be conducted in the (cont'd)

3. (cont'd)	(cont'd) area (i.e., P4, P5, and P6). To the extent that residual contaminants remain in these source areas they are not adequately represented by the existing random sediment samples. The omission of source area sediment samples around Bradford Island confounds important evaluations in the RI report related to COPC selection, risk assessment and source evaluation Therefore, we believe it is appropriate for sediment to remain a relevant medium for future monitoring. There is some additional uncertainty in the risk assessment with respect to the contributions from the source area sediment to tissue body burdens. Although contaminants are distributed throughout the forebay, the most significant concentrations remain near Bradford Island, as indicated by the random samples closest to Bradford Island and source samples presented in Appendix G. Future sediment sampling will need to include more substantial sampling around Bradford Island. This should include the area dredged in 2007, so that we can evaluate whether contaminant levels have rebounded. **Clarification of DEQ Response:** DEQ's concern as expressed in the comment, relates to the adequacy of the 19 random forebay samples in capturing potential source areas. In particular, DEQs concern is focused on the older detections of PCBs outside the removal areas and along the northern shore of Bradford Island that range up to 500 ug/kg (e.g. S1-39 and S1-41; S2-72-75 and TR series). Additional COIs such as Aroclor 1260, phthalates, butyltins and metals were detected in the areas below source areas (sandblast AOPC, bulb slope, etc.) USACE proposed in an email dated July 28th, 2011, new sediment sampling locations to address this concern with the following objectives: 1) Confirm that the 19 random samples accurately represent the in-water OU. If deemed yes, then these samples would remain as the baseline condition for future monitoring. 2) As a secondary objective, detection of localized areas of contamination in the removal areas. Six new locations are proposed to address the Corps' two objectives. However, these sample locations are within previous removal areas. DEQ proposes an additional objective for sample selection: to characterize source area sediment (cont'd)	(cont'd) former sediment removal areas. The investigation will look into whether sediment has been redeposited in the former sediment removal areas and whether clams have repopulated the area. If sediment has been redeposited and accumulated in the removal areas and/or clams have repopulated the area, then both sediment and clam samples will be collected. The samples will be analyzed for PCBs, metals, PAHs, pesticides, butyltins and SVOCs. The intent of the sediment sampling will be to confirm that the 19 randomly collected sediment samples are representative of the Forebay as a single operable unit. Additionally, the Portland District is planning to collect another round of bass samples from the Forebay and Reference Areas. The intent of this sampling is to assess current bass contamination levels and set a baseline for potential bass monitoring as part of the River OU FS Alternatives. Comment noted. As part of the pre-feasibility study work, the Corps has collected additional River OU sediment and clam samples at seven locations along the north-shore of Bradford Island. The samples were collected in the areas suggested by DEQ in the October 13, 2011 email from Bob Schwarz. The intent of the samples is to verify data used in the RI characterization of the areas in and around the removal areas to verify COIs and COPCs identified in the RI/RA. The sediment and clam sampling was completed in October 2011. Sediment samples were successfully collected at all seven proposed sample locations. While clams were located and collected at all seven proposed sample locations, only six of the locations yielded enough clam tissue for the planned analysis. It is the Corps' understanding that DEQ's comments pertaining to the sampling effort in the River OU have been adequately addressed. For this reason, historical data collected outside of the removal areas will not be used in the RI and RAs. Further, as discussed in Section 5.4 in the RI Report, there are numerous data quality concerns associated with use of the historical data in terms of their ability to represent current spatial (cont'd)

3. (cont'd)	(cont'd) around Bradford Island outside the removal areas for the source control evaluation and to validate the COIs and COPCs identified in the remedial investigation and risk assessment. Additional samples should be added to address DEQ's stated objective above, and should be placed to ensure that they can be considered replacement for the older pre-RI data and address DEQ concern about runoff from different areas of concern (e.g. the Sandblast area and bulb slope AOPCs) and remaining PCB contamination outside removal areas. For example, sandblast area source samples should be placed closer to shore and more proximal to previous sampling near SBDS-19, S1-32 and S1-43. Similar samples should be placed just offshore of former pile #3 (S1-39, S1-41). Recharacterization of areas with elevated PCB sediment concentrations contamination between removal area 2 and 3 is also needed. [Proposed sample P115 may address this concern for former pile #3, but without a map that includes historical sediment samples it is difficult to verify this]. For source control, if any one composite sample indicated the potential for a localized area of elevated concentrations, then that potential source would be the subject of addition actions. If data indicate that one location is elevated relative to RI data, it should be re-screened to ensure no COPCs or CPECs have been missed in the risk assessment. If sampling cannot be completed to meet these objectives in the fall of 2011, a screening of historical Bradford Island source area sediment data for all contaminants of interest outside the removal action areas should be completed as a part of RI and risk assessment revisions. Maps should be provided that show the historical sampling locations along with more recent fore bay sampling efforts. Currently, it is difficult to determine how current sampling plans line up with historical samples.	(cont'd) distributions. These concerns include the fact that collection of data occurred over many years and multiple sampling events, and there is variation in sampling methods, analytical methods, suite of included analytes, and reporting limits. These data were collected from the dynamic forebay environment and more than one interim removal actions has also occurred since the collection data. Therefore, inclusion of the historical data is expected to introduce additional uncertainty into the RI evaluation.
4.	**Goose Island.** The sampling around Goose Island provides limited information about contaminant levels in sediment and small home range species such as clam, sculpin and crayfish. Data on these receptors was hampered by problems collecting tissue on these species. The lines of evidence available, however, do show elevated levels of contaminants around Goose Island in sediment, surface water, and tissue. Contaminants of interest in the Goose Island area appear similar to those found around Bradford Island, (cont'd)	Comment noted.

4. (cont'd)	(cont'd) and include cadmium, mercury, phthalates, PCBs, and PAHs. The magnitude of these exceedances and contribution to fish tissue are unclear at this time given uncertainty in bass habitat use. Until more post-removal data is collected to refine exposure estimates, Goose Island should remain an area of concern.	
5.	**Censoring level.** Because a J-flagged detection contains useful information, as described in Section 7.2.1, it is our preference to censor data at the method detection limit (MDL), not the method reporting limit (MRL), for EPC calculations. While this could be interpreted as less precise, it is standard risk assessment practice, and should be done consistently in any future risk calculations.	Clarification provided. In general, calculation of the 95% upper confidence limit on the mean (UCL) was relatively insensitive to the choice of censoring level. Based on the data review presented in Section 7.2, the more statistically-robust UCL calculation using the MDL as the censoring level, plus using the J-flagged data as-is, was indeed employed in the EPC calculations for the risk assessments, as suggested by the commenter.
6.	**Data sets not used in the RI.** Data collected in earlier phases of investigation and not used in the RI are presented in Appendix G. Additional explanation of these data sets is needed to ensure important data are not omitted. Alternatively, these data should be reviewed as part of a weight of evidence evaluation to ensure no additional contaminants of potential concern (COPCs) or contaminants of potential ecological concern (CPECs) would have been included, if these data were considered. For example, data should not be removed when evaluating areas of concern (e.g. landfill, sandblast area, River OU) except when they are superseded by newer data that represent the same locations or analytes list. As specific examples for the Sandblast Area and River OU, the older data sets include analyses for butyltins in soil, sediment, pore water and catch basin samples that were not included in more recent forebay sediment samples. These appear to be associated with a source in the sandblast area, and would not have been addressed as an element of the risk assessment. Even where similar lists of COPCs were identified, such as the Landfill Area, omitted datasets provide additional information on the heterogeneity and magnitude of contamination not captured by the most recent data collection.	Comment noted. The data utilization strategy was presented in detail in the agreed upon RI/FS MP (URS, 2007). As discussed in Section 5.0 of the RI, except where data quality does not meet the standards outlined in the RI/FS MP (URS 2007a) and where comparable data were superseded by newer data at the same location, analytical results from investigations in the Upland OU from 1999 to 2009 are included in the RI data set and were evaluated in the Upland OU risk assessments. The relatively static physical environment of the Upland OU means that environmental data collected over the past decade can be considered representative of current conditions. Historical Upland OU data not utilized in the RI due to poor data quality are provided in Appendix G. In contrast to the Upland OU, the physical environment of the River OU is much more dynamic and the primary (in-water) contamination sources (the electrical equipment, debris, and the majority of the contaminated sediment) have been removed from the river. Additionally, the sampling methods used to collect the historical data from the River OU are not comparable to the recent sampling which was conducted in accordance with the procedures outlined in the River OU QAPP (URS 2007b), Revised Sculpin Analysis Strategy Technical Memorandum (URS 2009b), and In Water QAPP Addendum (URS 2009c). Therefore, only analytical results from investigations in the River OU after 2007, with the exception of smallmouth bass and sucker collected in 2006, are included (cont'd)

6. (cont'd)		(cont'd) in the RI data set and used in the River OU risk assessments to evaluate current conditions. As discussed above, based on the future findings of the BHHRA and Level III BERA the Portland District plans to revisit the North slope regrade and stabilization issue as part of the Upland OU FS for the Bradford Island Landfill AOPC (see the response to General Comment 1) and is planning to conduct future sampling in the 2007 sediment removal areas as part of the River OU FS (see the response to General Comment 3). The initial FS samples in the sediment removal areas will be analyzed for PCBs, metals, PAHs, organochlorine pesticides, butyltins and SVOCs. Also see the response to General Comment 9 (Source Control), below.
	Clarification of DEQ Response: DEQ does not object to replacing older data with newer data to represent current conditions, and using consistent sampling and analytical methods and detection and reporting limits that are lower and using recent data that were collected to meet specific RI objectives. To complete resolution of the comment, DEQ requests more specific information on the particular reasons why each data set not used in the RI was excluded. This information should be presented in Appendix G. We suggest a table by date, sampling event and environmental medium that presents the reason for exclusion of each data set, and references the newer data that replaces it. For the in-water data, in cases where some analytes and media may not be replaced by newer data, a reference to the inclusion of the same analytes in the planned sediment sampling and tissue monitoring would also be appropriate. Some of the data sets that represent catch basins or sediments near the sandblast and landfill AOPCs should be considered in assessing source control from these AOPCs.	Comment noted. One main objective of the RI/FS MP (URS 2007) was to review the all of the existing data collected from the River (both qualitative and quantitative) during previous investigations and remedial activities in order to develop a clear understanding of the COIs, their present locations, and their potential future fate and transport. Much of this information was presented in Section 5.0 of the RI/FS MP. The list of COIs developed for each medium in the River was used to identify data gaps and facilitate the sampling efforts described in the RI/FS MP and River QAPP (URS 2007). As described in Section 8.0 of the RI/FS MP, all existing information was used to identify data gaps that would allow for the achievement of 3 main goals: nature and extent delineation, completion of the HHRA, and completion of the ERA. The Corps feels that the sampling efforts performed in support of RI and RAs were adequate to achieve the 3 main goals and does not believe additional efforts are warranted to re-justify the sampling design and approach. With the exception of the additional sampling activities described in the response to General Comment 3, which will supplement the proposed pre-FS sampling effort, no further attempt will be made to re-characterize the site or justify the exclusion of historical data. (cont'd)

6. (cont'd)		(cont'd) As stated previously, including the historical data (or any data collected independently of the random sampling design) would introduce bias into the Ras since the purpose of the random sampling strategy was to generate a dataset that represents the Forebay as a whole. Each random sample was spatially-distributed equally across the entire unit. However, all chemicals will be analyzed for in pre-FS sediment and clam samples that will be collected from the north side of the island and bass tissue collected from the Forebay and Reference Area (PCBs [Aroclors and congeners], metals, PAHs, pesticides, butyltins, and SVOCs). If the results of these analyses indicate a potential source of contamination that was overlooked based on evaluation of the random Forebay datasets included in the RI/RA, the list of sediment and tissue COPCs and CPECs may be modified to reflect the new information. URS. 2007. Remedial Investigation/Feasibility Study (RI/FS) Management Plan (MP), Bradford Island, Bonneville Lock and Dam Project, Cascade Locks, Oregon. September. URS. 2007. Quality Assurance Project Plan (QAPP), River Operable Unit Remedial Investigation, Bradford Island, Bonneville Lock and Dam Project, Cascade Locks, Oregon. September.
7.	**Reference area.** The reference area does have some elevated metals, PAH, and 4-methylphenol concentrations, indicating some degree of impacts from these constituents. In particular the bass samples are substantially elevated over the forebay in lead and nickel.	Comment noted.
8.	**Statistical comparison between site and reference area.** There are several instances where the statistical comparison between site and reference exhibits a high minimum detectable difference (MDD). In these cases the hypothesis test had very low power to detect a difference. However, examination of the data further clearly shows a difference in the range and magnitude of contamination. In these cases, contaminants of interest (COIs) should be carried forward to the risk assessment for screening. A few examples are provided below, but corrections should be made to all exposure areas and media (soil, sediment, surface water, groundwater, seep water, and tissue samples). Some examples include: (cont'd)	Comment noted. The goal of the statistical comparison was to compare the central tendency (mean or median) of two populations, as opposed to comparing the tail-end or the maximum observed values. This is analogous to the use of 95% UCL (an estimate of average concentration) to reflect the EPC (i.e., average exposure). Hence, even though a few elevated concentrations were observed for the site, as noted by the reviewer, the *average* concentrations did not appear to be significantly different between the two populations. Given the large number of statistical comparisons, it was conceivable that some MDDs were not as desirable; though currently a minimum level of MDD was not established (cont'd)

8. (cont'd)	(cont'd) Landfill, surface (0-1ft): Arsenic, chromium, copper, nickel and silver were detected at maximum concentrations of 30, 801, 494, 570 and 570 parts per million (ppm), respectively. MDDs were 148 percent, 598 percent, 195 percent, 492 percent and 370 percent. The report concluded there was no statistical difference, and these COIs were not carried forward into the risk assessment. The 0-3 ft interval had similar results with higher-magnitude detections and larger MDDs. Sandblast, Surface (0-1ft): The issue described above for the landfill samples is also true here, for copper, mercury, nickel and antimony. **Follow-up DEQ Response:** DEQ notes that this issue was considered in the February 10, 2010 memorandum responding to DEQ comments on the data sufficiency report as well as in this comment response. We note that minimum detectable differences were acceptable in many cases, and we acknowledge that the purpose of the hypothesis testing was to evaluate whether central tendency concentrations were different, and that the assessment generally accomplished this objective, although there are some instances where minimum detectable differences (MDDs) are relatively elevated (i.e., more than 100 percent). We also agree that in these cases, a large number of samples would be required to reduce the MDDs, which we are not requesting. Notwithstanding the foregoing, DEQs primary concern with these tests is the adequacy of statistical power to detect a difference when variability is higher. In particular, the response to our comments on the data sufficiency report notes that the probability of making both Type I and Type II errors is controlled, and therefore it does not matter how the null hypothesis is defined. To clarify the DEQ concern, we note the following from USEPA ProUCL guidance: "if the variance estimate used in the planning state was too low, the statistical test is unlikely to reject the null hypothesis due to the lack of sufficient power". "If large uncertainties exist concerning the variability of the contaminant concentration in potentially impacted areas, the Background Test Form 1 (null is that concentrations in potentially impacted site areas do not exceed (or are less than)) may lead to inconclusive results". For the (cont'd)	(cont'd) by published guidances. For some constituents, it was plausible that the inherent natural variation was high, and an unrealistically large number of samples would then be required to reduce the MDD. In any case, for these constituents with higher MDDs, a review of the respective box-and-whisker plots presented in Appendix L did not suggest strong evidence that the site's *central tendency* was significantly higher than the reference area's. As for the current statistical comparison, it should be noted that a conservative alpha level (false positive rate) of 0.05 was already in use for each "individual" comparison, which provided a balancing act to reduce the false negative error. Comment noted. The errors rates selected were based on the previously submitted RI/FS MP (URS 2007), and the ProUCL guidance was not published at that time. Nevertheless, given the large number of comparisons that were performed, the current alpha level (0.05) was conservative for each "individual" comparison, as the site-wide alpha level (or exposure area alpha level) would be much higher (more conservative), based on the Bonferroni correction. In terms of the power of the statistical comparison, the goal established in the RI/FS MP (i.e., to detect one-standard-deviation-away) was achieved. However, for Upland soils only, this one-standard-deviation happened to be large due to the high data variability, which could not be controlled because of the inherent heterogeneity of the Upland soil environment. (It should be noted that the data variability for sediment and tissue samples from the River are low and the MDDs are generally well within acceptable range.) Currently, there is no established state or EPA guidance on what level (ceiling) of MDD one must achieve. For analytes with a high MDD (such as greater than 100% of the reference mean), which affects the comparison for metals in the Upland OU (Landfill, Sandblast, and 4 AOPCs only – see Table L-1), we agree that further desk-level evaluation should be done. The metals (with high MDDs) include: antimony, arsenic, chromium, copper, magnesium, mercury, nickel, and silver; which represents 41 out of 378 combinations (cont'd)

8. (cont'd)

(cont'd)

Background Test Form 1, the error rates selected by EPA as the minimum recommended performance measures are "the confidence level should be at least 80 percent (alpha = 0.20) and the power should be at least 90 percent".

We suspect that this issue has been considered. To address the DEQ concern regarding potentially inadequate power, DEQ proposes that the statistical power be included in the Figure L-1, Appendix L so it can be seen directly along with the MDD and a more detailed explanation of how the probability of making both Type I and Type II errors is simultaneously controlled to avoid the potential of inappropriately making a Type II error. If there are cases with low power, then these COI can be re-screened, and the comment will be resolved.

One specific case where we suspect the hypothesis test may be leading to an inappropriate conclusion is mercury, which shows some elevated samples in the sandblast area, has high MDD, was selected as a preliminary COPC, but was not in the "site-related" list due to similarity in central tendency site and reference sediment concentrations (See DEQ's response on the response to General Comment 10).

(cont'd)

of metals and exposure depths. These metals were compared to the following depth-specific criteria:

- 0 to 1 foot bgs – ecological SLVs
- 0 to 3 feet bgs – lower of human health and ecological SLVs
- 0 to 10 feet bgs – human health SLVs

The higher of these depth-specific SLVs and the Upland background UPL was used as the final SLV for the comparison.

Of the eight metals, magnesium is an essential nutrient, and all detected results of silver are below the lowest, depth-specific screening criteria; hence, these two metals do not warrant any further investigation. The remaining six metals affect the following Upland exposure areas:

Site AOPC	**Depth Group**	**Antimony**	**Arsenic**	**Chromium**	**Copper**	**Mercury**	**Nickel**
Landfill	0-1 ft		X	X	X		X
	0-3 ft			X	X		X
	0-10 ft		X	X			
Sandblast	0-1 ft	X			X	X	
	0-3 ft	X			X	X	
	0-10 ft						
4 AOPCs	0-1 ft	X			X	X	
	0-3 ft	X			X	X	
	0-10 ft						

None of the metals with high MDDs associated with 0 to 10 foot bgs soils from the Sandblast Area and 4 combined AOPCs exceed human health SLVs. Arsenic and chromium both exceed human health SLVs for the Landfill, but were already demonstrated to be above background based on the statistical comparison and were already included in the HHRA (thus, not shown with an X for the Sandblast Area and 4 AOPCs).

Given that the data variability is "uncontrolled" and high data variability leads to uncertainty, we suggest that the aforementioned 21 combinations of metals and exposure depths be evaluated in the risk assessment uncertainty section (Appendix O). This focused analysis allows us to explore whether these compounds should be included as COPCs and thereby be advanced to the next level of risk assessment. This focused (cont'd)

8. (cont'd)		(cont'd) evaluation will assure that these uncertainties have been explicitly considered, be less disruptive to the current main report, and should help to ease the review effort by ODEQ for the next submittal. Per the telephone conference on Nov 14, 2011 between ODEQ, USACE, and URS, the following three items will be provided to ODEQ subsequent to this response-to-comment letter for further consideration: • text that will be inserted into the main report in either Section 8 or 9 that briefly describes the additional evaluation that has been conducted to address the uncertainty associated with the 8 metals with high MDDs; reference to Appendix O will be made in this section • a draft outline/approach for the revised uncertainty section that addresses these COPCs (e.g., screening against SLVs) • evaluation of one of the metals as an example of the lines of evidence that will be used to make decisions regarding these COPCs
9.	**Source control.** Certain decision criteria have confounded the interpretation of the RI data in terms of the conceptual site model and comprehensive evaluation of Bradford Island sources. A more rigorous evaluation of source control should be presented in the report. Of note are the sandblast area, bulb slope and the landfill. The data clearly show that migration from these areas has occurred (e.g., sandblast COIs were found in river sediment and porewater), and it is important to show and confirm that these pathways have been controlled. Some of the tissue (sculpin, clam, crayfish) appear to be impacted by antimony, arsenic, barium, copper, chromium, mercury, methyl mercury, cadmium, lead, nickel, zinc, phthalates and PAHs, relative to the reference area. These were also the same constituents that were elevated in the landfill and bulb slope areas of potential concern (AOPCs). Further, the following points indicate a need for a specific consideration of source control: • Section 8.3.4 describes a comparison of soils in the landfill, bulb slope and sandblast area AOPCs to reference area soils. One conclusion is that concentrations of hazardous substances in these AOPC soils do exceed those in the reference area. In particular, the evaluation shows that metals including mercury and lead as well as PAHs are elevated in these soils. We also note that copper was (cont'd)	This response is organized into the three main topics discussed in the comment. **Data Gaps and Insufficiencies to Assess Upland Soil Migration to the River.** Comment accepted. The overland runoff pathway for the Landfill, Sandblast Area, and Bulb Slope will be subjected to a more site-specific evaluation in the BHHRA and Level III BERA that will be performed for the Upland OU. Aquatic-related target receptors from the Forebay will be assessed in the baseline risk assessments for the Upland OU in order to identify the list of COPCs/CPECs that should comprise the focus of source control measures evaluated in the FS. The HHRA recommended no further evaluation for the Bulb Slope (one of the three AOPCs included in the runoff pathway evaluation), and therefore only this potential soil-to-river transport and exposure pathway will be included in the BHHRA for the Bulb Slope. The findings of the Upland BHHRA and Level III BERA for this runoff pathway will be carried into the Upland OU FS, where these findings will be considered in parallel with the initial FS data that will be collected from the former removal area (and bass from the Forebay). (cont'd)

9. (cont'd)	(cont'd) detected at 13,100 ppm in sediment off the bulb slope area, as documented in Appendix G. As described in Section 9.1.1, the inorganics in upland soil were compared to reference area sediment from the River operable unit (OU) as a means of screening for potential impacts to the River OU. These soils exceeded reference area sediments for some contaminants, including lead and mercury. While not used for COPC selection, Table L-8 also shows PAHs are elevated in upland AOPC soils relative to reference area sediment. • The data set from groundwater seeps is limited. However, the results suggest that seep water is likely elevated relative to reference area groundwater with respect to metals including lead and mercury and petroleum hydrocarbons. Section 9.3.2 presents the interpretation that groundwater exceeding screening level values (SLVs) may be discharging to surface water. • As described in Section 9.3.1.1, discharge to catch basins is believed to be a historic and potentially current mechanism of transport from the sandblast AOPC to the River OU. Elevated levels of metals, including lead and cadmium, Aroclor 1260, phthalates and butyl tins are associated with the sandblast area AOPC. Post-removal sediment and tissue samples collected near this source (P04) continue to show elevation of these contaminants in sediment, clam and crayfish tissue. Nickel was detected in sandblast area catch basin solids at up to 374 ppm and in river sediment at one outfall at up to 630 ppm (SBDS-19). Chromium was detected at up to 620 ppm and nickel at up to 520 ppm in sediment (S1-43) off the sandblast area. • Post removal sediment butyl tin and organochlorine pesticide data were not collected and represents a data gap. Pre-removal sediment (P-44) showed detections of Aroclor 1260 up to 380 parts per billion (ppb) in sediment in this area and catch basin soils and filter sock material up to 173 and 144 ppb respectively. • Lead, mercury and PCBs (Aroclor 1260) are elevated in the bulb slope AOPC. • Metals including lead and mercury, and PAHs were detected in (cont'd)	(cont'd) Upland source control will be considered during the Upland OU FS. As described above in the response to General Comment 6, the initial FS samples in the sediment removal areas and bass tissue samples from the entire Forebay will be analyzed for PCBs, metals, SVOCs (including PAHs), organochlorine pesticides, and butyltins. Collection of new data for these chemical classes will address the concerns regarding specific analytes expressed throughout this comment. **Upland Groundwater Transport to River (Groundwater and Seep and Co-locate Surface Water Data).** Clarification provided. Concentrations of most COIs at the Landfill exhibit a decreasing trend from groundwater monitoring wells located distally from the river, to groundwater wells closer to the river, to the seeps, and thence to the river surface water. This trend occurrence and the COIs in exceedance of the SLVs for humans and aquatic organisms is discussed in further detail in Sections 11.2.4.1.5 and 12.3.4.1.1. Based on the findings of the HHRA and ERA, no further evaluation of COIs in groundwater from the Landfill is necessary to address the discharge to surface water pathway. Section 9.3.2 describes groundwater quality at the Sandblast Area and conditions regarding groundwater discharge to surface water of the River. Sections 11.2.4.2.5 and 12.3.4.1.2 provide more detailed descriptions of this groundwater to surface water transport pathway as it relates to human health and ecological risk. Based on the findings of the HHRA and ERA, no further evaluation of COIs in groundwater from the Sandblast Area is necessary to address the discharge to surface water pathway, with the exception of PAHs. As described in the response to Specific Comment 12 (below), concentrations of PAHs in direct push groundwater samples from the Sandblast Area will be added to the groundwater screening tables (HHRA Tables M-17, M-18, and M-19 and ERA Tables N-15 and N-20) to address the sampling data gap for PAHs in monitoring well data for this AOPC. **Implied Correlation Between Upland Sources/COIs and PCBs in River.** Comment noted. The Upland OU was not identified as the source of PCB contamination in the River OU. The primary site-related source of the River OU PCB contamination is from equipment disposal along the northern shoreline. A statistical correlation between PCBs and (cont'd)

9. (cont'd)	(cont'd) erodible soil around the landfill, suggesting the landfill as a potential source to the River OU. • A number of the preliminary COPCs and CPECs were statistically higher in forebay tissue samples relative to the reference area. As described in Section 9.6.2.2, cadmium and various PAHs in forebay clams were significantly higher than in reference area clams. In crayfish, various metals and PAHs were significantly higher than in the reference area crayfish. In sculpin, cadmium, lead and mercury were statistically higher. For bass, various metals and PAHs were higher in the forebay relative to the reference area. • Total PCBs (the Kaplan-Meier based sum) appears to have some correlation to cadmium, lead and mercury in the forebay sediment, which may suggest a common source. Based on the various lines of evidence presented above, it appears that there is a plausible source and mechanism of transport of metals, butyl tins, phthalates, PCBs and PAHs from several of the upland AOPCs to the River OU and these same constituents may be elevated in some biotic tissues. Moreover, it appears that some of these constituents are correlated to total PCBs, indicating a potential common source. Based on these concerns we believe it is appropriate to carry those substances identified as preliminary COPCs and CPECs forward for some additional consideration in the RI/FS process and to address them as part of a more comprehensive source control evaluation. **Follow-up DEQ Response:** • **Data gaps and insufficiencies to assess upland soil migration to the river.** DEQ's comment will be resolved by the additional sampling proposed (July 28, 2011 email from Mark Dasso) to collect new samples along the northern side of Bradford Island, including the potential source areas outside the former removal area. We understand this sampling will be a component of the source control evaluation consider as part of the Upland OU FS. The sandblast area is an example of an area that needs assessment for source to control to ensure migration to River OU is not occurring. (cont'd)	(cont'd) metals may not obligatorily indicate causation. Comment noted.

9. (cont'd)	(cont'd) • **Upland groundwater transport to river (groundwater and seep).** DEQ Groundwater and seep data were screened for risk to the river, but screening was conducted using a 95 percent UCL. For source control, each seep and well should be screened separately.	(cont'd) Comment noted. The maximum detected concentrations in groundwater, seep water, and co-located surface water were compared to the lowest of the human health and ecological SLVs for purposes of nature and extent delineation (Section 9.0). In addition, COPCs with concentrations in these Upland water media that exceeded the lowest SLVs were plotted on figures that illustrate the point by point comparison to SLVs (i.e., each well and seep/co-located surface location), and the text in this section discusses point by point exceedances for all COPCs. Furthermore, in the HHRA and ERA sections (Section 11 and 12), maximum detected concentrations or 95% UCLs (groundwater from the Landfill and Sandblast Area only) in the Upland water media were compared to the respective SLVs and selected COPCs were plotted on figures that illustrate point by point exceedances for all wells (sample locations). Wells closest to the point of discharge, and seep/co-located water samples available for the Landfill only, comprise the main focus of the detailed evaluation of the Upland groundwater transport pathway. The process used to evaluate Upland water media followed in the report concurs with DEQ guidance for conducting ERAs (2001), and an adjustment to this process is not warranted for purposes of this document. However, additional evaluation specifically for source control purposes may be considered in FS or in a separate document.
	• **Implied correlation between upland sources/COIs and PCBs in river.** DEQ agrees that correlation does not necessarily imply causation. However, because Aroclor 1260 was detected in the landfill, bulb slope and sandblast area soils, and a stormwater and a potentially complete erosion pathway exists, we do consider the correlation to suggest potentially complete migration pathways from the upland OU.	Comment noted. All COI classes, including PCBs (each Aroclor and 209 congeners) metals, PAHs, pesticides, butyltins, and SVOCs, will be analyzed in the River OU to evaluate potential contribution from Upland sources.
10.	**Preliminary versus site-related COPCs/CPECs.** Section 11.2.3.5 discusses the approach used to identify site-related COPCs. Strictly speaking, this is not a determination of which COPCs are associated with site releases. The approach described is a filter to identify those constituents that are more likely to pose significant risk potential, based on relative risk. We do not think that this filter is an adequate basis for dropping the preliminary COPCs from further consideration. Although it is common to focus risk management on one (cont'd)	Clarification provided. The use of the terminology "Preliminary COPCs" and "site-related COPCs" may contribute to confusion and will be revised to say COIs and COPCs respectively. The term "site-related" will be deleted from the text and tables. Additional clarifying text will be added to 11.2.3.5 to reflect the fact that the process that was followed consisted of a weight-of-evidence approach that evaluated site-specific patterns of chemical distribution and exceedance *in addition* to the (cont'd)

10. (cont'd)	(cont'd) or a few substances, other COPCs posing less risk potential are also addressed. For example, where it can be shown that COPCs are spatially co-located, risk management actions aimed at substances posing the highest risk potential can also be demonstrated to address other contaminants. Alternatively, additional risk evaluation may demonstrate risk below acceptable levels for less significant COPCs. We believe additional consideration of preliminary COPCs is warranted, in particular for metals, PAHs and phthalates.	(cont'd) relative-risk filter. The resulting conclusions were used to identify which chemicals should be considered COPCs warranting further evaluation or consideration for each AOPC on the basis of human health concerns. The site-specific discussions are presented in each of the AOPC discussions are presented in each of the AOPC discussions (e.g., the rationale for elimination of lead and VOCs as COPCs in landfill soils is discussed in Section 11.2.4.1). All of the COPCs identified in the HHRA (specific metals, PAHs, and phthalates) are proposed for additional evaluation in a baseline HHRA for the Upland AOPC (Landfill and Sandblast AOPCs). Part of this evaluation will include a more detailed assessment of the COPCs identified through the evaluation of mass wasting and erodible soils performed for the Landfill, Sandblast Area and Bulb Slope AOPCs (see Tables O.2-1 through O.2-3, as well as Sections O.2.1.4). The sediment data, which will be collected in the removal footprint area and immediate vicinity (i.e., where historic and, potentially, recent Upland soils have been transported), and the bass data, which will be collected from the entire Forebay as part of the initial FS sampling effort, will be evaluated in the Upland OU FS in conjunction with the list of chemicals identified as Upland COPCs/CPECs for the overland runoff pathway (see the response to General Comment 9). These sediment data will be used to identify which chemicals, if any, may have been or may currently be transported from Upland erodible/mass wasting soil to the Forebay and will be used to assess the extent to which any bioaccumulative COPCs may have impacted the aquatic food web. Similarly, these initial FS sediment and bass samples will provide a more current data set for the River OU FS.
	Follow-up DEQ Response: The proposed resolution of changing the terminology from "preliminary COPCs and site related COPCs" to "COIs and COPCs" is not appropriate. DEQ Human Health Risk Assessment Guidance (ODEQ 2010) states "chemicals detected at the site which have not been screened should be designated as "Chemicals of Interest" (COIs), while those that have been screened-in should be designated as "Chemicals of Potential Concern" (COPCs). (cont'd)	Comment accepted. The weight-of-evidence approach to selection of COPCs is a scientifically sound method that utilizes the HHRA guidance (DEQ 2010) and also uses the Problem Formulation to identify priority chemicals and to make defensible decisions regarding further risk assessment needs. The WOE approach may be used to screen out chemicals as well as to screen in chemicals that may otherwise be excluded (e.g., commenter's discussion of arsenic and cadmium above) (cont'd)

10. (cont'd)	(cont'd) According to EPA and DEQ Guidance, chemicals that exceed risk based levels are COPCs regardless of additional analysis on "site specific patterns of chemical distribution". This type of analysis may be used in the feasibility study, but the contaminants should be retained in the risk assessment. Some discussion may be included with the uncertainty section of the risk assessment to prioritize and identify the primary risk drivers. Specifically, uncertainties in the SLVs or toxicity information can also be discussed in the uncertainty section. The following discussion provides some examples of COPCs that were not designated as site-specific, but for which DEQ believes the overall evidence suggests that they need to be carried forward in the risk assessment. • **Mercury.** Mercury has an association with the bulb slope and landfill, detection in groundwater seeps, occurrence in bass over risk-based levels and relatively greater variability than reference variability in sediment. Therefore, regardless of comparison of the central tendency in sediment, mercury should be retained as a significant COPC warranting focus at these upland AOPCs and the in-water OU. • **Arsenic.** Arsenic was screened out in crayfish based on low risk potential, given that that portion of the arsenic exists in the organic form. Because arsenic is associated with the sandblast area, and the crayfish samples nearest to the north shore of Bradford Island were the most elevated, arsenic should be a focus of source control from upland AOPCs and retained as a COPC. • **Cadmium.** Clams and sculpin from the forebay show higher levels of cadmium relative to the reference area. Visual inspection of surface water data suggests it may be higher in forebay surface water, and cadmium is elevated in the landfill and sandblast AOPCs. The reference area bass appear to represent two separate populations with respect to several metals, including cadmium. Therefore, the bass result is somewhat ambiguous. We recommend retaining cadmium for source control and monitoring. (cont'd)	(cont'd) and allows a more holistic view of the data. The weight of evidence text will remain in the RI Report since it is defensible and sound and is consistent with the approach described in the RI Management Plan. As noted in the responses to General Comments 3 and 6, however, the sampling plan for the pre-FS data collection effort has been revised based on discussions with DEQ to allow for better characterization of sediment and clams outside of the in-water removal areas and areas most likely to be influenced by Upland sources. All chemicals, including arsenic, mercury and cadmium, will be analyzed for in pre-FS sediment and tissue samples. If the results of these analyses indicate a potential source of contamination that was overlooked based on evaluation of the random Forebay datasets included in the RI/RA, the list of sediment and tissue COPCs may be modified to reflect the new information. Additionally, a more thorough evaluation of the potential for mass wasting of Upland soils will be conducted during the FS to support conclusions made regarding the likelihood and magnitude of the overland runoff pathway. Text describing the purpose of the pre-FS sample collection and use of the data (i.e., to confirm list of COPCs) and the additional investigation of the mass wasting scenario will be added in the revised RI/RA.

10. (cont'd)	(cont'd) **Additional Follow-up DEQ Response:** **CPEC selection.** In response to CPEC designations in the ERA, **Table 1 (attached)** presents a list of CPECs identified in the risk assessment. These CPECs are further evaluated in Section 12 to determine if they should be retained for either a Baseline Level III Risk Assessment or remediation. These CPECs are all COIs that exceeded ecological risk based levels. Many of these chemicals screen in for several different receptor groups in one AOPC, which is a strong line of evidence that these chemicals are present at effect levels for many species and the community as a whole. For example, in the landfill mercury screens in for plants, soil invertebrates, birds and mammals, but is only retained for mammals as a CPEC for further assessment. Many chemicals also screen in across different AOPCs. For example, antimony screens in for the landfill and the sandblast area, but is not retained as a CPEC in either case. However, it shows up as a CPEC in the exposure area of four AOPCs combined addition weight that the individual AOPCs are impacted. All CPECs should be identified as such carried forward to the FS unless a baseline ecological risk assessment (to identify COCs) is completed for these chemicals.	Comment accepted. The purpose of the weight of evidence approach used to identify CPECs in the ERA is scientifically sound and serves to focus the forthcoming Upland Level III BERA on the CPECs, receptors, and exposure pathways that warrant a more site-specific evaluation. It is not necessary, and not common practice, to carry all chemicals into a BERA simply based on an exceedance of a SLV. However, to address one of the main concerns expressed in this comment and allow for a more comprehensive (less piece-meal) Upland BERA, any CPEC recommended for further evaluation for a particular AOPC and specific receptor group will be retained for all receptor groups in the BERA. See the response to the first part of General Comment 10, which addresses specific concerns raised by DEQ about the influence of Upland sources on River media. Based on evaluation of the pre-FS data that will be collected, the list of sediment and tissue CPECs may be modified to reflect the new information.
11.	**TEQ screening.** A TEQ screening for dioxin-like PCB congeners is not included in the risk assessment. Please include this screening in a revision for both human health and ecological assessment. TEQ values should be compared to the 2,3,7,8-TCDD values presented in DEQ's Guidance for the Evaluation of Bioaccumulative Chemicals of Concern.	Comment accepted. The screening already performed in the risk assessment for the individual dioxin-like PCB congeners will be augmented through evaluation of the total TEQ expressed as the summation of these 12 congeners for both human health and ecological receptors.
12.	**COCs.** In addition to other contaminants of concern (COCs), all PCB congeners, total PCBs and dioxin-like PCBs as TEQ should be considered contaminants of concern for the site.	Clarification provided. Total PCBs expressed as the sum of 209 congeners and dioxin-like PCBs, which will also be expressed as a total PCBs TEQ (see the response to General Comment 11), are considered COCs in the Forebay. All 209 congeners will be analyzed for in the initial FS samples collected from the Forebay and Reference Area. The comparison of individual PCB congener concentrations in the Forebay and Reference Area was performed to determine which congeners measured in River OU media have concentrations that are elevated relative to the reference area, and, thus, potentially attributable to Bradford Island, and which have concentrations that are indistinguishable from more widespread conditions, which are likely due to other sources not related to the site. This information may be useful for the next phase of the project (i.e., FS), but the intention was not to immediately screen out certain congeners from further investigation.

Specific Comments		
1.	**Section 6.2.2.** The second sentence in the first paragraph is incomplete.	Comment accepted. The text "starting on" will be deleted at the end of the second sentence.
2.	**Section 6.2.3.2, surface water.** Why were historical water samples collected outside of the removal area (e.g. Goose Island, upstream) not included in the RI?	Clarification provided. See the response to General Comment 6, above.
3.	**Table 6-6a, bass and largescale sucker results.** Organochlorine pesticides and butyltins were not analyzed in tissue. Future monitoring should include these COIs; they have been detected in sediment during previous rounds of sampling (e.g., near the sandblast area). Upland sources include the sandblast area (soil and catch basins) and the landfill (up to 9,500 ppb DDT was found in test pit TP1-01).	Comment accepted. As discussed in the response to General Comment 3, the Portland District is planning to conduct future sampling in the 2007 sediment removal areas as part of the River OU FS. The initial FS samples in the sediment removal areas will be analyzed for PCBs, metals, PAHs, organochlorine pesticides, butyltins and SVOCs. Also see the response to General Comment 9 (Source Control).
4.	**Section 7.2.1, Upland OU.** Please clarify what is meant by "more conservative" at the top of page 7-7, and why censoring at the MRL is more conservative. DEQ prefers that non-detects be censored at the MDL. While results below the MRL are less precise, they contain information about the presence of the contaminant, and should not be considered non-detect.	Clarification provided. The intent of the statement "censoring using the MRL is a more conservative approach" was to describe that the UCL results were generally higher when the MRL was used as the censoring limit. We agreed with DEQ that censoring using the MDL was the preferred statistical method for the risk assessments since it preserved the rank order of the data, plus the information from the J-flagged data were properly maintained. The preferred MDL-censoring method was indeed used in the subsequent EPC calculations for risk assessments.
5.	**Section 8, comparisons between the forebay area and reference area.** DEQ prefers that hypothesis tests take the alternate form, with the null hypothesis stating that the site concentrations are greater than (1-sided) or different from (2–sided) the reference area. We acknowledge that power tests are performed under a normal approximation. Many, perhaps most, of the data sets are not normal. Moreover, in many cases, the minimum detectable differences were too high to detect meaningful differences that exist. Therefore, we believe the best approach for any future comparisons, if needed is to use the alternate hypothesis form.	Comment noted. The current hypothesis testing set-up controlled both the probability of incorrectly concluding that a clean site was contaminated and the probability of incorrectly concluding that a contaminated site was clean. When both of these probabilities were controlled, it did not matter how one defined the null hypothesis. The conclusion of whether the mean Forebay concentrations were higher than the mean Reference Area concentrations would be the same even if the null hypothesis and the alternative hypothesis were to be switched. The same level of detectable differences would also be achieved in either set-up. In the future, if new data are collected and a new statistical comparison is warranted, the reverse hypothesis testing set-up suggested in the comment will be considered. (cont'd)

5. (cont'd)	**Follow-up DEQ Response:** See response on General Comment 8.	(cont'd) The minimum detectable differences for inorganic constituents in the River OU (which were some of the key comparison results, as their conclusions were being used in the COI selection process) were very good – and most minimum detectable differences were within the 20% to 30% range. Comment noted.
6.	**Section 8.1.** It is unclear why a median MDL or MRL was used for censoring, as opposed to a sample- and analyte-specific value, or why a detected concentration would be re-set to a higher value. Intuitively, it seems that would introduce an artificial bias into the comparisons.	Clarification provided. It was key to have a single censoring limit for population-to-population comparison purposes. For a vast majority of the statistical evaluations, there was only a single MDL or MRL, and hence, it was not an issue here. Where there were multiple MDLs or MRLs, the range of the limits was narrow and the median limit was close to the highest limit. Based on these considerations, we believed that the use of a single censoring limit (i.e., a single "common-bottom-line") was an acceptable simplification. Given the narrow range of the censoring limits, the main conclusions of the statistical evaluations would be unaffected even if other methods were considered.
7.	**Section 8.3.1, sediment.** URS did not identify a significant difference in sediment for total PCBs in the forebay random samples relative to the reference area. In this case, DEQ recommends trying a nonparametric permutation test, which shows much stronger evidence for the mean forebay concentration being higher than the reference area, a result more consistent with the other media. Nevertheless, Figure L-2F clearly shows much greater variability in the forebay samples, consistent with the source of PCBs being localized to specific samples within the forebay. Based on all available lines of evidence, sediment remains a medium of concern. **Follow-up DEQ Response:** Response acceptable. As a point of clarification, DEQ provided the comment with the intent to clarify that we don't think the sediment data indicates an absence of impacts for total PCBs. We concur with the selection of PCBs as the primary COPC and CPEC.	Comment noted. Since the statistical comparison results for PCBs were not used in the COI selection process and PCBs were carried forward into the risk assessment, the additional level of analysis using nonparametric tests is not considered to be necessary. Comment noted.
8.	**Page 8-9, Section 8.3.3, downstream sediments.** This section acknowledges that the number of downstream samples (six) is too small for statistical comparison. The section should explain why only six samples were collected downstream of the dam relative to the forebay and reference areas, where 18 and 19 were collected.	Clarification provided. The following text from the RI/FS MP will be added to this section in the RI: "The objective of the downstream sampling was to determine whether or not contaminated sediments from the Forebay may have migrated and accumulated in the Downstream area and whether further sampling might (cont'd)

8. (cont'd)		(cont'd) be needed to assess the potential contamination. Unlike the Forebay and Reference areas, a non-statistical sampling approach was implemented Downstream, whereby areas of the river most conducive to sedimentation were targeted for sampling (depositional areas identified by lower river velocities) in an attempt to collect from locations most likely to be impacted by Forebay sediment transport. During the post-removal in-water sampling that occurred in March 2008, sediment was collected from six Downstream locations. These samples were collected from 1,200 feet below the dam to approximately 26,500 feet (5.0 miles) downstream of the dam. All Downstream sediment samples were analyzed for the same chemicals that were analyzed in the Forebay and Reference areas: semi-volatile organic compounds (SVOCs) (including polycyclic aromatic hydrocarbons [PAHs]), metals, polychlorinated biphenyls (PCBs) as Aroclors, total petroleum hydrocarbons (TPH), and sediment quality parameters (i.e., total organic compounds [TOC] and grain size). See Section 9.6.1, which provides an evaluation of the Downstream sediment."
9.	**Section 9.1.** The upper prediction limit or maximum concentration from the reference area is used to screen erodible soil. This evaluation should be included as part of a source control evaluation, which will be necessary for the landfill and sandblast areas. In that evaluation, contaminant concentrations in erodible soils and catch basin sediment should be evaluated against screening levels presented in Appendix D in the Stormwater Evaluation Guidance found at this website: http://www.deq.state.or.us/lq/cu/stmwtrguidance.htm. In the event that exceedances of these screening levels are found, a review of best management practices will be needed to evaluate how to reduce contaminant releases to the river.	Comment Noted. The mass wasting/erodible soil pathway will be further evaluated in the Upland BHHRA and BERA (see the response to General Comment 9), and source control measures will be considered during the Upland OU FS.
10.	**Section 9.3.2.** Some constituents in groundwater (metals, VOCs) appear to be discharging to the river. Please clarify where these may be exceeding ambient water quality criteria (AWQC). We note that AWQC exceedances are significant issues under Oregon Administrative Rule.	Clarification provided. The direction of groundwater flow beneath the Sandblast Area is to the north and northwest (Section 3.1.3 and Appendix D). Groundwater data from the Sandblast Area was evaluated in further detail in Sections 11.2.4.2.5 and 12.3.4.1.2 (see Tables M-18, M-19, N-15, and N-20). While in Section 9.3.2, the lowest of the selected human health- and ecologically-based SLVs are compared to water data from the Sandblast Area AOPC, the relevant human health and ecological SLVs (cont'd)

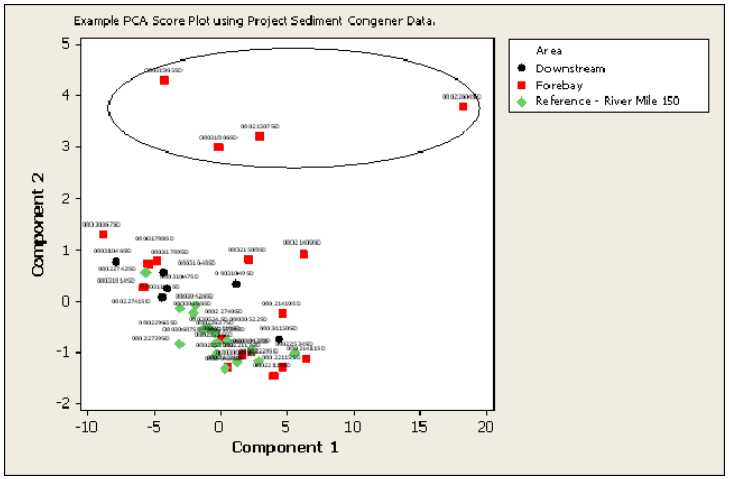
10. (cont'd)		(cont'd) are used separately in the HHRA (Section 11) and ERA (Section 12). In these risk assessment sections, the COIs in exceedances of the SLVs for humans and aquatic organisms are more thoroughly evaluated and discussed. The following excerpt is from the HHRA, Section 11.2.4.2.5: "Only arsenic was retained as a COPC for the bioaccumulation pathway, even though it was only marginally higher than upgradient arsenic concentrations (Table M-20). The bioaccumulation potential for the remaining chemicals was considered to be negligible since they were not supported by evidence of bioaccumulation in the River OU (Section 11.3.4). However, the potential for bioaccumulation is best evaluated by review of the River OU data. Since arsenic was not selected as a site-related COPC for any of the River OU media (Section 11.3.4), it was not retained as a site-related COPC for this discharge and bioaccumulation pathway at the Sandblast AOPC (Table 11-2)." Additionally, in Section 11.3.4.1.3 of the HHRA, surface water data is evaluated for the potable use pathway and no COPCs were identified. The following excerpt is from the ERA, Section 12.3.4.1.2: "The toxicity ratio for cis-1,2-dichloroethene is only slightly greater than 1.0 (at 1.12, Table N-15), and since this is the only CPEC with a detection above the benchmark, no further investigation is recommended to assess the potential for adverse effects to aquatic organisms or wildlife that could be exposed to surface water that has been impacted by COIs in groundwater of the Sandblast Area AOPC. Arsenic is the only bioaccumulative COI that was retained as a CPEC due to the lack of SLVs that address the dietary pathway." Based on the findings of the HHRA and ERA, no further evaluation of COIs in groundwater from the Sandblast Area is necessary. However, as described in the response to Specific Comment 12 (below), concentrations of PAHs in direct push groundwater samples from the Sandblast Area will be added to the groundwater screening tables (cont'd)

10. (cont'd)	**Follow-up DEQ Response:** Arsenic in groundwater should not be dropped for the groundwater discharge pathway at the Sandblast AOPC based on the determination that arsenic was not selected as a site-related CPEC for the River OU data. Contaminants in water discharging above ecological and risk-based levels on a point basis and a Q=1 should be retained as CPECs. This applies to the sandblast area and landfill AOPCs. (See General Comment 9 on upland groundwater transport).	(cont'd) (HHRA Tables M-17, M-18, and M-19 and ERA Tables N-15 and N-20) to address the sampling data gap for PAHs in monitoring well data for this AOPC. In addition, future sediment samples collected in the former removal areas and bass samples collected from the entire Forebay as part of the initial FS sampling effort (please see response to General Comment 6 above) will be analyzed for all metals and PAHs. Comment noted. Arsenic in groundwater from the Sandblast Area did not exceed the surface water SLV protective of aquatic organism exposed through direct contact based on the UCL and Q=1 (toxicity quotient of 0.0202; Table N-15) or the maximum detected concentration and Q=1 (toxicity quotient of 0.06). Arsenic is potentially bioaccumulative in aquatic tissues, but was only identified as a COI in crayfish collected from the Forebay (not a COI in clams, sculpin, or smallmouth bass). The maximum detected concentration in crayfish is lower than DEQ's bioaccumulation SLVs protective of fish/shellfish, birds, and mammals. Therefore, arsenic is not a CPEC in groundwater from the Sandblast Area based on the evaluation of direct toxicity and bioaccumulation.
11.	**Page 12-42, Section 12.5.4, fish and shellfish.** The comparison of cadmium, lead and mercury in forebay to reference sediment is somewhat confounded by the fact that cadmium, lead and nickel are elevated in the some of the reference area bass. The tissue levels should be used to determine whether these substances are CPECs. We believe that considering the overall evidence in tissue, reference tissue samples and upland sources, cadmium, lead, and mercury should be retained as CPECs in sediment.	Comment noted. Concentrations of cadmium in Forebay and Reference Area sediment and bass tissue are below DEQs suggested default background concentration for cadmium in sediment (Table B-1 of DEQ 2007) and the ATLs protective of humans and wildlife. Concentrations of lead in sediment and bass tissue from the Forebay and Reference Area exceed the default background concentrations and ATLs in some samples. None of the bass samples collected from the Forebay exceed ATLs for lead, and none of the bass samples collected from the Reference exceed wildlife-based ATLs for lead. Sediment and bass tissue concentrations of mercury from the Forebay and Reference Area also exceed the default background concentrations and ATLs in some samples. However, concentrations of mercury in sediment of the Forebay versus the Reference area, and in tissue of the Forebay versus the Reference Area, are very similar. See the response to Specific Comment 32 (below). (cont'd)

11. (cont'd)		(cont'd) In the absence of ATLs for nickel, the evidence to support a conclusion that nickel is elevated in tissue is unclear (it is possible that "mercury" was the intended COPC for this statement). Based on this information, it is unclear whether or not a source of cadmium, lead, and/or mercury originates from Bradford Island. Therefore, future samples collected in the former removal areas as part of the initial FS sampling effort (please see response to General Comments 3 and 6) will be analyzed for all metals. If a contaminant source does exist upstream, these contaminants could potentially migrate downstream and impact Forebay media. As per CERCLA guidance, it is legitimate to account for ongoing upstream sources that could contribute to a site, as it is impossible to maintain remedial goals that are below upstream concentrations.
	Follow-up DEQ Response: This comment is directed to a larger problem identified in Specific Comment 15 that the selected reference location does not meet the definition of background per DEQ guidance. This is shown by the elevations of COI in sediment and tissue (e.g. metals) in the selected reference location of Cascade Locks and the location of the sampling near known industrial activities. Please specify that the selected background location is in fact anthropogenic (EPA, 2002) because there are "natural and human-made substances present in environment as a result of human activities". The selected upstream area is not a background location as outlined in DEQ rule as "the concentration of hazardous substance, if any, existing in the environment in the location of the facility before the occurrence of any past or present release or releases." Therefore, following CERCLA Guidance, all COIs including metals above risk levels should be retained as COPCs for further evaluation. CERCLA Guidance, states that chemicals above risk levels that also may be above reference locations are not removed from the risk assessment, but rather the full risk of these chemicals are determined in the risk assessment. EPA 2002 states "when concentrations of naturally occurring elements at a site exceed risk-based screening levels, that information should (cont'd)	Comment noted. A new upstream reference location or the previous reference location mentioned in the comment will not be incorporated into the revised RI for the reasons previously described in the original response to this comment. Additionally, the Reference area represents ambient conditions upstream of the Bradford Island Forebay. This allows for the comparison of potential contaminate contributions from upstream sources, so that the Forebay contaminate contributions can be assessed more accurately.

11. (cont'd)	(cont'd) be discussed qualitatively in the risk characterization" and "the COPCs retained in the quantitative risk assessment should include those hazardous substances, pollutants, and contaminants with concentrations that exceed risk based screening levels." However, background metals can be evaluated using the previous selected background location at RM 147 (RF-91 through RF-110), since these samples are away from known sources and meet the definition of DEQ background.	
12.	**Section 9.3.2, Page 9-18.** This section states that groundwater monitoring was limited to three PAHs. Is this a typo? With respect to TPH and PAHs in groundwater, the text is unclear. Is TPH currently or reasonably likely to reach seeps and impact the Columbia River?	Clarification provided. Text will be added to this section clarifying that groundwater samples from soil borings at the Sandblast Area were analyzed for the full analytical suite, while the monitoring well groundwater samples were only analyzed for a subset of those COIs. All TPH analytes (DRO, GRO, and RRO) were measured in monitoring well samples collected from the Sandblast Area, and DRO and GRO were detected. As stated in Section 9.3.2, lack of PAH groundwater data from monitoring wells in the Sandblast Area introduces a data gap for this AOPC. Three PAHs (benzo[b]flouranthene, benzo[k]flouranthene, and phenanthrene) were analyzed for in groundwater samples collected from monitoring wells, and benzo[b]flouranthene and phenanthrene were detected in 1 of 20 samples (5% detection frequency). All PAHs were analyzed for in direct push groundwater samples, and several detections were reported in these samples. The direct push groundwater data are considered to be of low quality for risk assessment due to matrix interferences (i.e., influence of particulate-related concentrations in unfiltered samples) and were not utilized in the HHRA and ERA. Only the monitoring well data were included in the risk assessments, for which both filtered and unfiltered data are available. However, the direct push groundwater PAH data will be evaluated for the Sandblast Area in the revised screening level tables (HHRA Tables M-17, M-18, and M-19 and ERA Tables N-15 and N-20) to address the sampling data gap for PAHs in monitoring well data for this AOPC. This approach will result in an overestimate of exposure to PAHs in approach will result in an overestimate of exposure to PAHs in groundwater potentially discharging to the River OU (assumed to be more bioavailable for uptake) due to the presence of suspended particulates in the direct push samples. The uncertainties introduced in the risk (cont'd)

12. (cont'd)	(cont'd) **Follow-up DEQ Response:** DEQ agrees with the approach to use the direct push groundwater PAH data in order to address the sampling data gap for the monitoring wells. However, please clarify the decision rules for evaluation of the data, if there are exceedances of applicable criteria.	(cont'd) assessments by using direct push groundwater will be discussed in the revised text. Comment accepted. If the direct push groundwater data from the Sandblast Area exceed SLVs, and the resulting toxicity quotients (based on Q=1) are greater than 1.5, then additional samples will be collected from monitoring wells to provide a more meaningful evaluation of these PAHs. Given the influence of the suspended solids in these direct push samples on the PAH concentrations detected, which leads to an overestimate of exposure, if toxicity quotients are between 1 and 1.5, it may be determined that additional sampling is not necessary. The direct-push data for the sub-set of PAHs will also be compared to human health SLVs. If exceedances are noted, additional considerations such as whether these are carcinogenic PAHs, whether suspended solids and other parameters which may affect PAH concentrations are present and so on, will be considered and a recommendation will be developed as to whether additional sampling is warranted.
13.	**Section 9.0 figures.** The forebay PCB congener profile distribution charts are difficult to interpret. The main conclusion from these appears to be that the majority of the total PCB concentrations in each matrix are attributable to a subset of PCBs. As an alternative presentation, we recommend that within each media, principle component analysis (PCA) score plots be produced for all the randomly collected samples, and that you color code forebay versus reference area samples. These would show the relative similarities (and differences) of each of the sampling locations. For these score plots, a subset of individual samples that are relatively different (i.e., "end members") can be selected and homologue profiles plotted for this subset of samples. In this way, the homologue profiles of samples that are known to be relatively different can be compared and the forebay samples can be compared to reference samples. This may also provide insight in a visual manner into which congeners have accumulated into tissue and could therefore merit consideration in any future monitoring program. An example PCA score plot for sediment is included below showing distinctiveness of samples nearest to Bradford Island. Homologue profiles for selected samples in sediment and fish tissue might also be compared using 3-D bar charts, where the third (cont'd)	Comment noted. The multivariate PCA analysis may provide additional insight into the PCB congener profiles; however, the associated results/plots may be difficult to interpret, and at times, may require subjective judgment. At present, the PCB congener profile distribution charts were considered to be part of an exploratory data analysis (EDA) effort. Given that information regarding the source of PCB was available through other aspects of site investigation, additional PCB profiling analysis based on multivariate statistical analysis was not deemed to be necessary to complete the current remedial investigation.

13. (cont'd)	(cont'd) dimension is the analytical matrix, (i.e., sediment vs. tissue).  **Follow-up DEQ Response:** Response acceptable. DEQ agrees with the response, and understands the absence of a need to source profile in the remedial investigation. The comment was intended as a suggested method to create a focused subset of figures that might be more informative to illustrate relative similarities and differences between samples. We also note that source profiling may potentially become a more relevant issue in the future as declining PCB concentrations approach some level at which the project may be considered "complete". The source profile or congener-specific ratios could have utility as an additional line of evidence in addition to central tendency comparisons because of the possibility that there may be a component of central tendency sourced from the site release, and these methods may allow a more refined understanding of PCB congeners in the River OU.	Comment noted.
14.	**Page 9-4, groundwater, seeps, and /or surface water.** Frequency of detection should not be applied to water, because aquatic life standards apply on a point basis.	Comment noted. Since DEQ guidance (DEQ 2001 and DEQ 2010b) allows for the removal of COIs detected at a frequency of less than 5% from further consideration, the RI only dropped COIs in a given medium if there were 20 or more samples. See Tables I-1, I-2, and I-5 in Appendix I. Twenty or more water samples are available for COIs in Landfill groundwater (Table I-1) and a subset of COIs in Sandblast Area groundwater (Table I-2) and, therefore, only these datasets were subjected to the 5% detection frequency screening. As discussed in the (cont'd)

14. (cont'd)	(cont'd) **Follow-up DEQ Response:** As indicated, DEQ guidance discussion is pulled from EPA guidance (see also Specific Comment 25), and the intention of the Department is to use frequency detection screening in identifying potential errors associated with the sampling, not chemicals known to be associated with the site. As EPA 1989 states in the evaluation of frequency of detection that "chemicals expected to be present should not be eliminated. The risk assessor should consider whether the chemical is expected to be present based on historical data or any other relevant information (e.g. known degradation products of chemicals present at the site, modeling results)". The text goes on to say "a chemical that is infrequently detected in soil (a potential groundwater contamination source) probably should not be eliminated as a site contaminant if the same chemical is frequently detected in ground water. In addition, infrequently detected chemicals with concentrations that greatly exceed reference concentrations should not be eliminated". Spatial application should be broad, so as not to confound data distribution and CSM analysis. Any removal based on frequency of detection must provide an analysis as to why the detection is believed to be in error, and information of detections in other media (soil, groundwater, seeps, surface water, tissue, etc.).	(cont'd) response to Specific Comment 23, bioaccumulative COIs detected in less than 5% of groundwater samples collected from the Landfill and Sandblast Area were compared to dietary-based SLVs protective of aquatic biota when available (Appendix O, Tables O.3-1 and O.3-2) as a precautionary measure. Comment accepted. The 5% detection frequency screening only applied to soil and groundwater of the Landfill and Sandblast Area (and soil of the combined AOPCs), as these are the only two AOPCs with 20 or more samples. Furthermore, to address concerns regarding spatial application, the combined dataset for all four AOPCs was evaluated for wide-ranging receptors. In addition to the bioaccumulative COIs in soil and groundwater of the Landfill and Sandblast Area that were eliminated based on the 5% detection frequency screening but were evaluated for ecological risk in Appendix O as a precautionary measure, all COIs in these media (regardless of their potential to bioaccumulate) will be included in Appendix O. An explanation as to why their removal does not influence the findings of the ERA will be provided, and any connections between COIs in soil that may influence concentrations of these same COIs in groundwater will be discussed.
15.	**Page 9-4, forebay random sediment samples.** Because the source area around Bradford Island is not densely sampled, and there may be COIs that are relatively spatially localized, we believe that COIs should not be eliminated solely using the frequency of detection rule for River OU samples (sediment, tissue). For example, Aroclor 1260 and phthalates were removed on this basis even though they were detected in other datasets not included in the RI, but presented in Appendix G. These two COIs can be found in the outfalls that drain the sandblast area and are relevant for source control to the River OU. Thus, the Appendix G data should be considered in COI selection to identify those contaminants that may not be sufficiently widespread to be detected in the random samples, but do have an upland source and spatially localized impacts in sediment.	Clarification provided. The first sentence of the first bullet (regarding detection frequency) will be deleted and replaced with the following text: "1. *Frequency* – Although DEQ guidance (DEQ 2001 and DEQ 2010b) allows for the removal of COIs detected at a frequency of less than 5% from further consideration, none of the River OU media samples had greater than 20 samples. Therefore, none of the COIs detected in the River OU media were removed from evaluation due to detection frequency." Source control will be evaluated in the Upland BHHRA and BERA, and considered during the Upland OU FS. Please note, as discussed in response to General Comment 6, historical River OU data were not used in the RI, with the exception of the bass and sucker data.

15. (cont'd)	(cont'd) **Follow-up DEQ Response:** See response to General Comments 3 and 6.	(cont'd) Comment noted.
16.	**Use of frequency of detection rule.** Frequency of detection should not be applied to tissue analysis. Crayfish, clam, sculpin, and bass samples represent localized exposure areas that should be carried forward if the contaminant concentrations exceed SLVs regardless of frequency of detection.	Clarification provided. See the response to Specific Comment 15. Although DEQ guidance (DEQ 2001 and DEQ 2010b) allows for the removal of COIs detected at a frequency of less than 5% from further consideration, none of the River OU media samples had greater than 20 samples. Therefore, none of the COIs detected in the River OU media were removed from the evaluation due to detection frequency.
17.	**Page 9-26 and 11-25, mercury.** Please clarify why mercury is not selected as "site-related", as there is a source of mercury in the sandblast area Upland AOPC, concentrations in forebay tissues were elevated over reference, and exceeded human health based screening values. **Follow-up DEQ Response:** Please see response to General Comment 10 with respect to mercury. DEQ agrees with the proposed approach for additional mercury sampling.	Comment noted. See the response to Specific Comment 11. Concentrations of mercury in Forebay sediments were demonstrated to be below Reference Area sediment concentrations based on the population to population statistical comparison. Concentrations of mercury in other Forebay media, such as bass, are also similar to Reference Area concentrations (Forebay range = 0.071 to 0.512 mg/kg and Reference range = 0.0548 to 0.333 mg/kg). As per CERCLA guidance, it is legitimate to consider upstream sources that could contribute to a site, as it is impossible to maintain remedial goals that are below upstream concentrations. It is unclear whether or not a source of mercury, and other metals, originates from the Upland portion of the site, including at the Sandblast AOPC. Therefore, future samples collected in the former removal areas as part of the River OU initial FS sampling effort will be analyzed for all metals. Comment noted.
18.	**Page 9-29, Section 9.6.4.** This section describes a correlation analysis of three parameters: PCBs, total organic carbon and percent fines in sediment. We suspect a more useful correlation may be PCBs, TPH and PAHs. **Clarification of DEQ Response:** This comment was directed at correlations in sediment, not upland source control. Upland source control will not address further analysis that may be needed to assess in-water sediment.	Comment noted. See the response to General Comment 9 regarding Upland source control. Comment noted. The suggestion to correlate PCBs, TPH, and PAHs in sediment of the Forebay will be considered in the FS.

19.	**Section 9.3.3, hazardous materials storage area.** The report emphasizes VOC levels in soil gas in samples SB-10 and SB-12. These are north of the hazardous materials storage area (HMSA). Note that the highest PCE concentration in soil (420,000 ug/kg, per Table 5-4b) was found at soil boring SBB18, which is south of the HMSA. With this in mind, the soil VOC data should be considered in addition to the soil gas results when considering future remedial action decisions for this area. Table 5-4c also indicates that PAH concentrations in soil are particularly high in portions of the sandblast area.	Comment noted. Additional discussion of the Sandblast Area is provided in Section 11.2.4.2, in which further evaluation of these COPCs in the baseline HHRA is recommended.
20.	**Page 11-38.** The text states "five specimens of large-scale sucker, collected by USACE in 2006, were archived. They were collected from two locations, the south shore of Cascade Island and the south shore of Bradford Island. These samples will be analyzed for the range of bioaccumulative and other site-related COIs requested by DEQ." Are there additional largescale sucker that have not been analyzed? **Follow-up DEQ Response:** The response indicates "the specimens were composited in order to generate enough tissue mass for analytical testing". Please clarify; DEQ does not recall that tissue mass requirements were a concern for largescale sucker.	Clarification provided. There are no additional largescale sucker samples that have not yet been analyzed. The text above will be modified to indicate the following: "As discussed in Section 6.2.1, in June and August 2006, the USACE used one sucker composite sample from the Forebay (URS 2008c). The sucker sample is the composite of the five specimens from two locations that were collected by USACE in 2006. The specimens were composited in order to generate enough tissue mass for analytical testing. The analytical results of the composite sample are included in Table 6-6 and were considered qualitatively in the risk assessments." Clarification provided. As stated in the response, the five individual sucker specimens were composited so that all of analyses that were conducted on the other species could be performed on the sucker.
21.	**Page 12-5.** The soil exposure media for birds should also be evaluated using surface soil (e.g. 0-1 foot). An exposure soil horizon of 0-3 ft. would not normally occur for birds, and the use of a the deeper horizon may dilute out risk at the surface. For example, only evaluating truly surface soil would be an important evaluation in the sandblast area.	Clarification provided. As shown in Tables N-3, N-8, N-13, N-18, N-43, and N-45 of Appendix N, both soil depth intervals (0 to 1 and 0 to 3 feet bgs) were evaluated for all terrestrial receptors. The text in Section 12.2.2 (Page 12-5) will be clarified as follows (see text in italics): "Rooting depths for plants and burrowing depths for invertebrates and mammals were assumed to occur within the upper 3 feet of soil, and it will be assumed that all terrestrial receptors are exposed to soils from this depth interval. This is a conservative assumption for birds, which typically do not burrow and forage on the ground surface, and mammals that burrow are more likely to consume organisms that are exposed to soils below the surface. *For plants, soil invertebrates, birds, and mammals,* the Landfill and Sandblast Area AOPCs were evaluated for both the surface (0-1 foot bgs) and shallow (0 to 3 feet bgs) intervals."

22.	**Page 12-8, Section 12.3.2.2, assessment endpoints.** A higher trophic level mammal, such as fox or mink, should be included in the evaluation. Is there evidence that predatory mammals would not be feeding on the terrestrial mammals (shrew, etc) on the island? **Follow-up DEQ Response:** An upper trophic level terrestrial mammal should be used to represent this guild for the risk assessment. For the upland risk assessment, a scenario could be added (separate of the in water exposure area) that evaluates a mink exposed to the upland areas of Bradford Island. Alternatively, a separate receptor such as a fox could be added to represent this pathway. In water exposure to the mink does not address the upland pathway. Quantitative changes are required to the screening tables for the upland AOPCs.	Comment accepted. Protection of higher trophic-level mammals (such as mink) that may forage in the Upland OU will be added to the assessment endpoints described in this section. Since the SLVs for mammalian receptors as a generic receptor class were already used in the screening-level ERA, no changes to the quantitative evaluation are necessary. Clarification is needed on the last statement in this comment. Soil SLVs protective of mammals (as a generic receptor group) were already applied in the ERA for the Upland AOPCs; therefore, it is unclear what quantitative changes are required to the Upland screening tables. In regards to adding a large terrestrial mammal to the assessment endpoints for the Upland OU, this request will be incorporated in the revised ERA. As the Upland OU has been recommended for a Level III BERA, identification of a specific large mammal is needed for purposes of the BERA. According to Section 3.5 of the Level I Scoping Assessment that was performed for the Landfill (URS 2002), which included a thorough biological characterization of the Landfill and all habitats on the island, "large mammalian predators do not occur on the island." The only mammals on the island that are mentioned in the Scoping Assessment are small mammals (rodents) and feral cats: "Although the island harbors small mammals, feral cats, Canadian geese, and other bird species, the minimal amount of available habitat (~12 acres) makes it unsuitable for supporting viable populations of wildlife species with larger home ranges." For this reason, large mammals were not included in the assessment endpoints described in the approved RI MP (URS 2007). However, because mink are present in the area and could feasibly access the island and forage there, exposure by this species through consumption of rodents will be included in the Level III BERA. The following information was identified regarding the mink's diet: • Crayfish most important mink food in Columbia River study area, followed by fish, birds, and mammals; of 7 taxa of mammals eaten by mink, bushy-tailed woodrats, microtines (rodents that eat primarily grasses and forbs, and pocket mice consumed most frequently (Henny, Grove, and Hedstrom, 1996) (cont'd)

22. (cont'd)		(cont'd) • Prey of mink in Lower Columbia River include small mammals (e.g., muskrat), fish (including crayfish), and birds; diet varies by season and is localized (Lower Columbia River Bi-State Program, 1996) • Assumption of 15% crayfish and 85% fish used for Portland Harbor; many studies cited that demonstrate range of prey consumed by mink, including muskrats, fish, frogs, crayfish, small mammals, and birds found near water; region-specific studies on dietary proportions not available (Lower Willamette Group, 2007) • Assumption of 90% fish and 10% terrestrial food chain used for derivation of mammalian wildlife values for bioaccumulative chemicals; proportion of mink's diet strictly from terrestrial sources can vary from almost none to one third of diet (EPA 1995); • River in Michigan (year round diet) – 85% fish, 7% crustaceans and amphibians, 6% birds and mammals, 1% vegetation, and 1% unidentified (EPA 1993) Based on the information gathered regarding carnivorous (large mammal) predators in the Upland OU, the mink is the selected receptor based on likelihood of presence and sensitivity to environmental contaminants. To be conservative, a dietary composition of 15% small mammals from the Upland OU will be assumed as a first step, even though a lower proportion may actually be more realistic for site conditions (i.e., permanent water source; riverine habitat). In addition, contribution from crayfish and fish from the river will be considered to provide a more comprehensive evaluation of the chronic exposure dose to this species. EPA. 1995. Great Lakes Water Quality Initiative Criteria Documents for the Protection of Wildlife: DDT, Mercury, 2,3,7,8-TCDD, PCBs. Office of Water. EPA-820-B-95-008. March. EPA. 1993. Wildlife Exposure Factors Handbook, Vol. 1 of 2. Office of Health & Environmental Assessment. EPA/600/R-93/187a. December. (cont'd)

22. (cont'd)		(cont'd) Henry, C.J., R.A. Grove, and O.R. Hedstrom. 1996. Final Report, A Field Evaluation of Mink and River Otter on the Lower Columbia River and the Influence of Environmental Contaminants. February. Lower Columbia River Bi-State Program. 1996b. Final Report, Contaminant Ecology of Fish and Wildlife of the Lower Columbia River: Summary and Integration. April. Lower Willamette Group. 2007. Portland Harbor RI/FS Comprehensive Round 2 Report, Appendix G. February. URS 2002. Draft Level I Ecological Scoping Assessment and Human Health Problem Formulation, Bradford Island Landfill. Bonneville Dam, Cascade Locks, Oregon. April. URS. 2007. Remedial Investigation/Feasibility Study (RI/FS) Management Plan (MP), Bradford Island, Bonneville Lock and Dam Project, Cascade Locks, Oregon. September.
23.	**Page 12-11, Section 12.3.3.3, Identification of CPECs.** Comparison between background and the site should be done for inorganics only. Frequency of detection should not be used to screen out COIs associated with known sources at Bradford Island. While DEQ is in the process of phasing out the frequency-of-detection screen, the objective (as cited in the report) is to really identify COIs that are infrequently detected (less than 5 percent of samples), that may be artifacts in the data due to sampling, analytical, or other errors and need not be selected as COPCs (DEQ 2000, 2010). In addition, the mixture of sources, analytical results and the heterogeneity of the source material relative to the sampling confound this evaluation. COIs found in localized areas still need to be evaluated for small home range receptors or those exposed on a point basis (e.g. plants, invertebrates). In addition, in Tables 9-1 to 9-6 where soils and groundwater were evaluated for frequency of detection, the data summary statistics are omitted for those where detection frequency was less than 5 percent. Therefore, an evaluation on the magnitude and occurrence of these chemicals could not be made. Number of samples and concentration statistics should be presented for these COIs. Identification of CPECs in the Tables appears to be based on a screening that considers a mixture of human health and ecological SLVs. It is difficult to review the adequacy of the SLVs with these tables. A master table showing a (cont'd)	Clarification provided. As described in the second paragraph of Section 12.3.3.3, "The objective of the statistical analysis was to assess whether the mean <u>inorganic</u> COI concentrations in soil within each AOPC, as well as the mean soil COI concentrations for all four AOPCs combined, were significantly higher than the mean Reference Area concentrations." Use of the 5% detection frequency rule concurs with DEQ guidance (2001, 2010b). This step of the screening process was also described in the agreed upon RI/FS MP (URS 2007) and follows precedent that has been set in ERAs for other sites lead by DEQ, including the Level II Screening Assessment that was previously performed for the Landfill AOPC (comment letter from Matt McClincy, previous DEQ PM, to Mark Dasso, USACE PM dated November 4, 2004). Only a few media in specific AOPCs (e.g., soil and groundwater of Landfill and Sandblast Area) were subject to this step, due to the absence of 20 samples for most media per AOPC. This approach was not applicable for any of the River OU media. As a precautionary measure, bioaccumulative COIs detected in less than 5% of soil (0 to 1 foot bgs and 0 to 3 feet bgs) and groundwater samples collected from the Landfill and Sandblast Area, but detected at least (cont'd)

23. (cont'd)	(cont'd) comprehensive list of human health and ecological screening values for water, soil and sediment should be presented along with the selected SLV.	(cont'd) once, were compared to dietary-based SLVs when available (Appendix O, Tables O.3-1 and O.3-2). As shown in these tables, the only COI omitted on the basis of detection frequency and detected above the SLV is 4,4'-DDE in groundwater at the Landfill AOPC (Table O.3-1). However, 4,4'-DDE was only detected at a single well (MW-03; Figure 5-1) at a concentration of 0.00246 µg/L, and down gradient wells closer to the River were all non-detect for 4,4'-DDE. The non-detect MDLs for 4,4'-DDE, which range from 0.00195 to 0.1 µg/L, all exceed the surface water benchmark of 0.001 µg/L, indicating that the theoretically based SLV is lower than analytical methods can achieve. In addition, as discussed in Section O.1.2, the assumption that aquatic organisms are exposed to undiluted groundwater concentrations is highly conservative. No sensitive plants or invertebrates are known to exist at the Site and, therefore, no further assessment of the COPC selection process based on the 5% rule is necessary. The data summary and statistics tables for all analytes are presented in Appendix I. The tables in Appendix J provide all of the human health- and ecologically-based SLVs for all media evaluated in the RI. The selected SLVs are presented in these tables, as well as all sources of SLVs considered. In Section 9.0 (Nature and Extent), the lower of the final selected human health- and ecologically-based SLVs were used in the third step of the screening process, while in Sections 11 (HHRA) and 12 (ERA) only the human health- or ecologically-based SLVs were used, as appropriate, for the final selection of COPCs and CPECs, respectively.
	Follow-up DEQ Response: The appropriate exposure point concentration for plants and invertebrates is point by point and therefore frequency of detection over a larger area does not apply. Alternative information can be provided if a particular detected analyte is believed to be in error (e.g. see response to Specific Comment 14. DEQ requests that all COIs removed due to frequency of detection or Q=5 should be added to tables of data summary statistics as this provides important information on detections across different media.	Comment accepted. See the responses to Specific Comment 14, and Specific Comments 24 and 25. The tables presented in Appendix I provide summary statistics for all AOPCs, including detection frequency.

24.	**Page 12-12, Section 12.3.3.3.1 and 12.3.3.3.2.** A multiplier of 5 should not be used for water media. (Refer to the note at the beginning of section II of DEQ's *Guidance for Ecological Risk Assessment: Levels I, II, III, IV*: "In Task 9(c), page II-8 of the Level II Ecological Risk Assessment Guidance, please note that the Q = 5 guidance applies only to soil, and does not apply to water and sediment. Until other screening level values become available, water and sediment screening should be done using the SLVs provided in Tables 1 and 2.") This reason for the multiplier in DEQ guidance is to estimate a lowest observed effect concentration (LOAEL) based on a no observed effect concentration (NOAEL). NOAELs are used to screen threatened and endangered species, whereas LOAELs are used to screen for population level effects. Water SLVs are typically based on AWQC values, which are community-based toxicity values. For plants and invertebrates, the toxicity values are more commonly based on Maximum Acceptable Toxicant Concentrations (MATC) and therefore the 5 x factor does not apply. (cont'd)	Comment regarding first part accepted (about aquatic organisms and benthic invertebrates exposed to water/sediment), and comment noted regarding second part (about terrestrial plants and invertebrates exposed to soil). For aquatic and benthic organisms, Q=1 will be used to identify CPECs, and Q=5 will be maintained to identify CPECs for terrestrial plants and invertebrates**.** Toxicity ratios based on both Q=1 and Q=5 were provided in the screening tables created for soil, water, and sediment for plants and soil invertebrates, aquatic organisms, and benthic invertebrates, respectively. To accommodate DEQ guidance, the columns presenting toxicity ratios based on Q=5 will be deleted from the water and sediment tables for aquatic organisms and benthic invertebrates. Identification of CPECs for aquatic organisms is already based on Q=1 and, therefore, the findings for water will not change (e.g., Table N-5). Additional CPECs may be identified for benthic invertebrates, as Q=5 was used to identify CPECs for this receptor group. Based on the absence of threatened and endangered, or otherwise protected, species in the Upland OU, use of a Q=5 to identify CPECs for plants and soil invertebrates complies with DEQ guidance (2001) and the agreed upon RI/FS MP (URS 2007). This approach also follows precedent that has been set in ERAs for other sites led by DEQ, including the Level II Screening Assessment that was previously performed for the Landfill AOPC (comment letter from Matt McClincy, previous DEQ PM, to Mark Dasso, USACE PM dated November 4, 2004). Additionally, plant and soil invertebrate SLVs are based on different toxicity endpoints depending on the SLV source, and mainly include the EcoSSLs derived from a geometric mean of the effective concentration that affects 20% of the test population (EC_{20}), effective concentration that affects 10% of the test population (EC_{10}), or MATCs (EPA 2005), or DEQ's SLVs derived from an EC_{20} (DEQ 2001; Efroymson et al. 1997). Plant and soil invertebrate SLVs from these sources are intended for screening purposes and are intentionally conservative. No additional evaluation for plants or soil invertebrates is warranted for this site. (cont'd)

24. (cont'd)	(cont'd) **Follow-up DEQ Response:** A Q=5 should not be used for plant and invertebrate SLVs based on MATCs (Maximum Acceptable Toxicant Concentrations). A Q of 5 can be used for SLVs derived with a no observed adverse effect level (NOAEL) where threatened and endangered species are not present.	(cont'd) Comment accepted. The SLVs potentially based on MATCs (i.e., the geometric mean of the NOAEL and LOAEL) are EPA's EcoSSLs for the following COIs: arsenic, cadmium, cobalt, copper, lead, manganese, nickel, pentachlorophenol, selenium, silver, zinc, Total LPAHs, and Total HPAHs. Although DEQ's 2001 guidance explicitly states that a Q=5 may be used for species that are not threatened or endangered, and does not exclude plants and soil invertebrates, a Q=1 will be used for these receptor groups. However, the concept of using LOAEL-based benchmarks for non-threatened and endangered plants and soil invertebrates will be incorporated in the weight of evidence for assessing risk to these receptor groups.
25.	**Page 12-13, Section 12.3.4.1.1, landfill AOPC – Individual and multiple CPEC Table N-1** and Table O.3-10**:** • Plants: For plants, all COIs should be screened on a sample by sample basis, consistent with the appropriate exposure point concentration. o Plant values should not be multiplied by 5 since they are based on maximum acceptable toxicant concentrations. • Soil Biota: o TPH: Use 100 mg/kg for gasoline range and 200 mg/kg for diesel range TPH screening levels (Washington DOE, MTCA Table 749-3). o Eco SSL (soil screening level) values for Total LPAHs and Total HPAHs should have been used for evaluating each individual PAH and the total values. The values are 29 mg/kg total LPAHs and 18 mg/kg total HPAHs. This will change the results of the risk screening for individuals. • Birds: o SLVs: If a national Eco SSL is available, this value should be used instead of DEQ Level II SLVs. This was discussed in the planning process. This will change the SLVs for lead and zinc. (cont'd)	Plants: Comment noted. Maximum COI concentrations were used to assess risk to plants per ERA guidance (DEQ, 2001). This approach also follows precedent that has been set in ERAs for other sites lead by DEQ, including the Level II Screening Assessment that was previously performed for the Landfill AOPC (comment letter from Matt McClincy, previous DEQ PM, to Mark Dasso, USACE PM dated November 4, 2004). Neither DEQ nor EPA guidance requires the screening level risk assessment to be conducted on a sample by sample basis. o Comment noted. See the response to Specific Comment 24. • Soil Biota: o Comment noted. This is not one of the SLV sources identified in the 22 April 2010 Memorandum (see page 3). Individual components of TPH that represent the most toxic chemicals contained in petroleum mixtures (i.e., PAHs, metals, VOCs) were screened to assess risk to soil biota for the reasons described in Section O.3.1.5. o Comment noted. The screening of soil biota included the screening of individual PAHs to the LPAH and HPAH SLVs; however, none of the individual SLVs exceeded the total SLVs. See Tables N-2 and N-12. (cont'd)

25. (cont'd)	(cont'd) o DDT and metabolites (DDE and DDD and total DDX): There is an EPA Eco SSL available of 0.093 mg/kg, which should have been used. This was discussed during planning. This will change the results of the screening. o Eco SSL values for Total LPAHs and Total HPAHs should have been used for each individual PAH and the total values. The values are 29 mg/kg total LPAHs and 18 mg/kg total HPAHs. This will change the results of the risk screening for individuals. o TPH: Use 5,000 mg/kg for gasoline range and 6,000 mg/kg for diesel range, except that the concentration shall not exceed residual saturation at the soil surface (WA DOE, MTCA Table 749-3). • Mammals: o Butyltins: A Region 5 Ecological Screening Level is available for total butyltins for a shrew: 7,620 ug/kg. o DDT and metabolites (DDE and DDD and total DDX): There is an EPA Eco SSL available of 0.021 mg/kg, which should have been used. This was discussed during planning. o TPH: Use screening levels of 5,000 mg/kg for gasoline range and 6,000 mg/kg for diesel range, except that the concentration shall not exceed residual saturation at the soil surface (WA DOE, MTCA Table 749-3). o PCBs: DEQ's Level II SLVs do not address bioaccumulation. Therefore, they can only be used to address direct toxicity. The data must also be screened based on a bioaccumulation value. EPA Region 5 ecological screening levels include a SLV of 0.332 ug/kg for the shrew. ORNL PRGs should also be considered. The PRG for the shrew is 0.371 mg/kg. (cont'd)	(cont'd) • Birds: o Clarification provided. EPA Eco SSLs were the preferred source of SLVs for terrestrial receptors; however, for lead and zinc (among other metals) the reference area UPL was selected as detailed in Appendix J of the RI (higher of SLV and reference UPL for inorganics). See Table J-5 in Appendix J. o Clarification provided. EPA Eco SSLs were the preferred source of SLVs for terrestrial receptors. The EPA Eco SSL for DDT and metabolites was used in the avian screening. See Table J-5 in Appendix J. Also see Tables N-3 and N-13. o Clarification provided. There are no EPA Eco SSLs for PAHs available for birds. The SLVs listed in this comment are for soil invertebrates. Based on discussions with Jennifer Peterson, as documented in an email from Usha Vedagiri to Paul Seidel and Jennifer Peterson (December 10, 2009), PAHs were dropped from quantitative risk estimation for all bird receptors due to the lack of reliable TRVs. o Comment noted. This is not one of the SLV sources identified in the 22 April 2010 Memorandum (see pages 3 and 5). Also see Table J-5 in Appendix J. Individual components of TPH (the most toxic chemicals contained in petroleum mixtures) for which reasonably reliable SLVs are available (i.e., metals, SVOCs) were screened to assess risk to birds for the reasons described in Section O.3.1.5. • Mammals: o Comment noted. This is not one of the SLV sources identified in the 22 April 2010 Memorandum (see pages 3 and 5). Also see Table J-5 in Appendix J. (cont'd)

25. (cont'd)	(cont'd) o Since EPA Region 5 provides additional SLVs for soil, these should be used in evaluating the data: ▪ Bis (2-ethylhexyl phthalate) is 0.95 mg/kg. ▪ Di-n-butyl phthalate 0.150 mg/kg di-n-octyl phthalate 709 mg/kg ▪ Diethyl phthalate 24.8 mg/kg ▪ Butylbenzyl phthalate 0.239 mg/kg	(cont'd) As stated in Section 12.3.5 of the RI and in Section O.3.1.6 of Appendix O, those COIs without dietary based SLVs (listed in Table O.3-10) were retained as CPECs for the Landfill and Sandblast Area AOPCs and warrant further consideration for birds and mammals in the Level III BERA for the Upland OU. EPA Region 5 TRVs, as well as other sources of TRVs, and their uncertainties will be considered in the BERA. o Clarification provided. EPA Eco SSLs were the preferred source of SLVs for terrestrial receptors. The EPA Eco SSL for DDT and metabolites was used in the avian screening. See Table J-5 in Appendix J. Also see Tables N-4 and N-9. o Comment noted. This is not one of the SLV sources identified in the 22 April 2010 Memorandum (see pages 3 and 5). Also see Table J-5 in Appendix J. Individual components of TPH (the most toxic chemicals contained in petroleum mixtures, i.e., PAHs, metals, VOCs) were screened to assess risk to mammals for the reasons described in Section O.3.1.5. o Clarification provided. EPA Region 5 SLVs are not one of the SLV sources identified in the 22 April 2010 Memorandum (see pages 3 and 5). ORNL PRGs, which do account for dietary exposure, were used in the ERA, and the PRG for PCBs of 0.371 mg/kg was the selected SLV for evaluating risk to mammals. See Table J-5 in Appendix J. Also see Tables N-4 and N-9. o Comment noted. EPA Region 5 SLVs are not one of the SLV sources identified in the 22 April 2010 Memorandum (see pages 3 and 5). See Table J-5 in Appendix J. As stated in Section 12.3.5 of the RI and in Section O.3.1.6 of Appendix O, those COIs without dietary based SLVs (listed in Table O.3-10) were (cont'd)

25. (cont'd)	(cont'd)	(cont'd) retained as CPECs for the Landfill and Sandblast Area AOPCs and warrant further consideration for birds and mammals in the Level III BERA for the Upland OU. EPA Region 5 TRVs, as well as other sources of TRVs, and their uncertainties will be considered in the BERA.
	Follow-up DEQ Response:	
	• **Appropriate exposure point concentration.** For "plants, aquatic, and soil invertebrates that are immobile or nearly immobile, the maximum detected concentration (MDC) in soil or sediment is the appropriate value for comparison" to the screening level value (DEQ, Guidance for Ecological Risk Assessment: LEVELS I, II, III, IV, 2001). Therefore, screening must be completed on a sample-by-sample basis. The screening should identify which samples and how many samples exceed screening levels.	Comment noted. The MDC was used as the EPC for immobile or nearly immobile receptors, as per the guidance. The guidance does not state that a sample by sample comparison is necessary for all COIs, especially if the MDC does not exceed the SLV. Figures were created illustrating SLV exceedances for immobile receptors for many CPECs; primarily those CPECs with elevated concentrations at more than one sample location (e.g., Figures 12-6, 12-7, 12-11, 12-12, 12-16, and 12-17).
	• **Additional SLVs.** It was not possible to identify the complete list of COIs and SLVs in upfront discussions without submission of a work plan screening level table for DEQ review. Based on the risk assessment, these additional SLVs are presented here and allow for COIs to be evaluated in a risk based context. Unless there is a technical problem with the cited SLV sources, these should be used in the risk assessment. Uncertainties can be discussed in the uncertainty section.	Comment accepted. The additional SLVs will be used in the absence of a value that was already included in the hierarchy of sources approved by DEQ prior to completion of the RI/RA, with the exception of the WA DOE SLVs for TPH. In other words, the SLVs recommended by DEQ will be used for COIs that were retained as CPECs based solely on the fact that a SLV was not available. Due to the low confidence in SLVs for TPH for purposes of blanket application to sites with petroleum hydrocarbons, the chemical indicator approach whereby the most toxic components of TPH mixtures (e.g., VOCs and PAHs) are used to assess risk will be maintained. If the potential for risk is demonstrated for the indicator chemicals, then an evaluation of TPH results along with results for these indicator chemicals will be performed in the FS to confirm co-location.
	• **DDT and metabolites for birds and mammals.** The original comment indicated that the SLV should be compared to a Total DDX value (total of all DDD, DDE and DDT isomers) and not just comparisons of individual isomers to the SLV. Please revise.	Comment accepted. All detected DDT isomers in soil of the Landfill and Sandblast Area will be summed to generate a value for Total DDTs, which will be compared to the receptor-specific EcoSSLs.
	• **PCBs.** Agree with response.	Comment noted.

26.	**Table N-5, Identification of CPECs in Groundwater, Seep Water and Surface Water.** Please use the following hierarchy of SLVs for water: • 1.) National Ambient Water Quality Criteria (NAWQC), hardness adjusted to 25 mg/L calcium carbonate for hardness dependent COIs • 2.) Tier II Chronic Values from Suter and Tsao, 1996 (ORNL) 3.) EPA, 2003. Final Chronic Values (FCV) for PAHs. The outdated DEQ values for acenaphthene and naphthalene should not be used. • 4.) EPA, 2006b, EPA Region III BTAG, Freshwater Screening Criteria References: Suter and Tsao, 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision EPA, 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. Table 3-4 • EPA, 2006, Region III BTAG, Freshwater Screening Criteria, http://www.epa.gov/reg3hwmd/risk/eco/btag/sbv/fw/R3_BTAG_FW_Benchmarks_07-06.pdf **Follow-up DEQ Response:** • National Ambient Water Quality Criteria must be hardness adjusted. Please revise. (cont'd)	Comment noted. This is not the agreed upon hierarchy for water SLVs, as presented in the 22 April 2010 Memorandum (see pages 3 and 6). However, the agreed upon hierarchy, which is provided in Section J.2.3 of Appendix J, is similar to the hierarchy described in this comment and the latest NAWQC (EPA 2009) were the preferred source of SLVs for water. Comment accepted. The AWQC for cadmium, chromium, copper, lead, nickel, and zinc will be adjusted for a site-specific mean hardness value of 60 mg/L (as calcium carbonate). This mean hardness value is based on 11 surface water samples collected in April 2003: 8 from the Forebay (pre-sediment removal), 1 from the vicinity of Goose Island, and 2 from the former reference location (RM 147). Hardness data for these 11 samples range from 56 to 64. The selected hardness value of 60 mg/L is supported by a 2008 USFWS study that reported a mean hardness value for the Columbia River of 64 mg/L. (cont'd)

26. (cont'd)	(cont'd) • DEQ's outdated values for acenaphthene and naphthalene should be replaced with risk based values. These are currently not listed in DEQ's table 33A. ORNL Tier II values should be used for these chemicals instead. • National Ambient Water Quality Criteria for isomers of DDT apply in addition to individual isomers or congeners. Therefore, the sum of DDT, DDE and DDD should be screened against 0.001 ug/L.	(cont'd) USFWS. 2008. Columbia River Basin Asian Carps Risk Evaluation. February. Comment accepted. There is no Tier II chronic value for acenaphthene, only for naphthalene (Suter and Tsao, 1996). However, the more up-to-date freshwater chronic values presented in EPA 2003 will be used as SLVs to be protective of aquatic biota: acenaphthene (55.85 ug/L) and naphthalene (193.5 ug/L). Comment accepted. All detected DDT isomers in groundwater of the Landfill and Sandblast Area will be summed to generate values for Total DDTs, which will be compared to the chronic AWQC.
27.	**Page 12-5, Section 12.3.4.1.2, sandblast area AOPC (Tables N-11 through N-15).** Please refer to the comments for the landfill area on SLVs.	Comment noted. See the responses to the SLV-related comments for the Landfill AOPC above.
28.	**Page 12-42, Section 12.5.4, Benthic Invertebrates.** The removal of the sediment datasets except the random 18 samples reduces the areas that can be evaluated for benthic invertebrates. Sediment pore-water concentrations and river sediment at outfalls are relevant for butyltins but not included in the screening. For example see Table G-2e (dibutyltin and monobutyltin detected in porewater at 0.0820 ug/L and 0.570 ug/L, respectively) and Table G-7 as well as samples SBDS-18, SBDS-19, SBDS-24. At S1-43, dibutyltin was found at 4.60 ug/kg and tributyltin at 13 ug/kg. **Follow-up DEQ Response:** Please see response to Specific Comment 3 and 6. Areas outside the former removal action areas must be considered.	Comment noted. As discussed in the response to General Comment 6, initial FS samples collected in the former removal areas as part of the River OU FS will be analyzed for butyltins to better characterize this area of the Forebay. These data will be especially useful for understanding exposure conditions for the benthic community adjacent to the island. Comment noted. See the responses to General Comments 3 and 6.
29.	**Page 12-42, Section 12.5.4, Table N-50, Aquatic Organisms.** Please see comments above for groundwater / seep water for the hierarchy for water SLVs.	Comment noted. See the response to the SLV comments for groundwater/seep water, above (Specific Comment 26).
30.	**Page 12-42, Section 12.5.4, Table N-51, Fish and Shellfish:** (cont'd)	• Comment accepted. Please see the responses to General Comments 11 and 12, above (TEQs will be included in the risk (cont'd)

30. (cont'd)	(cont'd) • Dioxin-like PCB congeners in tissue need to be screened on a total TEQ basis against the 2,3,7,8-TCDD value in DEQ guidance for aquatic biota of 0.00646 ug/kg or 6.46 ng/kg. TEQ needs to be calculated for each sample. If the total TEQ screens in, then all dioxin-like congeners need to be carried forward. In Table N-51 an SLV of 430 mg/kg is used for all dioxin-like congeners and total PCBs, which inappropriately screens out PCBs. All dioxin-like congeners should be screened; Table N-51 only has a reduced list. • PAHs: DEQ's PAH screening list was developed based on PAHs that are detected regionally. However, PAHs detected on a site-specific basis in tissue are considered bioaccumulative. • The largescale sucker data are presented in Table 6-6a but are not included in the screening tables or conclusions. Even though there is only one composite sample of these fish, these data are appropriate for a screening level risk assessment and should be added to the screening tables for fish and piscivorous birds and mammals. • Sculpin analysis was limited to four metals (arsenic, cadmium, lead and mercury) and PCBs. These were not analyzed for PAHs or phthalates. We acknowledge that this was due to limited availability of sculpin. However, this represents a significant data gap. During future monitoring, an effort should be made to collect and analyze sculpin for all COIs (metals, PAHs, TPH, phthalates and PCBs).	(cont'd) assessment and will be screened against the TEQ SLV). Similar methodology used to calculate the sum 209 Congeners total will be used to calculate the TEQs based on all 12-dioxin like congeners. To clarify, the SLV of 430 µg/kg (i.e., DEQ's CTL for total PCBs as Aroclors) was used to screen total PCBs and the dioxin-like PCB congeners in the absence of CTLs for each individual dioxin-like PCB congener. In the revised Tables N-51 (Forebay fish/shellfish screening) and N-71 (Goose Island fish/shellfish screening), the SLV of 0.00646 µg/kg for the total TEQ based on 2,3,7,8-TCDD will be compared to the total PCB TEQ concentration. The individual dioxin-like PCBs concentrations will not be screened against the SLV for total PCBs of 0.43 µg/kg, but the concentrations of the individual dioxin-like PCBs will remain in the table for informational purposes. • Clarification provided. As shown in Tables J-6 and J-7, all PAHs were identified as bioaccumulative, except naphthalene, based on DEQ and EPA guidance and following the agreed upon approach for identifying bioaccumulative COIs in the 22 April 2010 Memorandum (see page 8). • Comment noted. As agreed upon and outlined in the 22 April 2010 Memorandum, the single sucker composite was evaluated qualitatively in the screening level RAs (see pages 12 and 13). In Table O.1-1 of Appendix O, the sucker data were compared to the smallmouth bass data collected from the Forebay to verify that COI concentrations in bass are higher than in suckers. Of the 58 COIs measured in both bass and sucker tissue (metals, PCBs as congeners and Aroclors, and SVOCs, including PAHs), nine were detected at a higher concentration in sucker tissue based on a comparison of the maximum detected concentration in bass versus the concentration in the sucker sample (PCB 169, (cont'd)

30. (cont'd)	(cont'd) **Follow-up DEQ Response: Largescale sucker.** The largescale sucker should be included as a receptor of concern, just as bass and sculpin, and screened in the risk assessment. Since this species is a separate receptor of concern, it should be included in the main document and not considered only in the uncertainly section. Largescale sucker tissue concentrations should be compared to both DEQ critical tissue levels (CTLs) and acceptable tissue levels (ATLs).	(cont'd) benzo[k]fluoranthene, indeno[1,2,3-cd]pyrene, pyrene, aluminum, cadmium, cobalt, lead, and vanadium). With the exception of PCB 169, which was not detected in bass tissue or in any other media sampled in the Forebay or the upstream Reference Area, the concentrations of the remaining eight COIs in sucker tissue are remarkably similar to the maximum concentrations in bass tissue. A screening evaluation of the sucker data will be added to the uncertainty section in the revised RI (Appendix O). On this basis, it is assumed that evaluation of bass, which are expected to exhibit higher site fidelity, is assumed to be protective of humans and wildlife that consume fish. • Comment noted. Appropriate future monitoring, if any, will be determined as part of the River OU FS. Comment noted. Large-scale sucker tissue concentrations will be compared to both CTLs and ATLs, and this evaluation will remain in Appendix O. The large-scale sucker was not one of the fish species identified for inclusion in the RAs in the RI/FS MP, but was analyzed at the specific request of DEQ after the RI/FS MP was approved. It was agreed that this species would be analyzed to verify the assumption that the smallmouth bass is the most appropriate and conservative species for purposes of the RA, and this agreement was upheld by including an evaluation of the sucker data in the uncertainty section.
31.	**Page 12-43, 12-44, Piscivorous Birds, Tables N-52-N-56.** Total dioxin TEQ for birds, mammals and fish needs to be compared to the 2,3,7,8-TCDD screening level for each species group in DEQ guidance (this comment applies to all tables) including sediment and acceptable tissue levels (ATLs). ALL dioxin-like PCB congeners need to be carried forward where TEQ exceeds the SLV. ALL 12 dioxin-like congeners (not a reduced list of 7) need to be included and a total TEQ for birds, mammals and fish calculated. If total TEQ screens in, then all dioxin-like congeners need to be carried through the screening. Analytes detected in tissue should not be screened out based on a comparison between site and reference <u>sediment</u>. Instead, tissue-to-tissue comparisons (cont'd)	Comment noted. Please see the response to General Comments 11 and 12, above (TEQs will be included in the risk assessment). Please see the responses to General Comments 3 and 6 and Specific Comment 11, which indicate that initial FS samples collected in the former removal areas as part of the River OU FS will be analyzed for all metals. None of the bass samples collected from the Forebay exceed ATLs for lead, and the evidence to support a conclusion that nickel is elevated in tissue is unclear considering the absence of ATLs for nickel. It is unclear whether or not a source of nickel or lead originates from the site, and future sampling efforts are planned to investigate this issue. (cont'd)

31. (cont'd)	(cont'd) should be made between an appropriate background area and site. However, tissue comparisons are confounded for this site given that the selected reference area is elevated in metals (e.g., smallmouth bass nickel concentrations were detected up to 1,480 ppb, and lead was found up to 1,810 ppb). • TEQ from all dioxin-like PCB congeners needs to be calculated and screened against the 2,3,7,8-TCDD screening level sediment SLVs and tissue ATLs. • Table N-53 and N-54: The only tissue compared to bird ATLs are smallmouth bass. Bird exposure to other tissue such as sculpin, crayfish and largescale sucker should have been evaluated. Birds other than osprey and eagle will feed on crayfish and provide different spatial resolution than the bass. Largescale sucker data, while more limited, provides additional information on other guilds of fish that have also have a different habitat use than the bass. **Follow-up DEQ Response: Identification of tissue COPCs.** As mentioned in previous comments, uncertainties related to the use of only forebay-wide sediment data in the risk assessment results in uncertainty in evaluations between sediment and tissue. Smallmouth bass primarily use the habitat around the island, but contaminants detected in tissue were not evaluated using co-located sediment data from the source areas. Therefore, COPCs in tissue cannot be eliminated based only on the fact that they are not also determined to be a forebay-wide sediment COPC.	(cont'd) • Comment accepted. Please see the responses to General Comments 11 and 12, above (TEQs will be included in the risk assessment). • Comment accepted, in part. Although the approach used to evaluate aquatic-dependent birds concurs with the methodology for the ERA described in Appendix C of the RI/FS MP (URS 2007), sculpin and crayfish will be added to the screening tables for birds. Physical conditions in the river may hinder access to these food sources in many areas of the Forebay, including the northshore of Bradford Island, but wading birds (e.g., heron) could forage in areas along the Forebay shoreline where water is shallower and moves slower. Please see the response to Specific Comment 30 regarding evaluation of the largescale sucker sample. Comment noted. Regardless of the phased screening approach used to identify COPCs and CPECs in tissue, all chemicals will be analyzed for in sediment and clams collected from the north side of the island and bass tissue collected from the Forebay and Reference Area (PCBs [Aroclors and congeners], metals, PAHs, pesticides, butyltins, and SVOCs). If the results of these analyses indicate a potential source of contamination for tissue that was overlooked based on evaluation of the random Forebay datasets included in the RI/RA, the list of tissue COPCs and CPECs may be modified to reflect the new information. All chemicals detected in tissue based on the results of the forthcoming pre-FS sampling effort that are greater than DEQ's ATLs and CTLs will be considered for continued monitoring in the FS.
32.	**Page 12-44, Piscivorous Mammals, Tables N-57 through N-58:** • Phthalate screening levels are not available in DEQ's bioaccumulation guidance. What is the reference for these SLVs? • TEQ from all dioxin-like PCB congeners needs to be calculated and screened against the 2,3,7,8-TCDD screening level sediment SLVs and tissue ATLs. (cont'd)	• Clarification provided. Please refer to Section J.2.4 of Appendix J, which describes the ATLs that were calculated for phthalates detected in crayfish and smallmouth bass. These ATLs were estimated by applying DEQ's methodology for ATL development (2007) and using mammalian TRVs from the Oak Ridge National Laboratory (Sample et al 1996) to calculate ATLs for piscivorous mammals (see Tables J-3). Mink and (cont'd)

32. (cont'd)	(cont'd) • Mercury was significantly higher in site bass tissue when compared to the reference area. Therefore, mercury should be retained as a COPC in future sampling. • PAHs detected in fish and shellfish tissue should be evaluated with appropriate toxicity information. The use of pyrene as a surrogate for HPAHs is not representative of the toxicity of the HPAH group. EPA Eco SSL TRVs should be used to develop an acceptable tissue levels applied to tissue concentrations for protection of mammals. For example, the Eco SSL TRV is 65.6 mg dw/kg bw/d [milligrams as dry weight per kilograms of body weight per day] for LPAHs and 0.615 mg dw/kg bw/d for HPAHs.	(cont'd) great blue heron were used as endpoint species to be consistent with the ATLs used from DEQ's guidance (2007); exposure factors for the mink and heron from DEQ's guidance were used. • Comment accepted. Please see the responses to General Comments 11 and 12 (TEQs will be included in the risk assessment). • Comment noted. See the response to Specific Comment 11. Concentrations of mercury in Forebay and Reference Area sediment (Forebay range = 0.008 to 0.373 mg/kg and Reference range = 0.041 to 0.225 mg/kg; Table L-4) and bass (Forebay range = 0.071 to 0.512 mg/kg and Reference range = 0.0548 to 0.333 mg/kg) are very similar, and sediment concentrations of mercury in the Forebay were demonstrated to be below Reference Area sediment levels. To better understand the concentrations of mercury in the former removal area, initial FS samples collected as part of the River OU FS will be analyzed for mercury (see the responses to General Comments 3 and 6). The smallmouth bass samples that will be collected from the Forebay and Reference Area as part of this effort will also be analyzed for mercury. As per CERCLA guidance, it is legitimate to consider upstream sources that could contribute to a site, as it is impossible to maintain remedial goals that are below upstream concentrations. • Comment noted. This is not the agreed upon SLV screening approach based on discussions with Jennifer Peterson, as documented in an email from Usha Vedagiri to Paul Seidel and Jennifer Peterson (December 10, 2009). Since the detected concentrations of PAHs in fish and shellfish are so low, it is unlikely that utilizing a different surrogate mammalian TRV would result in different conclusions in the ERA. The current toxicity ratios, or R_{Bacs}, for mammals based on consumption of crayfish, sculpin, and bass from the Forebay containing PAHs and protection at the individual level range from $1.2x10^{-8}$ to (cont'd)

32. (cont'd)		(cont'd) 0.00006. The R_{Bacs} for mammals calculated from Goose Island crayfish and sculpin tissue concentrations range from $1.2x10^{-8}$ to $4.3x10^{-6}$. In addition, the EcoSSL TRVs were compiled by EPA from a database of TRVs in which aquatic-related studies on mammals (e.g., mink) were specifically omitted from the final list of TRVs used to ultimately derive the TRV that was incorporated into the EcoSSLs. EPA specifically states that the "wildlife TRVs are derived for use in assessments conducted for a terrestrial rather than aquatic environment" (EPA 2005). For this reason, using the EcoSSL TRVs for mammals exposed to HPAHs and LPAHs is not expected to reduce the level of uncertainty in the assessment of risk to mammals from consumption of aquatic fish/shellfish tissue. The Portland District believes the agreed upon methodology for assessment of fish/shellfish was followed and feels that the use of aquatic- based ATLs as surrogates (i.e., pyrene and fluoranthene), which are also derived from TRVs based on rodent studies, introduces a similar level of uncertainty into the ERA.
	Follow-up DEQ Response:	
	• **Mercury.** Please see the response to General Comment 10. Based on all available evidence mercury should be retained as COPC and CPEC.	Comment noted. See the response to Specific Comment 31. Mercury will also be analyzed for during the pre-FS sampling effort and will be considered for continued monitoring in the FS if detected concentrations in tissue are greater than DEQ's ATLs and CTLs.
	• **PAH TRVs.** If mammalian EPA Eco SSL TRVs for high molecular weight polycyclic aromatic hydrocarbons (HPAHs) and low molecular weight polycyclic aromatic hydrocarbons (LPAHs) are not used to evaluate acceptable tissue levels in aquatic biota, use either a PAH chemical specific toxicity reference value (e.g. benzo(a) pyrene) or an appropriate surrogate more for each detected PAH. The EPA Eco SSLs TRVs for LPAH and LPAH are 65.6 mg/kg bw/day and 0.615 mg/kg bw/day dry weight.	Comment noted. The agreed upon methodology for assessment of PAH exposure by mammals consuming fish/shellfish was followed: use of aquatic- based ATLs as surrogates (i.e., pyrene and fluoranthene). The current toxicity ratios (R_{Bacs}) for mammals based on consumption of crayfish, sculpin, and bass from the Forebay containing PAHs and protection at the individual level range from 1.17E-08 to 6.21E-05. The R_{Bacs} for mammals calculated from Goose Island crayfish and sculpin tissue concentrations range from 1.16E-08 to 4.32E-06. Since the detected concentrations of PAHs in fish and shellfish are so low, utilizing a different surrogate mammalian TRV would not result in different conclusions in the ERA. DEQ's mammalian TRV for (cont'd)

32. (cont'd)		(cont'd) fluoranthene (surrogate for LPAHs) is 26 mg/kg-bw/day for protection at the individual level, which is lower than the suggested EcoSSL TRV for LPAHs of 65.6 mg/kg-bw/day. DEQ's mammalian TRV for fluoranthene is 130 mg/kg-bw/day for protection at the population level, which is approximately 2 times higher than the EcoSSL TRV for LPAHs. Using the EcoSSL TRV for LPAHs would result in lower R_{Bacs} for individual LPAHs based on protection of individual mammals. Given that the highest R_{Bac} of all individual LPAHs for mammals based on protection at the population level is 1.24E-05, using the EcoSSL TRV for LPAHs would result in a maximum R_{Bac} of all individual LPAHs of 2.48E-05 (assuming similar bioaccumulation factors), i.e., 1.24E-05 x 2. Therefore, the findings of the evaluation for mammals consuming tissue containing LPAHs from the Forebay and Goose Island would not change if the EcoSSL TRV for LPAHs is used. DEQ's mammalian TRVs for pyrene are 1,300 mg/kg-bw/day for protection at the individual level and 6,500 for protection at the population level. These DEQ TRVs are approximately 2,100 and 10,600 times higher than the EcoSSL TRV for HPAHs of 0.615 mg/kg-bw/day. Given that the highest R_{Bac} of all individual HPAHs for mammals based on protection at the individual level is 4.43E-07, using the EcoSSL TRV for HPAHs would result in a maximum R_{Bac} of all individual HPAHs of 9.31E-04 (assuming similar bioaccumulation factors), i.e., 4.43E-07 x 1,300. Given that the highest R_{Bac} of all individual HPAHs for mammals based on protection at the population level is 8.96E-08, using the EcoSSL TRV for HPAHs would result in a maximum R_{Bac} of all individual HPAHs of 9.49E-04, i.e., 8.96E-08 x 10,600. Therefore, the findings of the evaluation for mammals consuming tissue containing HPAHs from the Forebay and Goose Island would also not change if the EcoSSL TRV for HPAHs is used.
33.	**Page 12-46, Goose Island Slough.** For fish and piscivorous birds and mammals, the division between the random forebay samples and the Goose Island area is not appropriate These should be treated as one exposure unit for more mobile receptors (e.g. bass, sucker, birds and mammals), and Goose Island media should be included in 90 percent EPCs.	Comment noted. Including the Goose Island data would introduce bias into the ERA since the random samples were designed to represent the Forebay as a whole and each random sample was spatially-distributed equally across the entire unit. In addition, the targeted samples near Goose Island had lower COI concentrations, and if they had been included, the resulting EPCs would have likely been lower than the random Forebay EPCs presented and used in the RI and risk assessments.

33. (cont'd)	**Follow-up DEQ Response:** Please provide a list of COIs for which the inclusion of the Goose Island data would change either the outcome of the risk screening or the comparison to reference. Ideally, this would be completed with the Bradford Island sediment data as well.	Comment noted. As described previously, the targeted samples near Goose Island had lower COI concentrations and fewer COIs than in the random Forebay dataset. If the Goose Island samples were combined with the random Forebay samples, the resulting EPCs would have likely been lower than the random Forebay EPCs presented and used in the RI and risk assessments. There may be a decrease in the number of COPCs/CPECs (based on detection frequency considerations since the combined sample size will exceed 20) and a decrease in the estimated risks (since forebay EPCs may be "diluted" by the lower Goose Island concentrations), if data for Goose Island media were combined with the random Forebay dataset. The same outcome would likely result by combining the targeted Eagle Creek samples with the random Forebay samples, for the same reasons described for Goose Island. No COIs were ignored in the HHRA and ERA evaluation of Goose Island and Eagle Creek sediment and tissue. All detected chemicals from these areas were included in the COPC/CPEC identification process as described below. The HHRA and ERA completed risk screenings for Goose Island sediment and tissue and Eagle Creek sediment that was similar in process to the screening conducted for the random Forebay media. In the RAs, COI concentrations in Eagle Creek and Goose Island media were compared to SLVs, following DEQ's COPC identification methodology. The results are shown in Tables M-41 through M-44 for the HHRA and in Tables N-61 through N-79 for the ERA. There would be no change in the outcomes of the risk screening or COPC selection by inclusion of these data, since these data <u>were</u> already included and considered in the RAs. The RAs did not perform a new comparison of Goose Island and Eagle Creek media to Reference media, but incorporated the results of the earlier comparison, as discussed in Section 8.3.2 (Table L-7).
34.	**Page 12-49, Section 12.5.4.3, Risk Interpretation:** • **Risk screening ratios for benthic and aquatic receptors**. A toxicity ratio >5 for benthic invertebrates in order to be identified as a CPEC should not be used. All COIs with a hazard quotient >1 should be retained as CPECs in the risk assessment. (Refer to the note at the beginning of section II of DEQ's Guidance for Ecological Risk (cont'd)	• Comment noted. See the response to Specific Comment 24, which indicates a Q=1 will be used to identify CPECs for benthic invertebrates and was the target hazard value already used for aquatic organisms. The agreed upon hierarchy for water SLVs and sources of sediment SLVs, as presented in the 22 April 2010 Memorandum (previously referenced in the responses to Specific Comments 25 and 26), were used in the ERA. (cont'd)

34. (cont'd)	(cont'd) Assessment: Levels I, II, III, IV: "In Task 9(c), page II-8 of the Level II Ecological Risk Assessment Guidance, please note that the Q = 5 guidance applies only to soil, and does not apply to water and sediment. Until other screening level values become available, water and sediment screening should be done using the SLVs provided in Tables 1 and 2.") • **Phased risk screening for tissue.** The text states (first bullet on this page) that, "*If a CPEC in tissue is also present in sediment at concentrations in exceedance of the bioaccumulation SLV (i.e., it is also a CPEC in sediment), then further risk assessment may be helpful to evaluate the actual potential for adverse effects to occur from exposure to site-related CPEC concentrations.*" Tissue CPECs should be considered site related regardless of results of the sediment evaluation. Tissue CPECs should not be screened out based on a comparison between site and reference sediment. • The second bullet on this page says that, *If a CPEC in tissue is either undetected, present below Reference Area concentrations (inorganics only), or present below sediment SLVs, further risk assessment may not be helpful because tissue concentrations likely do not correlate with current sediment concentrations at the site. If this is the case, the tissue levels could reflect exposure to other sources in the river or could reflect historical body burdens.* The Reference Area bass are elevated for cadmium, lead and nickel, and do not therefore do not meet the conditions of a Background location. Tissue levels are considered site related regardless of the sediment comparisons.	(cont'd) • Comment noted. See the response to Specific Comment 11 and the response to the following bullet. The objective of this first bullet referenced in the comment is not to differentiate between tissue CPECs that are site-related and those that are not site-related, but to recommend a way to interpret the findings of both the tissue and sediment evaluations for the River. The point of this statement is that further risk assessment on a CPEC identified for tissue that is also detected in sediment above the Reference concentration and SLV may be helpful because the results of the screening-level risk assessment indicate that some relationship may exist between site sediment and tissue concentrations. Likewise, further risk assessment on a CPEC identified for tissue that is not detected in sediment, or is detected below the Reference concentration and/or SLV may not provide much insight because the results of the screening-level risk assessment indicate that no apparent relationship exists between site sediment and tissue concentrations (as referenced in the second bullet discussed in the following comment). • First point in comment accepted, and second point regarding Reference Area is noted. Please see the response to Specific Comments 11, which address these specific metals in Reference Area bass. Based on the available information, it is unclear whether or not a source of these metals originates from Bradford Island. Therefore, initial FS samples that will be collected in the former removal areas as part of the River OU FS will be analyzed for all metals (see the responses to General Comments 3 and 6). Clarification on DEQ's definition of a "background" location for a riverine environment is needed. Although it is more feasible to identify relatively pristine background locations for Upland sites, as was accomplished for this project, under conditions of constant change and influence from upstream sources, the Portland District feels the Reference Area selected for the River OU does meet the criteria applicable to this (cont'd)

34. (cont'd)		(cont'd) environment. If a contaminant source does exist upstream, these contaminants could potentially migrate downstream and impact Forebay media. As per CERCLA guidance, it is legitimate to account for ongoing upstream sources that could contribute to a site, as it is impossible to maintain remedial goals that are below upstream concentrations. The response to the comment above ("Phased risk screening for tissue") addresses the purpose of the statements made in the second bullet referenced in this comment.
	Follow-up DEQ Response: • **Phased screening for tissue.** The decision rules for tissue in relation to sediment would be relevant if the sediment and tissue under evaluation were co-located. For the RI and risk assessment presentation, this is not the case (see General Comments 3 and 6). Therefore, tissue CPECs should not be screened out based on comparison to sediment (SLVs or comparison to reference).	Comment noted. See the response to Specific Comment 31.
	• **Background location.** DEQ's definition of background level (DEQ Rule, 340-122-0115) "means the concentration of hazardous substance, if any, existing in the environment in the location of the facility before the occurrence of any past or present release or releases." DEQ Guidance (1994) goes on to say "background samples are taken to determine the level of a particular compound that naturally occurs in the area of a site. Background samples should not be collected from areas where other anthropogenic sources may have contributed the same consistently as those encountered at the site in question". The reference Area selected by the Corps does not represent naturally occurring background concentrations and does not meet the criteria outlined above. Contaminants may exist upstream at other contaminated sites, but this evaluation should be included as a part of the feasibility study to determine if upstream contaminants are moving and would impact the Bradford Island site.	Comment noted. According to EPA's *Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites*, EPA's definition of background is "background refers to substances or locations that are not influenced by the release from the site, and are usually described as naturally occurring or anthropogenic" (EPA, September 2002) Please see response to Comment 33.

35.	**Page 12-44 through 12-46, mouth of Eagle Creek and Goose Island slough.** Screening these areas separately from Bradford is defensible only for benthic invertebrates and small home range aquatic biota such as crayfish and sculpin. For other receptors the areas should be combined into one relevant exposure unit. **Follow-up DEQ Response:** Please identify any COPCs/CPECs that would have been identified if the combined dataset including Goose Island and Eagle Creek been evaluated for humans and wildlife.	Comment noted. Please see the response to Specific Comments 33, which describes the purpose and reasoning for maintaining separate datasets for the random and targeted samples. Combining the data from Eagle Creek and Goose Island slough would not likely change the findings of the RAs due to the generally lower concentrations of COIs measured in these targeted areas relative to the greater Forebay (random samples). It is likely that fewer COPCs/CPECs would have been identified if the combined datasets had been evaluated for humans and wildlife. Comment accepted. Protection of higher trophic-level mammals (such as mink) that may forage in the Upland OU will be added to the assessment endpoints described in this section. Since the SLVs for mammalian receptors as a generic receptor class were already used in the screening-level ERA, no changes to the quantitative evaluation are necessary.
36.	**Page 12-52, Tissue.** All COPCs (e.g. mercury, lead, cadmium, PAHs, P2EHP, PCBs in bass) that exceed risk screening levels or for which there are no SLVs should be retained for future monitoring and assessment. These should not be dropped as sediment COPCs. **Follow-up DEQ Response:** COIs that exceed risk levels or do not have SLVs are COPCs and should not be dropped as COPCs in the risk assessment. Please see response to comments 3 and 6. This will ensure that monitoring, even though repeatedly termed an FS task, will provide more refined risk estimates and address data gaps for in the risk assessment for source area COPCs.	Comment noted. Please see the responses to General Comments 3 and 6, which describe the initial River OU FS sampling effort that will be conducted and will include analysis of these chemicals in sediments at the former removal area and in bass collected from the Forebay and Reference Areas. Comment noted. See the response to Specific Comment 31.
37.	**Page 12-57 through 12-62, Goose Island and mouth of Eagle Creek.** The screening and conclusions should be re-done to include all COIs, and not be limited to "only additional CPECs that have not already been identified as a part of the random forebay event". (cont'd)	Clarification provided. All COIs detected in Eagle Creek and Goose Island media were included in the risk-based screening for these targeted exposure areas, and the same methodology used to screen the random Forebay data was used for these two targeted datasets. The random Forebay data were included in the discussions for Eagle Creek and Goose Island to provide context for the CPECs identified in these two targeted locations relative to the broader and more robust tissue and sediment random Forebay datasets. Clarification on this comment would be helpful to identify the statement in quotes, which could not be found in Section 12. No changes are needed to address this comment. (cont'd)

37. (cont'd)	(cont'd) **Follow-up DEQ Response:** The text the comment is referring to is on Page 12-45, which states "because tissue data have been collected from the greater Forebay (the random samples), the purpose of the bioaccumulation evaluation for eagle Creek sediment was to identify any additional CPECs that have not already been identified through the random Forebay sampling event. Any bioaccumulative CPEC identified in Eagle Creek sediments (i.e. maximum sediment concentration above the bioaccumulation SLV) were compared to the tissue data to determine their actual presence in measured tissue data from the forebay." For this area, Aroclor 1248 is detected in sediment above screening levels but appears to have been dropped given Aroclor 1248 was not detected in bass tissue. PCBs should be carried forward as a COPC for this area.	(cont'd) Comment accepted. Given the influence of weathering and metabolic processes on the ability to identify PCBs measured as Aroclors in tissue, Aroclor 1248 will not be dropped as a COPC or CPEC in Eagle Creek sediments. However, Aroclor 1248 was not detected in pre-removal Forebay sediment samples (Table I-7) or random Forebay and Goose Island sediment and tissue samples (Tables I-8 and I-9), indicating that the source of Aroclor 1248 detected in Eagle Creek sediments is not likely associated with former activities at Bradford Island. If the findings of the pre-FS sampling also indicate the absence of Aroclor 1248, this information will be considered in the FS.
38.	**Reference to bis(2-ethylhexyl)phthalate.** The text of the report, and the list of acronyms, refers to bis(2-ethylhexyl)phthalate as B2EHP, but some of the figures refer to it as BEHP. Please revise the abbreviation in the figures to be consistent with that in the text.	Comment accepted. The text will be corrected to be consistent.
39.	**Section 13.5.** The source of metals, including mercury as well as PAHs that were determined to be elevated in forebay tissue compared to reference area tissue has not been determined. However, several of these elevated concentrations appear correlated to PCB in sediment and there is a plausible connection to the sandblast area or landfill. Therefore, DEQ recommends retaining antimony, arsenic, cadmium, copper, chromium, lead, nickel, mercury, zinc, phthalates and PAHs for additional evaluation and monitoring.	Comment noted. Please see the response to General Comment 9, which acknowledges the benefit of collecting additional data from the removal area to further assess runoff, erosion, and mass wasting from the Upland OU to the River. These additional data will be further evaluated in the Upland OU FS in conjunction with the findings of the overland runoff pathway evaluation that will be performed in the Upland OU baseline risk assessments. The chemicals listed in the comment will be analyzed for in sediment and bass tissue, and the need for additional monitoring of these chemicals will be explored in the River OU FS (also see the responses to General Comments 3 and 6 that describe the initial FS sampling effort). Although a plausible source and transport mechanism for COIs may exist at three of the Upland AOPCs (most notably the Sandblast Area), the Portland District does not agree that there is enough data conclude that the source of PCBs in the River is the same as the source of other Upland non-PCB chemicals. The primary Bradford Island source of the River OU PCB contamination is from equipment disposal along the northern shoreline (see the response to General Comment 9). The mass wasting/erodible soil pathway will be further evaluated in the Upland (cont'd)

39. (cont'd)	(cont'd) **Follow-up DEQ Response:** COIs elevated in tissue from the forebay may be related to source areas around Bradford Island as indicated. For example, in addition to PCBs, metals and phthalates are elevated in source area sediment. As outlined in General Comment 3, additional sampling of these areas will help will help evaluate these additional chemicals, and assist in the interpretation of tissue data. For metals, several localized species such as clams and crayfish are elevated in the forebay relative to the reference location (e.g. antimony/crayfish; arsenic/crayfish; clams and crayfish/cadmium; crayfish/chromium; crayfish/lead; crayfish/nickel; crayfish/mercury.	(cont'd) BHHRA and BERA, and source control measures will be considered during the Upland OU FS. Comment noted. See the response to Specific Comment 31.
40.	**Appendix O, Uncertainty Analysis.** The uncertainty in the use of the random forebay samples instead of samples around Bradford Island is addressed by re-evaluation of data collected from within the footprint of the sediment removal area before the removal action. This analysis was limited to only 5 samples within the removal area. Instead, this analysis should be completed using the larger dataset collected around Bradford Island, some of which were not removed as a part of the early action, and may represent current conditions in those locations. This evaluation will change the results of the COPC identification process. **Follow-up DEQ Response:** Please see the response to General Comments 3 and 6. The uncertainty analysis should be revised to evaluate results using the existing larger dataset of historical sediment data, some of which is present outside the removal action areas.	Comment noted. Please see the response to Specific Comment 33, which discusses the purpose and reasoning for maintaining separate datasets for the random and targeted samples. Also see the responses to General Comments 3 and 6, which describe the initial River OU FS sampling effort that will be conducted in the removal area and greater Forebay. Comment noted. See the responses to General Comments 3 and 6.
41.	**Appendix O, Tables O.2-1, O.2-2, O.2-3, Erodible Soil Evaluation for the Landfill, Sandblast Grit, and Bulb Slope AOPCs.** As one example, it appears that Aroclor 1260 was not screened in these tables where detected, but is instead termed "not a tissue COPC" based on the in-water evaluation. Aroclor 1260 is detected in sediment collected around Bradford Island, and was detected in tissue. PAHs detected in the landfill AOPC is another example. The random forebay sediment samples are not appropriate in determining the COPC list for erodible soil. All COIs from the source areas should be screened and the tables updated.	Comment noted. Tables O.2-1 to O.2-3 will be revised to show a more accurate statement describing the rationale for the selection of COPCs for the mass wasting pathway. Bioaccumulative COPCs that were retained on the basis of exceedance of SLVs or lack of SLVs will be clearly noted. The term "not a tissue COPC" will be removed from the tables since it was never used as a basis for identification of COPCs. In addition, to avoid confusion, Aroclor-1260 will be indicated as a retained COPC and will be footnoted to show that all Aroclor mixture components are also included in "Total PCBs" which are retained as COPCs for the mass-wasting pathway for all three Upland AOPCs. The text in Section O.2.1.4 of Appendix O will also be expanded to (cont'd)

41. (cont'd)		(cont'd) incorporate the discussion provided below. Under current and likely future conditions, the only viable exposure route for human receptors for the mass wasting pathway is through bioaccumulation and subsequent consumption of smallmouth bass and crayfish. Direct exposure to eroded soils in the River OU is unlikely for humans. Selection of COPCs for the mass wasting pathway was based on multiple lines of evaluation including a comparison to Reference sediments and a comparison to sediment bioaccumulation SLVs. Whether or not a chemical was selected as a tissue COPC was not the sole reason for identifying COPCs for the mass wasting pathway but was included in the tables primarily to provide context and a deeper understanding of the issues based on sediment and tissue data collected to date. As noted in the RI/FS MP (URS 2007), tissue data for consumable species is a legitimate and necessary means of confirming whether uptake of chemicals released to the Forebay is actually occurring or could occur. Although Aroclor 1260 is shown as not a selected COPC in Table O.2-1, the table shows that Total PCBs (using congener data) are retained as COPCs for the mass wasting pathway for all the three Upland AOPCs (also described in Section O.2.1.4). Aroclor 1260 was detected in soils of the three Upland AOPCs, but was not detected in any Forebay (random or targeted) or Reference Area media collected in support of the RI and risk assessments (see the tables in Appendices I and L). Similarly, Table O.2-1 also shows that carcinogenic PAHs were retained as COPCs for the mass wasting pathway. Some bioaccumulative chemicals in erodible soils could not be evaluated due to a lack of bioaccumulation-based SLVs and were retained as COPCs (e.g. 2-methylnaphthalene in Table O.2-1) with a few exceptions. The only bioaccumulative organic chemicals without SLVs that were eliminated as COPCs are carbazole and di-n-butylphthalate for the Landfill erodible soils and carbazole in the Sandblast Area erodible soils. Carbazole and di-n-butyl phthalate were eliminated based on their extremely low toxicity to humans (e.g., the US EPA residential screening level [RSL] of di-n-butyl phthalate is 6100 mg/kg); there is no RSL for (cont'd)

41. (cont'd)	**Clarification of DEQ Response: Aroclor** 1260 was detected in Stage 1 source area drain outfall samples, several sediment samples, and in one high-volume water sample. Some of these data were not included as part of the RI data set. DEQ wishes to confirm that analytes detected in upland samples and in non-RI data are addressed as part of source control evaluation and that there are not COPC/CPECs that are overlooked on this basis. Relevant sediment data should be used to assess the migration of these chemicals into the River OU.	(cont'd) carbazole but its oral LD_{50} for rats is greater than 5,000 mg/kg (HSDB database). Therefore, the lack of bioaccumulation-based SLVs for these chemicals was not viewed as sufficient reason for retaining them as COPCs. Bioaccumulative metals without SLVs (and that also exceeded reference sediment concentrations) include cadmium, lead, mercury, thallium and zinc in Landfill AOPC erodible soils, cadmium, lead and zinc in Sandblast Area erodible soils, and lead in Bulb Slope erodible soils. The tables and text will be revised to identify these COPCs. Also see the responses to General Comments 3, 6, and 9, which describes the additional data that will be collected from the removal area to further assess potential runoff, mass wasting, and erosion from the Upland OU to the river. These data will be evaluated in the Upland OU FS in conjunction with the findings of the overland runoff pathway evaluation that will be performed in the Upland OU baseline risk assessments. Comment noted. See the responses to General Comments 3, 6, and 9.
42.	**Appendix O, Table O.3-10.** DEQ guidance includes screening level values for many of these COIs. At the minimum, DEQ values should have been used, but since these values do not include a full evaluation of bioaccumulation, USEPA Region 5 values should be used for these chemicals (e.g. pesticides, SVOCs, tributyltin). **Follow-up DEQ Response:** DEQ would prefer that relevant screening levels be used in the ERA to evaluate COIs instead of listing them as CPECs without SLVs (See Specific Comment 25 and responses for discussion of SLVs). This (cont'd)	Comment noted. EPA Region 5 values were not one of the SLV sources identified in the 22 April 2010 Memorandum (see pages 3 and 5). As stated in Section 12.3.5 of the RI and in Section O.3.1.6 of Appendix O, those COIs without dietary based SLVs (listed in Table O.3-10) were retained as CPECs for the Landfill and Sandblast Area AOPCs and warrant further consideration for birds and mammals in the Level III BERA for the Upland OU. EPA Region 5 TRVs, as well as other sources of TRVs, and their uncertainties will be considered in the BERA. Comment accepted. See the response to Specific Comment 25. As discussed in Section 12.3.5, "... the bioaccumulative CPECs at the Landfill and Sandblast Area AOPCs for which dietary-based SLVs are (cont'd)

42. (cont'd)	(cont'd) limits the focus of a Level III evaluation to those chemicals that are known to exceed risk based levels. In the case of bioaccumulation, COIs cannot be screened out unless an bioaccumulative SLV is used in the analysis.	(cont'd) not available (Tables N-3, N-4, N-13, and N-14) also warrant further consideration for birds and mammals." The list of bioaccumulative CPECs for which appropriate SLVs are unavailable will be retained for the Level III BERA. Dietary-based SLVs were available for all bioaccumulative CPECs identified for the Bulb Slope and Pistol Range.
43.	**Appendix O, Tables O.3-3 and O.3-4, Mass Wasting Evaluation, Benthic Invertebrates.** A multiplier of 5 ("Q"=5) should not be used for benthic invertebrates as specified by DEQ guidance. This will designate several additional chemicals as CPECs. As an additional line of evidence, sediment samples off these sources should be screened (Appendix G).	Comment noted. Please refer to the response to Specific Comment 24, which indicates a Q=1 will be used to identify CPECs for benthic invertebrates. Sediment samples from the former removal areas will be collected as part of the initial River OU FS sampling effort. These new sediment data will be evaluated in the Upland OU FS in conjunction with the findings of the overland runoff pathway evaluation that will be performed in the Upland OU Level III BERA, which will include a more site-specific evaluation for the benthic community.

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